Message from the Editor-in-Chief

Dear Colleagues,

The Online Journal of New Horizon in Education (TOJNED) welcomes you. TOJNED also thanks all researchers, practitioners, administrators, educators, teachers, parents, and students from all around the world for visiting this volüme.

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TOJNED is a quarterly journal (January, April, July and October). This online periodical is devoted to the issues and applications of education. Reviewed by leaders in the field, this publication is designed to provide a multi-disciplinary forum to present and discuss all aspects of education.

TOJNED provides new development in education forum and focal point for readers to share and exchange their experiences and knowledge each other to create better research experiences on education.   The main purpose of this sharing and exchange should result in the growth of ideas and practical solutions that can contribute toward the improvement of education.

TOJNED records its appreciation of the voluntary work by the following persons, who have acted as reviewers for one or more submissions to TOJNED. The reviewers of this issue are drawn quite widely from education field. Reviewers' interests and experiences match with the reviewed articles.

I am always honored to be the editor-in-chief of TOJNED. Many persons gave their valuable contributions for this issue. I would like to thank the editorial board of this issue.

TOJNED invites article contributions. Submitted articles should be about all aspects of education science.   The articles should also discuss the perspectives of students, teachers, school administrators and communities. The articles should be original, unpublished, and not in consideration for publication elsewhere at the time of submission to TOJNED.

For any suggestions and comments on the international online journal TOJNED, please do not hesitate to contact with us.

October 01, 2016
Prof. Dr. Aytekin ISMAN
Editor in chief

Editorial Board

Table Of Contents

AN ASSESSMENT ON THE EXTENT OF EMPLEMENTATION OF THE DIOCESAN CATECHETICAL PROGRAM IN DISTRICT I AND DISTRICT III OF THE DIOCESE OF IMUS

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Abstract: This research was an attempt to look into the extent of implementation of the Diocesan Catechetical Program in 24 parishes under Districts I and III of the Diocese of Imus. The research was carried out by gathering the following data through a survey form questionnaire: Profile of the respondents in terms of age, gender, and length of service in the parish Extent of the implementation of the Diocesan Catechetical Program in terms of: goals/objectives resources: human, physical and financial. Results on profile of the respondents revealed that District I and III have a middle aged manpower. Majority of those involved in parish catechetical activities and organizations are female (304), and only 19 males. One hundred eighty of the respondents served the parish from 1-10 years but others served for almost 35 years. Results on goals/objectives and resources (human, physical and financial) revealed that Districts I and III, in general are able to implement the programs. With this, the researcher was led to a conclusion that Districts I and III in general were able to implement the diocesan catechetical program. Moreover, the researcher highlights that among the three resources, it is the financial resources which obtained the lowest mean score. The generosity of the catechists to shoulder personally some of the expenses necessary to accomplish their catechetical tasks is remarkable. But still the Diocese of Imus must create a well-defined program in generating funds for its catechetical program.

INTRODUCTION

The role of catechesis in the Church's mission of evangelization had been clearly spelled out by Jesus himself in the gospel of Matthew when he said: "Go therefore and make disciples of all nations, baptizing them in the name of the Father, and of the Son, and of the Holy Spirit, teaching them to observe all that I have commanded you; and lo, I am with you always to the close of age" (28:19-20). Right after his death and resurrection, Jesus together with the Father sent the Holy Spirit in order that he might accomplish from within the work of salvation and that he might animate his disciples to continue the mission to the whole world (General Directory for Catechesis, # 1, henceforth GDC). The presence of numerous Church documents on evangelization is a clear manifestation that the Church is serious in its efforts to fulfill Christ's missionary mandate in above scripture.

The congregation for the Clergy states that one among the many modern Church documents that has given so much importance on catechesis vis-à-vis evangelization is the post-synodal Apostolic Exhortation *Evangelii Nuntiandi* (Evangelization Today) of Pope Paul VI. The Congregation for the Clergy furthers that this document articulates a particularly important principle, namely, that of catechesis as a work of evangelization in the context of the mission of the Church. It emphasized that catechesis would be considered as one of the enduring concerns of the Church's missionary mandate at present (GDC, #4).

Ever faithful to the demands of the gospels on evangelization and those of his predecessors, St. John Paul II in his Apostolic Exhortation *Catechesi Tradendae* (Catechesis in our Time) strongly emphasized that "the Church has always considered as one of its primary tasks, for, before Christ ascended to his Father… he gave the apostles a final command – to make disciples of all nations and to teach to observe all that he had commanded" (*Catechesi Tradendae*, # 1, henceforth CT). The Congregation for the Clergy explains that this exhortation of St. John Paul II in Catechesi Tradendae forms a purposeful unity with Evangelii Nuntiandi of Pope Paul VI and fully locates catechesis within the context of evangelization.

Moreover, the Philippine Church being the cradle of Christian Catholic faith in Asia in particular has been faithful with her missionary mandate to spread the faith. In the pastoral letter of the Catholic Bishops Conference of the Philippines (CBCP) titled "To form Filipino Christians Mature In Their Faith", the bishops

announced that "a fundamental issue of our Christian life and a chief priority of the Catholic Church in the Philippines… is catechesis" (Legaspi, 1990. P.1 as cited in Reblora and Vilog, 2010).

The Diocese of Imus (a suffragan of the Archdiocese of Manila) more than ever is responding seriously to the challenges in the catechetical ministry especially as it celebrates its Golden Jubilee as a Diocese. The most concrete response so far of the Diocese of Imus to address the catechetical challenges within her jurisdiction is the promulgation of the primer titled Diocesan Pastoral Priorities for Evangelization (DPP-E) in 2004 spearheaded by his Excellency Cardinal Luis Antonio G. Tagle (the former bishop of the diocese). The DPP-E clearly defines the direction of the diocese's catechetical programs. It hopes to launch catechetical programs that are "holistic, inculturated, systematic, sustainable, and responsive to the needs of the faithful" (Diocesan Pastoral Priorities for Evangelization 2004, p.2, henceforth DPP-E).

FRAMEWORK OF THE STUDY

SEE (Present Context) Vicarial Catechetical Programs: 1. Profile of respondents 2. goals/objectives; 3. resources: human; physical; and financial	→	JUDGE (Ideal) In the light of DPPE's goals, plans and programs as specified under the ministry on catechesis	→	ACT (Suggestions) Possible suggestions that can help enhance the implementation of the catechetical programs

The researcher adopted the framework "see, judge, act" in this study which was used in an earlier research titled "An Assessment of the Extent of Implementation of the Diocesan Catechetical Programs in the Vicariate of Immaculate Conception: Basis for its Enrichment" (Cf. Reblora and Vilog 2010). The see, judge, act framework is basically adopted from the thoughts of Paulo Reglus Neves Freire, (September 19, 1921) a Brazilian teacher of "adult literacy" whose seminal writings are The Pedagogy of the Oppressed, Education as the Practice of Freedom, Cultural Action for Freedom and Pedagogy of Hope. (http://frates.wordpress.com/liberation-theology-and-u-s-catholics4/16/2010). Paulo Freire of Latin America was greatly influenced by Cardinal Joseph Cardijn who first used the "see, judge, act" in 1940s based on St. Thomas Aquinas's teachings of prudence (http://liberationtheology.org/articles/chronology/4/16/2010).

In this research paper, "see" speaks of the present situation of the Diocesan Catechetical Programs in District I and District III of the Diocese of Imus in terms of the profile of the respondents, the goals and objectives, and resources: human; physical; and financial. Survey form questionnaires were formulated for the researcher to have a grasp of the present context or situation mentioned above. "Judge" speaks of the ideal situation in the light of the goals, plans and programs defined in the DPPE in its ministry on catechesis. "Act" is the proposed plan of action, including suggestions and recommendations, to enhance and enrich the implementation of the diocesan catechetical programs in Districts I and III of the Diocese of Imus.

METHODOLOGY

Location of the Study

The study is an assessment of the extent of implementation of the Diocesan Catechetical Programs in District I and District III of the Diocese of Imus. The study is limited on the programs defined in the Diocesan Pastoral Priorities for Evangelization under the Ministry of Catechesis.

Likewise, the researcher would like to put on record that he intended to cover all the 27 parishes of nine municipalities/cities composed of Bacoor City, Imus City, General Trias, Trece Martires City, Naic, Tanza, Maragondon, Ternate, and Magallanes under the jurisdiction of District I and District III. However, there were three parishes whose parish priest asked that they should not be included in the study for varied reasons.

Because of this, the researcher had 24 parish respondents instead of 27. The different parishes where this study was conducted can be found in the appendix A.

Materials Used

The researcher made use of the self-made survey form questionnaire which was validated by selected catechists in the Vicariate of Immaculate Conception in 2008. The survey form questionnaire has two parts. Part 1 gathered the profile of the respondents in terms of age, gender and length of service in the parish. Part 2 was the assessment part of the instrument which was composed of 25 questions classified into two: goals/objectives and resources. The resources were in tripartite division: human; physical; and financial. There were eight questions for goals/objectives and five questions for the physical facilities, five questions for financial resources, and seven questions for human resources. The copy of survey form questionnaire can be found in the appendix B.

Another basis in the formulation of the questions is the rule of agreement and disagreement of the psychometric scale named after Rensis Likert (http://www.businessdictionary.com/definition/Likert-scale.html 4/16/2010). The Likert Scale is a known format of questionnaire used in educational research, especially in the field of special education. The four point Likert Scale was preferred by the researcher to determine the level of agreement by the respondents on the questions (http://en.wikipedia.org/wiki/Likert-scale 4/16/2010). In every item of the questionnaire the researcher provided the respondents four potential choices: 4 – strongly agree; 3- agree; 2- moderately disagree; 1- disagree
The researchers decided to use the four point scale to limit the choices and eventually led the respondents to make a decisive choice. The copy of the self-made survey form questionnaire with an equivalent verbal interpretation can be found in the appendix C.

Sampling Methods

The researcher did not employ sampling method in this study because his intention was to get 100% of the catechists and coordinators of catechists in every parish as his respondents (target population) as much as possible. However, due to some unavoidable circumstances, there were a few (three to five per parish) catechist who were not able to return the answered survey form questionnaire or were not given the survey form questionnaire at all, even if the researcher visited several times all the parishes involved in the study. Moreover, with regard to officers and members of Parish Pastoral Council as respondents, the researcher merely gave a copy to those who were available to answer the survey form questionnaire whenever he visited a particular parish. A great majority of the respondents however, were catechists, although this would not cause conflict because the survey form questionnaire was basically designed for the catechists.

Date Gathering Procedure
In deference to the existing offices in the catechetical ministry of the Diocese of Imus, the researcher presented the research proposal to Fr. Eleomar Dendiego, Director of Diocesan Catechetical Ministry and sought for his approval to conduct the said research in District I and District III of the Diocese of Imus. Fr. Dendiego readily approved the said proposal on April 23, 2010.

After the necessary communications to different offices have been forwarded, the researcher visited the parishes of Districts I and III to personally distribute the revised self-made survey form questionnaire to the following respondents: Coordinators of the catechists in the parish; the catechists; and officers and members of Parish Pastoral Council. The researcher tried his best to gather at least 5 valid respondents for each parish and a minimum of 300 valid respondents for the whole District I and District III.
To answer the survey questionnaire forms, the researcher in most cases explained carefully to the respondents the importance of each of the 25 questions and reminded them to honestly choose as answer that best describe their present experiences as far as their parish catechetical program was concerned. The respondents were told to choose a number from the scale provided, which corresponds to their concrete experiences in their parish catechetical activities.

Methods for Analysis and Statistical Treatment

The researcher made use of the descriptive/analytical research design to assess the extent of implementation of the Diocesan Catechetical Programs in District I and District III of the Diocese of Imus. The data gathered to answer the research problems were limited to the responses in the self-made survey form questionnaire distributed. After gathering all the necessary data, the researcher, with the help of his statistician (Ms. Challiz Feranil), employed the basic statistical procedure to determine the percentage and weighted mean for analysis.

The researcher used basic averaging as a statistical treatment in presenting the profile of the respondents in terms of age, gender, and length of service in the parish. Moreover, the researcher employed the weighted mean in assessing the extent of implementation of the diocesan catechetical program in terms of goals and objectives and resources (Human, physical, and financial). "The weighted mean is the most common type of average, where instead each of the data points contributing equally to the final average, some data points contribute more than others. The notion of weighted mean place a role in descriptive statistics…" (http://en.wikipedia.org/wiki/Weighted_mean09/15/2012).

RESULTS AND DISCUSSION

This study used a total of 323 validated survey forms retrieved from 24 parishes of four vicariates. The researcher provided tables with complete statistically treated data in presenting the results of the study to help readers easily comprehend the whole presentation.

The General Directory for Catechesis clearly mentioned that the bishop of every diocese has the primary responsibility for catechesis in his jurisdiction. He must regard catechesis as one of the most fundamental tasks of his ministry. His concern for catechetical activity will lead him to assume the overall direction of catechesis in his diocese. He must ensure to effectively put into operation the necessary personnel, means and equipment, and also the financial resources (GDC, # 222-223). Mindful of this, Cardinal Tagle, the former bishop of the Diocese of Imus promulgated the DPP-E in 2004 to address properly the concerns of his diocese regarding catechetical activities (Cf. DPP-E). The following pages will measure the efficiency of the implementation of diocesan catechetical program in its efforts to put in flesh the dreams and hopes of the Diocesan Pastoral Priorities for Evangelization of the Diocese of Imus.

Table I. Frequency of Respondents in Districts I & III

Vicariates in District I & III	Frequency	Percent	Valid Percent	Cumulative Percent
Vicariate of Sto. Nino	61	18.9	18.9	18.9
Vicariate of Our Lady of the Pilar	92	28.5	28.5	47.4
Vicariate of Our Lady of Assumption	73	22.6	22.6	70
Vicariate of St. Francis	97	30	30	100
Total	**323**	**100**	**100**	

In terms of number of catechists as respondents in this study, the Vicariate of St. Francis ranked first with the most number of catechists with 97 in spite of the fact that there were two parishes within this vicariate that requested not to be included in this study. The Vicariate of Our Lady of the Pillar ranked second with 92 catechists even if one parish within this vicariate requested not to be included in the study. The Vicariate of Our Lady of Assumption ranked third with 73 catechists while the Vicariate of Sto. Nino was the last in the ranking with 61 catechists.

Table 2. Profile of the Respondents in Terms of Age

Respondents from Four Vicariates of Districts I & III	Frequency	Percent	Valid Percent	Cumulative Percent
30 and below	6	1.9	1.9	1.9
31-40 years old	18	5.6	5.7	7.6
41-50 years old	56	17.3	17.7	25.3
51-60 years old	122	37.8	38.6	63.9
61-70 years old	90	27.9	28.5	92.4
71 years old and above	24	7.4	7.6	100
Total	316	97.8	100	
Missing System	7	2.2		
Total	**323**	**100**	**100**	

As shown in table 2, the highest percentage is in the age bracket of 51-60 years old, comprising 37.8% of the total respondents or 122 persons. Those who are within the age bracket of 61-70 years old is 27.9% of the total respondents or 90 persons. There are 56 persons within the age bracket of 41-50 years old or 17.3% of the total respondents. There are 24 persons or 7.5% of the total respondents whose age are within the bracket of 40 years old and below.

Basically, majority of the catechists of District I and District III of the Diocese of Imus or 178 respondents (55.1%) are within the bracket of 41-60 years old. The researcher finds this figure and age bracket as something positive at present for the diocese because usually Filipinos within this age bracket are those who are already committed with their work and responsibilities. However, most of them are about to retire from parish involvement within 10 to 15 years from now. Since they comprise the majority of the respondents, it is something that parishes within District I and District III must prepare for. Besides, 90 persons or 27.9% of the respondents are already within the age bracket of 61-70 years old. Again, it would be expected that they will retire within a couple of years from now especially if they are to follow the recommendation of Reblora and Vilog (2008) in their earlier research in which they said that ideally, the age of retirement for school-based catechists is at 70 years old. The missing systems in the table are the respondents who did not indicate their age.

Table 3. Profile of the Respondents in terms of Gender

Respondents from Four Vicariates of Districts I & III	Frequency	Percent	Valid Percent	Cumulative Percent
Female	304	94.1	94.1	94.1
Male	19	5.9	5.9	100
Total	**323**	**100**	**100**	

It has been the prevailing observation that the majority of the parish workers and volunteers are middle aged women. In this study, 304 out of 323 respondents are female. Basically, 94.1% are women and 5.9% are men. The researcher would like to reiterate that this study was conducted in 24 parishes of District I and District III of the diocese. Besides, these 24 parishes are distributed in the nine towns of the province of Cavite. These figures about the involvement of women in the catechetical program of the Diocese of Imus indicate that, indeed, there is an urgent need to develop a program that would effectively motivate male parishioners of the diocese to actively get involved in different organizations within their parishes specifically, in the catechetical apostolate.

Table 4. Profile of the Respondents in Terms of Years of Service in the Parish

Respondents from Four Vicariates of Districts I & III	Frequency	Percent	Valid Percent	Cumulative Percent
0-5 years	97	30	31.8	31.8
6-10 years	83	25.7	27.2	59
11-15 years	52	16.1	17	76.1
16-20 years	48	14.9	15.7	91.8
21-25 years	18	5.6	5.9	97.7
26-30 years	3	0.9	1	98.1
31-35 years	4	1.2	1.3	100
Total	305	94.4	100	
Missing System	18	5.6		
Total	**323**	**100**		

Thirty percent (30%) of the respondents have been working in the parish for one month to five years already. This bracket is the highest in terms of frequency with 97 respondents. One hundred eighty persons or 59% of the respondents belong to the first two brackets, 0-5 years and 6-10 years in service. Since there are 73 respondents who have been working in their respective parishes for more than 15 years now, it is highly probable that some of those 180 respondents mentioned above would still be around helping in the catechetical program of their parish five to ten years from now. Incidentally, the youngest and eldest among the respondents came from the

same vicariate, the Vicariate of St. Francis. The youngest is Lyn Joan Villar Abdani, 28 years old, and has been working in the Annunciation parish as a catechist for three years now, while the oldest is Maria Sanchez Baquiran, 87 years old, and has been working as a catechist in Our Lady of the Holy Rosary Parish for 20 years now. Based on The data gathered, remarkably 25 respondents or 8% were able to stay as volunteer catechists in the parish from 21 to 35 years.

As mentioned by Reblora and Vilog (2010), smooth and good relationship with one another and with their parish priest is one of the factors that keep the catechists continue with their active involvement in the catechetical program of their parish. However, what is very much crucial in keeping catechists towards their volunteer job is the presence of a good catechetical manpower program of the parish.

The tables below present the extent of implementation of the diocesan catechetical program in District I and District III of the Diocese of Imus. The research indicated only the question number in the tables to save space. The whole survey form questionnaire is placed at the appendix B. Moreover, the following numerical value has the corresponding verbal interpretation:

Scale	Verbal Interpretation
3.50 - 4.00	strongly agree
2.50 - 3.49	agree
1.50 - 2.49	moderately disagree
1.00 - 1.49	disagree

Table 5. Extent of Implementation in Terms of Goals and Objectives

OALS AND OBJECTIVE (Survey Form Item Number)	District I				District III			
	Vicariate of Our Lady of the Pilar		Vicariate of Sto. Nino		Vicariate of St. Francis		Vicariate of Our Lady of Assumption	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
Question # 2	3.18	Agree	3.41	Agree	3.18	Agree	2.82	Agree
Question # 3	2.97	Agree	3.21	Agree	3.01	Agree	3.36	Agree
Question # 4	3.35	Agree	3.48	Agree	3.35	Agree	3.36	Agree
Question # 5	2.96	Agree	3.18	Agree	3.0	Agree	2.84	agree
Question # 8	3.08	Agree	3.46	Agree	3.06	Agree	3.3	Agree
Question # 9	2.66	Agree	2.6	Agree	2.64	Agree	2.23	Moderately dis-agree
Question # 17	2.92	Agree	3.24	Agree	3.19	Agree	3.11	Agree
Question # 25	3.12	Agree	3.11	Agree	3.09	Agree	2.87	Agree
Total	**3.03**	**Agree**	**3.21**	**Agree**	**3.06**	**Agree**	**2.99**	**agree**

All of the four vicariates of District I and District III were able to implement the goals and objectives of the diocesan catechetical program of the diocese in their respective areas of jurisdiction as indicated by the interpretation of its weighted mean.

The Vicariate of Our lady of the Pillar got a total weighted mean rating of 3.03 which is interpreted as agree. Among the eight questions allotted to determine the extent of the implementation of diocesan catechetical program in terms of goals and objectives, question number 4 which says: our parish has an adequate formation program for our catechists, obtained the highest weighted mean rating of 3.35. Its lowest weighted mean rating was 2.66 which came from question number 9 which says: each family especially parents are involved in catechetical activities in our parish.

The Vicariate of Sto. Nino obtained a total weighted mean rating of 3.21 which is interpreted as agree. Among the eight questions allotted to determine the extent of implementation of diocesan catechetical program in terms of goals and objectives, question number 4 which says: our parish has an adequate formation program for our catechists, got the highest weighted mean rating of 3.48. The lowest weighted mean rating of 2.6 came from question number 9 which says: each family especially parents are involved in catechetical activities in our parish.

A total weighted mean rating of 3.06 which is interpreted as agree was assumed by the Vicariate of St. Francis. Again, among the eight questions allotted to determine the extent of implementation of diocesan catechetical program in terms of goals and objectives, question number 4 which says: our parish has an adequate formation program for our catechists, got the highest weighted mean rating of 3.35. The lowest weighted mean rating of 2.23 came from question number 9 which says: each family especially parents are involved in catechetical activities in our parish.

Meanwhile, the Vicariate of Our Lady of Assumption has a total weighted mean rating of 2.99 which is interpreted as agree, It is question number 4, among eight questions allotted to measure the extent of implementation of the diocesan catechetical program in terms of goals and objectives which became the highest weighted mean rating (3.36) of the vicariate. On the contrary, just like the rest of the three other vicariates, question number 9 with a weighted mean rating of 2.23 and interpreted as moderately disagree is the lowest in this vicariate.

Incidentally, all the four vicariates have the same question number 4 which says: our parish has an adequate formation program for our catechists, as their highest weighted mean ratings and question number 9 which says: each family especially parents are involved in catechetical activities in our parish, as their lowest weighted mean ratings. It reflects the fact that the diocese in general has been providing its five Districts together with their vicariates a unified formation program for their catechists. In fact, the Religious Education Department of DLSU-D for more than a decade now has been working closely with the catechetical director of the Diocese of Imus in providing a sound catechetical formation program to the catechists of the diocese. Moreover, the lowest mean ratings of the four vicariates has loudly conveyed a message that the diocese must do more in educating its parishioners that the catechetical mandate of the Church is also their responsibility. The Apostolic Exhortation of Blessed John Paul II clearly defines this when he says that all members of the Church must feel responsible and must wish to be responsible for catechists (CT, #16).

Table 6. Extent of Implementation in Terms of Human Resources

HUMAN RESOURCES (Survey Form Item Number)	District I				District III			
	Vicariate of Our Lady of the Pilar		Vicariate of Sto. Nino		Vicariate of St. Francis		Vicariate of Our Lady of Assumption	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
Question # 10	3.45	Agree	3.62	Strongly agree	3.58	Strongly agree	3.61	Strongly agree
Question # 11	2.79	Agree	2.81	Agree	2.93	Agree	2.64	Agree
Question # 12	3.05	Agree	3.58	Strongly agree	3.23	Agree	3.46	Agree
Question # 13	2.88	Agree	3.21	Agree	3.14	Agree	2.74	Agree
Question # 14	3.18	Agree	3.56	Strongly agree	3.3	Agree	3.43	Agree
Question # 15	3.17	Agree	3.22	Agree	3.2	Agree	3.11	Agree
Question # 16	2.24	Moderately disagree	2.62	Agree	2.69	Agree	2.36	Agree
Total	**2.96**	**Agree**	**3.23**	**Agree**	**3.15**	**Agree**	**3.05**	**agree**

Table 6 shows that the four vicariates were able to implement the diocesan catechetical program in terms of human resources because all their total weighted mean rating fall under the category *of agree*. Just like the aspect of goals and objectives wherein all the four vicariates have a uniform highest weighted mean ratings when it comes to question number 4 and lowest weighted mean ratings in question number 9, the researcher found out that the four vicariates have the same question number as its highest and lowest weighted mean ratings. All the four vicariates have question number 10 where they got their highest weighted mean ratings, question number 10 says: our parish priest spearheads teaching catechism especially through his homily. Except for the Vicariate of Our Lady of the Pillar, the rest of the vicariates in this study got weighted mean ratings of above 3.50 which is interpreted as strongly agree. It is inspiring to know that all the parish priests are making use of their homily as venues to evangelize/catechize. This consistent passion of parish priests to catechize through homilies is parallel to what the General Directory for Catechesis highlighted when it says that "the parish is also the usual place in which the faith is born and in which it grows. It constitutes, therefore, a very adequate community space for the realization of the ministry of the word at once as teaching, education and life experience" (GDC, #258).

Moreover, question number 16 which says: our parish sends some catechists to other parishes whenever they are needed, happened to be the lowest weighted mean ratings for all the four vicariates, The Vicariate of Our Lady of the Pillar even has a weighted mean rating of 2.24 which is interpreted as moderately disagree. Though these words were explicitly contained in the DPP-E Primer, parishes in District I and District II are not yet ready to send their catechists in other parishes to help. They do not have yet the luxury of lending their catechists in other parishes because most of them do not even have enough number of catechists to cater to the catechetical needs of their own parish. For instance, the St. Martin De Porres Parish in Bacoor Cavite has only three catechists at the moment.

Table 7. Extent of Implementation in Terms of Physical Resources

PHYSICAL RESOURCES (Survey Form Item Number)	District I				District III			
	Vicariate of Our Lady of the Pilar		Vicariate of Sto. Nino		Vicariate of St. Francis		Vicariate of Our Lady Of Assumption	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
Question # 1	2.31	Moderately disagree	2.97	Agree	2.95	Agree	2.52	Agree
Question # 6	3.37	Agree	3.58	Strongly agree	3.18	Agree	3.72	Strongly agree
Question # 7	3.35	Agree	3.53	Strongly agree	3.29	Agree	3.61	Strongly agree
Question # 22	2.62	Agree	2.92	Agree	2.88	Agree	3.34	Agree
Question # 15	3.17	Agree	3.22	Agree	3.2	Agree	3.11	Agree
Question # 23	2.83	Agree	2.99	Agree	3.15	Agree	3.03	Agree
Total	**2.89**	**Agree**	**3.2**	**Agree**	**3.09**	**Agree**	**3.24**	**Agree**

As shown in Table 7, the four vicariates were able to implement the diocesan catechetical program in terms of physical resources. The Vicariate of Our Lady of the Pillar obtained a total weighted mean rating of 2.89 while the Vicariate of Sto. Nino has a total weighted mean rating of 3.20. The two vicariates of District III which are Vicariate of St. Francis and Vicariate of Our Lady of Assumption garnered total weighted mean ratings of 3.09 and 3.25 respectively. The total weighted mean ratings are interpreted as agree/implemented.

Question number 6, which says: our catechists make good use of the syllabus, module or lesson plan given by the diocese in teaching catechism, became the highest for vicariates Our Lady of the Pillar, Sto, Nino and Our Lady of Assumption with weighted mean ratings of 3.37, 3.58 and 3.72 respectively. The Vicariate of St. Francis had question number 7 which had the highest weighted mean rating of 3.29 which is interpreted as agree.

Question number 7 says: our parish-based catechists properly use the syllabus, module, or lesson plan in teaching catechism to those who will receive the sacraments. One will easily see that both questions refer to the conscious efforts of the catechists to use properly the syllabus, modules or lesson plans given to them. This is one thing that inspired the person -in-charge to provide and distribute catechetical materials to the catechists.

Meanwhile, question number 1 which says: our parish catechetical office responds well to the needs of our catechists, was the number where Vicariate of Our Lady if the Pillar and Vicariate of Our Lady of Assumption got their lowest weighted mean ratings of 2.31 and 2.52 respectively. In fact, a weighted mean rating of 2.31 is interpreted as moderately disagree while 2.52 was only a little over that interpretation. Interestingly, among the many ministries and apostles that the DPP-E is pushing through, it is only in the ministry of the catechists where it categorically requires a catechetical office in every parish; a definite room and person in-charge (DPPE, 2004). Furthermore, the Congregation for the Clergy added that "Catechesis is so basic to the life of every particular Church that no diocese can be without its own catechetical office" (GDC, #267). The researcher would like to put on record that there are still some parishes in District I and III that do not have their catechetical office, Moreover, among the 24 parishes in District I and III that the researcher had visited during data gathering, the Holy Cross Parish in Tanza Proper had the best parish catechetical office which was spacious and well ventilated, In fact they even have a mini kitchen at the second floor of their catechetical office where they do the cooking every time they have formation meetings of the catechists.

For Vicariates of Sto. Nino and St. Francis, it was question number 22 which got their lowest weighted mean ratings of 2.92 and 2.88 respectively. Question number 22 says: our catechists are provided with materials for teaching like pentel pen, Manila paper, ect….. Although these weighted mean ratings (2.92 and 2.88) were both interpreted as agree/implemented, however, the fact that this question became the lowest weighted mean ratings of two vicariates is a cause for alarm because these materials are among the most basic needs of catechists in performing their duties both in the school and in the parish.

Table 8. Extent of Implementation in Terms of Financial Resources

FINANCIAL RESOURCES (Survey Form Item Number)	District I				District III			
	Vicariate of Our Lady of the Pilar		Vicariate of Sto. Nino		Vicariate of St. Francis		Vicariate of Our Lady of Assumption	
	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
Question # 18	3.33	Agree	3.52	Strongly agree	3.24	Agree	3.44	Agree
Question # 19	2.82	Agree	3.12	Agree	3.13	Agree	3.16	Agree
Question # 20	3.03	Agree	3.08	Agree	2.21	Agree	3.18	Agree
Question # 21	2.57	Agree	2.42	Moderately disagree	2.79	Agree	2.92	Agree
Question # 24	2.62	Agree	2.66	Agree	2.92	Agree	2.85	Agree
Total	**2.87**	**Agree**	**2.96**	**Agree**	**3.06**	**Agree**	**3.11**	**Agree**

Table 8 shows that in general, the four vicariates were able to implement the diocesan catechetical program in terms of financial resources. The Vicariate of Our Lady of the Pillar obtained a total weighted mean rating of 2.87 while the Vicariate of Sto. Nino obtained a total weighted mean rating of 2.96. The Vicariate of St. Francis earned a total weighted mean rating of 3.06 and the Vicariate of Our Lady of Assumption which happened to get the highest total weighted mean rating among the rest, obtained a total weighted mean rating of 3.11. All of these weighted mean ratings were interpreted as agree/implemented.
Once more, all the four vicariates obtained their highest weighted mean ratings on the same question number 18 which says: funding has never been a hindrance for catechists to perform their duty both in the parish and in school. The Vicariate of Sto. Nino even captured a weighted mean rating of 3.52 which is interpreted as strongly agree. Moreover, this does not mean that the four vicariates were able to practically provide all the needs of the catechists financially. It rather speaks more of the dedication of the catechists in doing their tasks in spite of the

lack of financial support. In most of the researcher's casual conversation with the catechists especially with the coordinators, while he was doing this research, he found out that there were times that even their fare expenses in going to the parish or public school where they teach, were coming form their own pockets. This interpretation of the researcher on the true nature of question number 18 which says: funding has never been a hindrance for catechists to perform their duty both in the parish and in school, as far as the catechists are concerned became consistent with the rest of the weighted mean ratings obtained from the rest of the questions in financial resources. In fact, the Vicariate of Our Lady of Assumption, which ironically captured the highest total weighted mean rating, showed that its lowest mean rating came from question number 24 which *says:* the catechists in our parish are provided with allowance.   Likewise, the Vicariate of St. Francis obtained its lowest weighted mean rating from question number 20 which says: our parish has adequate funding for transportation expenses of our catechists. The Vicariates of Our Lady of the Pillar and Sto. Nino got their lowest mean rating from question number 21 which *says:* each community in the parish is giving their financial share for the catechetical programs in our parish.

It was unfortunate that the four vicariates cannot secure adequate support financially from their community members while St. John Paul II identifies the family as the Church in miniature and as such it is a living image and historical representation of the mystery of the Church. Besides, the researcher had repeatedly emphasized that according to *Catechesi Trandendae,* the catechetical mandate of the Church is the responsibility of all the members of the community and not only of the catechists and their pastors (CT, #16).

The researcher, having conducted to earlier researches with Vilog (2008 and 2010) on the extent of implementation of the diocesan catechetical program in the Vicariate of Immaculate Conception, sees a particular pattern in the data in terms of the financial resources of each vicariate in the diocese. Clearly, some parishes are more financially stable than others. However, when all these parishes are group together according to vicariate, the prevailing result is that funding is very much inadequate to satisfactorily finance the different programs of the vicariate in the catechetical ministry. While there is much to celebrate and thankful about knowing that the two Districts (I and III) have satisfactorily implemented the diocesan catechetical thrusts, the financial status of the four vicariates is alarming. In fact, among all aspects in which this study try evaluate, the financial resources obtained the lowest mean rating.

CONCLUSIONS AND IMPLICATIONS

From the aforementioned findings and discussions, the researcher was led to the following conclusions and its implications on the diocesan catechetical program:

1. In terms of age, majority of the catechists of the four vicariates: Our Lady of the Pillar, Sto. Nino, St. Francis and Our Lady of Assumption are in their middle age with a frequency of 178 compromising 55.1% of the 323 respondents. There were seven respondents who did not indicate their age. Since there are a good number of the respondents, 114 of them whose age ranges from 61 and above, then there is a great chance that majority of these 178 catechists who are middle aged are still more than willing to continue to volunteer as catechists in their respective parishes.

2. In terms of gender, the bulk of the manpower of the four vicariates were females. Out of 323 respondents, 304 or 94.1% are women and there are only 19 or 5.7% are men. Although from researcher's readings, he has not encountered any single Church document that promotes women in particular as priority to become catechists, however, it has been a trend in the Diocese of Imus that majority of those who compromise the catechetical manpower are women (cf Reblora and Vilog, 2008 and 2010).

3. In terms of length of service, 55.7% or 180 respondents indicated that they have served in their respective parishes from 1 to 10 years. There are 18 respondents who did not indicate their years of service in their respective parishes. Table 4 showed that 100 out of 323 respondents or 31% of the respondents have served their parish for 11-20 years. Hence, there is a greater probability that many from those who said that they have served their parish from 1 to 10 years will still be active as catechists for a couple of years from now.

4. On Goals and Objectives, the four vicariates in District I and III obtained a total weighted mean rating of 3.07 which is interpreted as agree/implemented. Thus, all the four vicariates were able to implement the goals and objectives of the diocesan catechetical program of the diocese in their respective area of jurisdiction as indicated by the interpretation of its weighted mean rating which is agree/implemented.

5. On Human Resources, the four vicariates obtained a total weighted mean score of 3.10, the numerical value of which has an equivalent interpretation of agree/implemented. Thus, all the four vicariates were able to implement the diocesan catechetical program of the diocese in their respective area of jurisdiction in terms of human resources. All of the four vicariates obtained their highest weighted mean score from question number 10 of the survey form questionnaire which says: our parish priests lead in teaching catechism through their homilies. In fact, three out four vicariates obtained an equivalent verbal interpretation of strongly agree. This reality points out that even if often times the number of catechists cannot proportionally match the population of those to be catechized and evangelized, priests/pastors of each parish are giving their remarkable share in furthering the tasks of catechetical ministry through their homilies.

6. On Physical Resources, the four vicariates got a total weighted mean score of 3.11, the numerical value of which has an equivalent interpretation of agree/implemented. Hence, all the four vicariates were able to implement the diocesan catechetical program of the diocese in their respective area of jurisdiction in terms of physical resources. However, the researcher would like to highlight that question number 1 which says: our parish catechetical office responds well to the needs of our catechists, was the number where Vicariate of Our Lady of the Pillar and Vicariate of Our Lady of Assumption obtained the lowest mean ratings of 2.31 and 2.52 respectively. Supposedly, catechetical office is one among the most basic physical resources of every parish.

7. On Financial Resources, the total weighted mean score of the four vicariates is 3.0, the numerical value of which has an equivalent verbal interpretation of agree/implemented. If one will compare all the total weighted mean scores per area of assessment (goals and objectives, resources: human, physical and financial), the financial aspect obtained the lowest weighted mean score. The statistically treated data is clearly saying that the four vicariates have not done enough yet to address adequately and properly the financial needs of the catechetical ministry. The catechetical program is moving forward usually through the unquestionable generosity of their own catechists.

8. The researcher then concludes that District I and District III of the Diocese of Imus have satisfactorily implemented the Diocesan Catechetical Program within their jurisdiction. As the Diocese of Imus embarked to golden jubilee celebration of its foundation, there are indeed concrete signs that call for this festive ambiance. One of them is the fact that only eight years after the promulgation of the Diocesan Pastoral Priorities for Evangelization, manifestations of serious efforts of the diocese to implement its acts and decrease are slowly getting clearer and more concrete.

RECOMMENDATIONS

Based on the results of the study, the researcher recommends the following:

Parochial Level:

1. Implement the recommendation of the DPP-E to establish a Catechetical Office in every parish. A defined task should be spelled out for the Parish Catechetical Coordinator and the person who will be in-charge of the catechetical office.

2. A budget has to be allotted for catechists' allowance. Item number 24 of the questionnaire which is about the provision on catechists' allowance had the lowest weighted mean score on the financial resources.

3. An enhanced recruitment program must encourage male parishioners to join the workforce of catechetical ministry. Because the urgency to recruit more parishioners to become catechists is getting higher year after year due to the rapid population growth in the province of Cavite.

4. A well-defined and organized program of activities of the catechetical apostolate for public schools and parishes in order to arrive at a more definite recruitment of manpower should be designed.

5. A well-defined program to encourage parishioners and families to help financially in the catechetical financial needs must be created.

Diocesan Level:

1. A centralized program should be developed in the following areas:
   A. Fund raising: A definite budget be allotted to catechists for compensation, fringe benefits, allowances and training.

2. Training: To professionalize catechists, the diocese can coordinate with DLSU-D for the revival of the BSE major in Religious Education Program or with Divine Word School of Theology in Tagaytay which offers a two-year certificate program in theology. Establish a Catechetical Center in the diocese where parishes can send their newly recruited catechists for catechetical trainings.

Researcher's Level:

1. Since it was mentioned that different studies conducted on the extent of implementation of the diocesan catechetical program are now completed covering all the Districts, vicariates and parishes of the Diocese of Imus, all the data must be collated and come up with a comprehensive presentation.

2. A follow-up study of this kind must be done in the future to see clearly how the diocesan catechetical program has improved.

3. A study on the factors that motivate parishioners to actively participate in catechetical ministry can be conducted as well.

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APPENDICES

APPENDIX A. Location of the Study

DISTRICT I: Vicar General: Fr. George A. Morales
Vicariate of Sto. Niño: Vicar Forane: Fr. Conrado N. Amon

Parishes	Titular	Priests
Aniban	San Lorenzo Ruiz	Conrado N. Amon Palingping, Dionisio Vargas
San Nicholas/Bayanan	The Holy Trinity	Bermudez, Maximo B.
Molino	Sto. Niño de Molino	Morales, George A. Francis D. Frane
City Homes Subd.	Our Lady of the Sacred Heart	Pathiyakam, Ginu MSFS
Addas Subdivision	Nuestra Sra. Dela Paz Y Buenviaje	Sapin, Percival L.
Soldier's Hills	Our Lady of Fatima	Bugayong, Efren M.
Queen's Row	Our Lady Queen of Peace	Roxas, Antonio A. Andres, Doroteo S. Colmenar, emmanuel

Vicariate of Our Lady of the Pillar: Vicar Forane: Fr. Geoffrey E. Ebalobo

Parishes	Titular	Priests
Andrea	St. Martin de Porres	Santos, Orlando R.
Perpetual Village VII	Our Mother of Perpetual Help	Villanueva, Teodoro B.
Imus Cathedral	Our Lady of the Pillar	Valero, Allan C.; Gomez, Elorde T. Ilano, Ronel D.; Rañola, Adrian Nicolas
Anabu	Our Lady of Fatima	Santiago, Teodorico D.
Bucandala	Immaculate Heart of Mary	De Leon, Paul D.
Malagasang II	Mary Mother of God	Ebalobo, Geoffrey E.
Buhay na Tubig	St. James the Greater	Honrada, Lordencio D.

DISTRICT III: Vicar General: Fr. Inocencio B. Pobrete Jr.
Vicariate of Our Lady of Assumption: Vicar Forane: Fr. Alain P. Manalo

Parishes	Titular	Priests
Magallanes	Nuestra Sra. De Guia	Manalo, Alain P.
Maragondon	Our Lady of the Assumption	De Castro, Lino N.
Ternate	Sto. Niño de Ternate	De Castro, Benito D.
San Roque, Naic	San Isidro Labrador	Jimenez, Orlando A.
Bancaan, Naic	Sto. Niño de Bancaan	Tagulao, Monico E.
Naic Proper	Immaculate Conception	Mendoza, Virgilio S.

Vicariate of St. Francis: Vicar Forane: Fr. Ariel M. Lisama

Parishes	Titular	Priests
Trece Martires City	St. Jude Thaddeus	Gacelo, Bernardo I. Pangilinan, Maximo S.
Tanza Proper	Holy Cross	Lumandas, Calixto C. Borabo, Christian B.
Amaya, Tanza	Our Lady of the Holy Rosary	Dendiego, Eleomer G.
Julugan, Tanza	The Resurrection	Bagos, Leonardo R.
Gen. Trias Proper	St. Francis of Assisi	Poblete, Inocencio Jr., B. Conception, Miguel III R.
Pasong Camachile	The Annunciation	Sumague, Claro P. Francisco, Benjamin A.
Manggahan	St. Vincent Ferrer	Lisama, Ariel M.

APPENDIX B. Copy of the Survey Form Questionnaire

RESPONDENT'S BASIC PROFILE

NAME : _____

            Surname   First Name   Middle Name

CIVIL STATUS : _____ GENDER : _____
DATE OF BIRTH : _____
NAME OF HUSBAND / WIFE : _____
ADDRESS : _____
TEL. # C.P. # _____
PARISH: _____
YEARS OF SERVICE IN THE PARISH : _____

Parochial Catechetical Program's Assessment
(Based in the DPPE's Programs under the Ministry on Catechesis)

Please encircle the number of your choice that honestly indicate the extent of implementation of the Diocesan Catechetical Programs in your parish using the following scale:

        4 – Strongly Agree
        3 – Agree
        2 – Moderately Disagree
        1 – Disagree

1. Our parish catechetical office responds well to the needs of our catechists   4   3   2   1
2. Our parish actively recruits for more catechists to join the ministry   4   3   2   1
3. Our parish has a system of screening in choosing catechists   4   3   2   1
4. Our parish has an adequate formation program for our catechists   4   3   2   1
5. Our parish has regular or yearly evaluation of our catechists   4   3   2   1
6. Our catechists make good use of the syllabus, module or lesson plan 4   3   2   1 given by the diocese in teaching catechism classes
7. Our parish-based catechists properly use the syllabus, module, or lesson 4   3   2   1 plan in teaching catechism to those who will receive the sacraments
8. The syllabi, modules or lesson plans being used by our catechists are 4   3   2   1 basically contextualized within Cavite culture
9. Each family especially parents are involved in catechetical activities in our parish   4   3   2   1
10. Our parish priest spearheads teaching catechism especially through his 4   3   2   1 homily
11. The different parish organizations are also involved in catechetical activities in our parish   4   3   2   1
12. The catechists in our parish have good relationship with each other   4   3   2   1
13. The recruitment program of our parish to have more catechists effective   4   3   2   1 is
14. Relationship among our catechists is   okay   4   3   2   1
15. Our catechetical office is managed well by the people in-charge   4   3   2   1 of the catechists
16. Our parish sends some catechists to other parishes whenever they are 4   3   2   1 needed

17. Our parish has an effective means of getting funding for the catechetical activities and programs   4   3   2   1
18. Funding has never been a hindrance for catechists to perform 4   3   2   1 their duty both in the parish and in school
19. There is an adequate funding for the necessary formation program of our catechists   4   3   2   1

20. Our parish has adequate funding for transportation expenses of our   4   3   2   1
     catechists
21. Each community in the parish is giving their financial share for the   4   3   2   1
     catechetical programs in our parish
22. Our catechists are provided with materials for teaching like   4   3   2   1 pentel
     pen, Manila paper, ect….
23. There is enough budget for the uniform of the catechists in our parish   4   3   2   1
24. The catechists in our parish are provided with allowance   4   3   2   1
25. Our parish responds well to different catechetical programs which   4   3   2   1 must be
     implemented within two years

ACKNOWLEDGEMENT

AN EVALUATION OF THE IMPACT OF USING IPADS IN TEACHER EDUCATION

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Abstract: One hundred and fifteen teacher candidates completed an online survey for this evaluation study from 2013-2015. Teacher educators were also interviewed to shared their experiences and insights of using iPads in their courses. Teacher candidates and faculty in the study had an overall positive experience of using iPads and they were willing to share their feedback to improve the implementation of iPads in the School of Education. Findings from the study have been used to inform the School of Education to revise its policy and plans for further implementation of iPads in its teacher education programs.
Keywords: evaluation, iPads, teacher education

INTRODUCTION

Mobile technologies including iPads have become pervasive in the United States. iPads are being used in more and more PreK-12 classrooms (Murray & Olcese, 2011; Riley, 2013). There is also an increasing trend in using mobile devices such as iPads in teacher education programs. Implementation of iPads was primarily reported as being beneficial. At the same time challenges were also reported (Baran, 2014). In addition, there has been a lack of research studies on and evaluation methodologies as well as learning theories of mobile learning (Levene & Seabury, 2015).

In order to prepare teacher candidates to best utilize mobile technologies in their future teaching practice, the School of Education in a Midwestern private university in the United States acquired two carts of 40 iPad minis in the summer of 2013 for faculty to check out and use during class time. A faculty study group was formed to identify apps needed for different teacher education programs in the School of Education. All iPad minis were preloaded with apps recommended by the faculty study group. A training workshop for faculty was conducted to kick start the iPad initiative. An evaluation study was planned to measure the impact of using iPads by teacher candidates and faculty. By the end of the fall semesters of 2013, 2014, and 2015, teacher candidates were called to complete an online evaluation survey. Faculty members were interviewed on their experience and insights of using iPads in their classes, too. Findings from this evaluation study will contribute to the understanding of how iPads impact teacher candidates' preparation of using mobile technologies for teaching and learning.

LITERATURE REVIEW

Mobile Devices as a Useful Learning Tool in Teacher Education
Wu, Kao, and Lin (2012) stated that mobile learnings engage learners in educational activities and use mobile devices for access and communication through wireless technology. They reviewed research studies on mobile learning published between 2000-2010 in a meta-analysis and summarized two directions of research: evaluation of the effectiveness of mobile learning, and design of the mobile learning systems.

Geist (2011) conducted one of the early studies on using iPads in teacher education to examine the practicality and efficiency of the technology. Results of the study indicate that the use of iPads changed teacher education students' interaction with their class and the instructor, and added convenience of using iBooks and e-books,

Kearney & Maher (2013) studied pre-service elementary math teachers' use of iPads in professional learning activities, such as math-specific activities and more generic organizational, communication and reflective activities. They found participants used iPads to mediate and enhance their professional learning. Pre-service math teachers in the study were able to use iPads to increase their productivity and ability to capture evidence of their learning, too. In addition, participating pre-service teachers developed their knowledge of using technology to support their teaching of math from using iPads.

Mourlam and Montgomery (2015) reported a year-long 1:1 iPad initiative for elementary education teacher candidates where 22 teacher candidates were each given an iPad to use in their coursework and field experience

following the Diffusion of Innovations framework (Rogers, 2003). They found that teacher candidates' teaching philosophy impacted their use of iPads. Some candidates changed their instructional approach to technology while some did not. Their findings suggested that "learning how to effectively integrate technology in an intellectual way is part of a developmental process that takes time, much longer than one academic year" (p.114). Teacher candidates need continuous support of faculty facilitation and critical self-examination of their pedagogical approach and philosophical stance as an educator in order to achieve effective adoption of iPads in their teaching practices.

Bryne-Daviss and other researchers (2015) reported findings from a large-scale (n=443) survey study of UK-based medical students using iPads for studying and clinic experiences. They found students were positive about the impact of using iPads on their learning. Their findings confirmed previous studies that college students as "digital natives" vary in their perception and use of iPad as a new technology for learning, and many are not capable and motivated in terms of adopting new technology for learning.

Evaluation Studies Contribute to Research on Mobile Learning
Levene and Seabury (2015) called for evaluation of mobile learning to inform decisions for determining the effectiveness and continuation of mobile learning. They outlined three themes in evaluation research on mobile learning: 1) student achievement comparison, 2) usability, and 3) student attitudes/perceptions. They also recommended instructional designers to focus on using the themes in evaluation of mobile learning research to inform design.

In Jackson, Brummel, and Pollet's (2013) study of evaluating interactive tabletops in elementary math education, they collected both self-reported data and performance data of grades and benchmark scores to examine the effectiveness of using interactive tabletops (pads) for computer-supported collaborative learning of math. Their findings indicated that elementary math education students generally demonstrated increases in their math performance and the mobile technology of interactive laptops could be an effective instructional aide and promising tool for effectively learning math.

Haydon and colleagues (2012) compared math performance of students with emotional disturbance using iPads and worksheets and found students had noticeable increases in the number of correct answer to math problems per minute using iPads than using worksheets. They believed the immediate feedback provided by iPads contributed to student engagement and performance increases. Students and the teacher also responded positively to the use of iPads.

Hargis, Cavanaugh, Kamili and Soto's (2014) examined faculty perception of the early (first month) effectiveness of implementing an iPad initiative in United Arab Emirates (UAE) using the strengths, weakness, opportunities, and threats (SWOT) framework. They conducted a case study through interviewing four teachers, utilized an adapted Faculty Attitudes Towards Technology-Supported Learning Environment (FATTSLE) survey and collected feedbacks from iPad lead faculty to triangulate their findings. Faculty perceived strength appeared to outweigh perceived threats of implementing iPads.

This study aimed to evaluate the effectiveness of teacher candidates' use of iPads. Teacher candidates were asked to report on the benefits and challenges of using iPads in their courses. Teacher educators were also interviewed on their insights of using iPads in teacher education. The findings of this evaluation study have been used to improve the iPad initiative and modify how the School of Education implement and manage the iPad technology.

METHOD
Evaluation Research
Patton (2002) described evaluation research as a form of applied research when conducing "systematically and empirically through careful data collection and thoughtful analysis" (p.10). The purpose of evaluation research is to "inform action, enhance decision making, and apply knowledge to solve human and societal problems" (p.12). Some researchers tend to believe evaluation studies are usually conducted to inform practice within specific situations instead of contributing to knowledge and theory and illuminating social concerns by traditional research studies. However, Pinch (2009) call for researchers and practitioners to change their view of the distinctions between evaluation and research with less rigidity and great nuance and start seeing evaluation as "where the margins of research and practice have the potential to intersect with greatest ease" (p392).

> "[E]valuation often attempts to assess the *effectiveness* of a program or service. On a more specific level, evaluation can be used to support accreditation reviews, needs assessments, new projects, personnel reviews, conflict resolution, and professional compliance reports" (Powell, 2006, p.105).

Data collection options and strategies for evaluation studies depend on the answer to the questions of "(1) *Who* is the information for, and *who* will use the findings of the evaluation? (2) *What* kinds of information are needed? (3) *How* is the information to be used? For what purposes? (4) *When* is the information needed? (5) *What* resources are available to conduct the evaluation?" (Rutman, 1984, p34). The challenge of evaluation studies is to communicate the findings to policy-makers and use the information in decision making.

This evaluation study utilized a mix-method data collection and analysis method. Faculty members who checked out and used iPads in their classes were contacted at the end of the fall semester of 2013, 2014 and 2015. After obtaining faculty's permission, a short in-class presentation was conducted or an email message was sent to teacher candidates in that class to call for participation. During the short in-class presentation, iPads with the online survey were passed to students for them to complete the survey on site. The link to online survey was included in the email message if an email message was sent to teacher candidates. Faculty members were called to participate in a semi-structured interview in person or via email. All faculty interviews in fall 2013 were conducted in person. The interviews were recorded and transcribed. In the second round of the evaluation study in fall 2014 and 2015, interview questions were sent to faculty members through email. Their responses to the interview questions were also collected through email.

Participants
Fifty-six teacher candidates from fall 2013, 29 from fall 2014 and 30 from fall 2015 completed the online evaluation survey. Among the total of 115 participants, the majority were juniors and seniors (see Table 1). Participants were from different teacher education programs including early childhood education, elementary education, middle school mathematics education, middle school social studies education, English as a Second Language education, music education, Spanish education, and physical and health education. The 10 graduate student participants were all from fall 2013.

Table 1: Participants

Level	n	%
Sophomore	7	6
Junior	31	27
Senior	67	58
Graduate Student	10	9
Total	115	100

Evaluation Survey
The evaluation survey was created based on the review of literature and research studies. The survey was posted online and contained questions on teacher candidates' experience of using iPads in their courses and their insights of the impact of using iPads on their learning (see Appendix A). When collecting data, the researcher went to different teacher education classes for students to fill out the survey on iPads and also sent the link to teacher candidates for them to complete the survey online. Survey data were analyzed quantitatively and qualitatively.

Faculty Interview
Faculty who checked out iPads were asked to reflect on their experience and observation of using iPads in their classes and their suggestions for improvement (see Appendix B). Five faculty members participated in the fall semester of 2013, four in fall 2014 and three in fall 2015. The three faculty participants in fall 2015 were the same from fall 2013 and 2014. Faculty members were interviewed face-to-face in fall 2013 and via email in 2014 and 2015. Face-to-face interviews were recorded and transcribed.

Procedures
The call for participation was send out at the end of the fall semester of 2013, 2014 and 2015. Teacher candidates were either presented with an iPad with the link to the survey for them to complete in class or sent the link to the survey for them to complete online. Faculty interviews were conducted at the end of fall 2013 and 2014. Survey and interviews were analyzed right after data were collected. Findings based on the results of data were used to modify the policy and practice of managing and using iPads in the School of Education.

RESULTS
Results from Analysis of Survey Data
Teacher candidates reported using iPads in a variety of education courses from core courses to methods courses. Ten graduate students responded based on their experiences of using iPads in an instructional media and technology course. A one-way ANOVA was conducted to compare survey responses among the three different semesters of evaluation: fall 2013, fall 2014, and fall 2015. No significant difference was detected in any of the items, indicating teacher candidates from 2013 to 2015 held similar perspectives towards using iPads in their classes. Teacher candidates were also grouped based on their grade levels (groups of sophomore and juniors versus seniors and graduate students) in order to compare difference of their perspectives using independent sample t-tests. No significant differences were found between the groups. Therefore, their perspectives were reported collectively.

Overall teacher candidates reported a positive overall experience of using iPads (Mean=4.25 on a scare of 1-5 with 1 represents "Very Negative," 2 "Somewhat Negative," 3 "Neutral," 4 "Somewhat Positive", and 5 "Very Positive"). It was common for teacher candidates to have already used mobile devices like an iPad or smart phone before the semester when they used iPads in their classes. Participants rated their experiences based on a 5-poiont Likert scale: 1. Strong Disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly Agree. They rated their instructor's modeling of effective usage of iPads in class high (Mean=4.26). Participating teacher candidates agreed that the use of iPads helped them gain more knowledge and skills of multimedia (Mean=4.17) and the use of iPads engaged students of different learning styles (Mean=4.14). They reported that they would like more opportunities to use mobile devices like iPads in classes (Mean=4.13). They also agreed that iPads facilitated multiple learning activities (Mean=4.11) and made them more confident in using mobile devices for learning (Mean=4.08) (See Figure 1).

Figure 1: Highly rated responses in the evaluation survey

Two questions were worded negatively: The use of iPad distracted me from learning; The use of iPads added unnecessary complexity to accomplish learning activities. These two questions were reversely coded for analysis. The items in the evaluation survey received lowest rating from teacher candidates were: 1) The use of iPads helped me connect with the instructor (Mean=3.19); 2) The use of iPad added convenience in completing course assignment (Mean=3.23); 3) The use of iPads added unnecessary complexity to accomplish learning activities (Mean=3.23, reversed); and 4) The use of iPads helped me connect with classmates (Mean=3.25) (See Figure 2).

Figure 2: Low Rating Items in the Evaluation Survey

Teacher candidates also reported what they liked the most and the least when using iPads in classes. Their responses were analyzed based on the frequency of occurrences. They viewed the variety of apps for them to

complete different learning tasks as their favorite (85%). The other top-rated items of what they liked include: portability (83%), ease of access to the Internet (59%), ease of use (58%), and easy recording of images, audio and video (50%). On the other hand, what they liked the least about iPads included: It is too hard to type on the screen (55%); I cannot take it out of class (32%); It distracts me from learning in class (25%); It takes too long for the apps to load (22%); The screen is too small (21%) (See Figure 3).

Figure 3: What Teacher Candidates Liked the Most (positive numbers) and the Least (negative numbers)

Results from Analysis of Interview Data
Five faculty members in fall 2013, four in fall 2014 and three in fall 2015 participated in the interviews for their feedback on the impact of using iPads in their classes. The three faculty participants in fall 2015 were the same from both fall 2013 and fall 2014. One faculty (Professor A) checked out iPads regularly once or twice a week throughout the semesters.

In the first semester when iPads were implemented, all of the five faculty participants rated their experience of using iPads as good (n=3) or excellent (n=2). Faculty reported using a variety of features and apps, such as camera, Educreation, NearPod, Haiku Deck, EverNote, Popplet, Notability, KidDoodle, StarFall, StoryKit, Brotanica Books, Storia, and so on. One faculty member (Professor A) checked out iPads weekly and used them regularly for teacher candidates to create word webs, take notes and create presentations. All other faculty checked out iPads for a few times to arrange class activities. They mainly used iPads for teacher candidates to explore apps and activities that they may engage students in teaching. One of them used iPads as an option for teacher candidates to design stations for her elementary methods class and the other used iPads to engage teacher candidates in interactive presentation as an alternative to PowerPoint for her lectures.

From the first semester of fall 2013, faculty reported challenges such as limited time in class for using iPads, slow internet connection, slow loading and updating time for some apps. All participating faculty expressed their desire to go beyond exploration for future use of iPads in their classes, but also voiced concerns of the limited time in class to go beyond exploration:

> "…it would be nice if student were able to have access to the iPads to really do some lesson building or planning as a tool. When it is limited to the time in class, [anything] beyond exploration is difficult." (Professor B)
> "We still need time for exploring. But perhaps the next time around I will give the specific assignments in class, specific tasks to accomplish if we cannot check them out still." (Professor E)

In the second year of evaluating the impact of using iPads, faculty members responded to the interview questions through email. Three of them participated in 2013's evaluation. Their overall rated experience of using iPads ranged from "So so" (n=1), "Good" (n=2), to "Excellent" (n=1). Two faculty members reported to continue with exploration of iPads but more specifically focused on a certain topic, for example, exploration of reading support for struggling students as one activity in the reading methods class. Faculty also reported more specific learning activities beyond exploration, for example:

> "Created short video and audio recordings for plans, projects, and role-plays- such as Audacity, Garageband, and iMovie. Created scaffolding tools for concepts using different applications for various learning styles and strategies- such as Mindmap, Skitch, Drawing tools. Utilized note-taking applications and presentation applications weekly- such as Notability, Evernote, and Haiku Deck, Google Drive, etc." (Professor A)

Limited time for using iPads in class was also reported as a challenge by faculty in the second year of evaluation:

> "I learned I must be very intentional with plans, with time, and with ways to transport them to class--even when I have multiple materials to carry to class. I learned I need to provide explicit instruction in addition to exploration. I wish there was a way for students to complete assignments on them [outside of class]." (Professor E)

> "we had to use during class time, but students could not check out or continue use for learning. So everything we created was simple and needed to be done in a short time frame or developed over class time for several weeks- I had to scale back 1-2 assignments in complexity because of this." (Professor A)

In addition, faculty voiced the need for teacher candidates to have more access to iPads in order to practice creating learning activities and a supportive learning environment:

> "Many are still unfamiliar with management of tablet or pad as a teacher, even if they have device themselves. For example, even those with devices don't necessarily have familiarity with educational apps." (Professor A)

DISCUSSION AND IMPLEMENTATION FOR CHANGE

Findings from teacher candidates' responses to the evaluation survey and faculty interviews indicated teacher candidates and faculty had an overall positive experience of using iPads in different teacher education courses. They enjoyed the variety of apps available for completing different learning activities, great portability, ease of use, and easy recording of images, audio, and video by using iPads. The use of iPads helped them gain more knowledge and skills of multimedia and made them more confident in using mobile devices for learning. Teacher candidates rated their instructor's modeling of effective use of iPads high in their responses. On the other hand, faculty members were reflecting on their curriculum as they implemented iPads in their classes (Rosenthal & Eliason, 2015) and seeking ways to incorporate iPads for effective teaching and learning practices.

This evaluation study supports other research studies on teacher candidates' recognition of the benefits of using iPads (Baran, 2014; Geist, 2011; Oz, 2015). It confirms the need to grant teacher candidates' continuous access to iPads in order for them to be able to use iPads as an effective tool for teaching and learning. In addition, the findings provide evidence for the School of Education to move forward with its programmatic decisions on integrating iPads in teacher preparation programs. Geist (2011) found that mobile devices such as iPads could be integrated into classroom instruction easily. However, the attitudes and pedagogical ideas of the teachers need to change in order to accommodate and meet students' needs. Teacher educators need continuous training in order to adopt iPads as an effective tool in classrooms.

One of the disadvantages reported from Fall 2013 was the limited access to and time of using iPads during class. Based on the findings from this evaluation study, the School of Education started to allow teacher candidates to check out iPads for classes and field experiences in order to provide them with sufficient access and time to complete more complex learning activities beyond class time. However, very few teacher candidates checked out iPad outside of their class time.

Findings from this evaluation study also indicated the need for continuous training and sharing to help faculty effectively incorporate iPads in their classes to go beyond exploration. After the initial faculty workshop on using iPads, limited professional development was provided at faculty meetings such as faculty demonstrations and sharing of how to use iPads in their classes. More comprehensive professional development is needed (Herro, Kiger, & Owens, 2013) to ensure faculty to continue their modeling of effective use of iPads for teacher candidates, especially on how to use iPads to expand student-student connection and student-teacher connection for learning. The School of Education also used findings from this evaluation study to revise the list of preloading apps on all iPad minis for each academic year.

CONCLUSIONS

As a type of applied research instead of a basic or theoretical research, evaluation research is usually treated as a research method for finding out information as the evidence for changes in policy and practice. Findings from this study have been use to implement changes in the policy of managing iPads at the School of Education and practices, which fulfilled the purpose of evaluation studies.

During the three years of implementation of iPads in the School of Education, faculty who regularly used iPads in their classes made iPads an integrated part of their curriculum. Faculty who did not check out iPads or only checked out once or twice a semester remained as the majority in the School of Education. This contrast of the positive experience by teacher candidates as reported in the survey and teacher educators' reluctance of using iPads calls for further action to bridge the gap.

In addition, this evaluation study had a small sample size and localized procedures for limited generalization. The researcher would call for continuous efforts for more evaluation studies on the impact of using iPads in teacher education, including both teacher candidates' self-reported data and other empirical data such as observation of their use of the iPads and artifacts such as lesson plans and reflections. In addition, more evaluation studies at different scales beyond one teacher education institution are also needed in order to provide more evidences and information to assist policy makers to make, modify and implement changes of the effective ways of managing and implementing mobile devices in teacher education.

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APPENDIX A: Teacher Candidate Survey Questions

Questions 1-5 uses the Likert scale: 1. Strong Disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly Agree

1. I had used mobile devices like an iPad or smart phone before this semester.
2. My instructor modeled effective use of iPads in class.
3. I would like to have more opportunities to use mobile devices like iPads in classes.
4. I plan to use mobile devices like iPads in my future classroom.
5. The use of iPads:

- Made me more confident in using mobile devices for learning
- Enriched my learning experience
- Engaged me more in class
- Encouraged my active participation in class activities
- Distracted me from learning
- Increased my excitement to learn
- Facilitated multiple learning activities
- Added convenience in completing course assignments
- Added unnecessary complexity to accomplish learning activities
- Promoted discussion in class
- Helped me connect with classmates

- Helped me connect with the instructor
- Helped me better understand course materials
- Helped me develop a more positive attitude towards using mobile devices like iPads in my future classroom
- Helped me gain more knowledge and skills of multimedia
- Helped to engage students of different learning styles (e.g. visual, auditory, kinesthetic) in class

6. Which of the following do you like the most about iPads:
   - ☐ Ease of use
   - ☐ Portability
   - ☐ Pleasure of use
   - ☐ Easy access to Internet
   - ☐ Variety of apps for different asks
   - ☐ Display of audio and video materials
   - ☐ Easy recording of images, audio and video
   - ☐ Easy sharing of my work with others
   - ☐ Usefulness in completing learning tasks

7. Which of the following do you like the least about iPads:
   - ☐ The screen is too small.
   - ☐ It is too confusing to use it.
   - ☐ It takes too long for the apps to load.
   - ☐ Apps do not work properly.
   - ☐ It is too hard to type on the screen.
   - ☐ I cannot take it out of class.
   - ☐ It distracts me from learning in class.

Question 8-13 are open-ended questions:

8. Please describe your most favorite iPad activity in class:
9. Please describe your least favorite iPad activity in class:
10. In what way do you feel the use of iPads helped your learning this semester?
11. In what way do you feel the use of iPads did not help your learning at all?
12. What suggestions do you have for using iPads in class?
13. What other comments do you have regarding the iPad Lab?

APPENDIX B: Faculty Interview Questions

1. How often have you used iPads from the iPad lab this semester?
2. How would you rate your overall experience with using iPads in your class this semester? Please explain your answer.
3. What activities have you done with iPads in your class(es)?
4. What apps have you been using the most in your class(es)?
5. What activities do you find most effective with using iPads in your class(es)?
6. What are your students' reaction to the use of iPads as your have noticed?
7. What have you learned from using iPads this semester that you will carry on to next semester?
8. What changes are you planning to make in the ways that you would use iPads in your class(es) next semester?
9. What challenges and/or frustrations have you encountered when using iPad this semester?
10. What suggestions do you have for the university and department to manage the iPads and apps?

AN EXAMINATION OF EDUCATORS' ATTITUDES TOWARD INCLUSION

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Abstract : Educators responded to the Principals and Inclusion Survey, measuring the experiences, training, attitudes of educators toward inclusion, and beliefs about the most appropriate placement of students with disabilities. Results revealed that the educators held a positive view of the inclusion model. However, the educators did not believe that general education should be modified to meet the needs of all students. The educators indicated that they believed that most of their students with disabilities could be served appropriately from regular classroom instruction and the resource room. The more positive the educators' inclusive attitude was, the less restrictive the learning environment was seen as most appropriate for specific learning disabilities, EBD, speech/language impairment, and autism/pervasive development disorder. Significant correlations were found between their attitude toward inclusion and the number of special education training courses taken, formal field-based training, and number of years of full-time special education teaching experience.
Keywords: attitude, inclusion, special education, experience, training, Principals and Inclusion Survey

A multitude of educational research studies have been guided by the theory of planned behavior framework, which proposes that behavior stems from attitudes (Ajzen, 2011). In the context of inclusive programs, the theory would suggest that the successful implementation of inclusive practices would be dependent upon educators' inherent belief that inclusion is a worthwhile endeavor. For administrators, this means that their dispositions toward inclusion may affect their inclusive policies and resource allocation. In the case of general education teachers, their perceptions regarding their role and responsibilities for their students with disabilities may affect both the quality and quantity of their interactions with them. Research findings have long correlated teachers' beliefs with their classroom behaviors (Babad, Inbar & Rosenthal, 1982; Good & Brophy, 1972) and teachers' expectations with student achievement (Conn, Edwards & Rosenthal, 1968). This paper will examine current research findings of educators' attitude toward inclusion.

Teachers' Views on Inclusion

While a great deal of research over the past decade has concentrated on principals' attitudes toward inclusion, very few studies have been conducted on teachers' perspectives. Principals' perspectives are important to evaluate, however, the examination of teachers' perspectives is also critical. After all, it is the general education teacher who interacts with inclusive students on a daily basis. Their subconsciously held dispositions may inadvertently guide the number of and quality of instructional accommodations and interactions provided for their students, in addition to the expectations placed upon them.

Just before full inclusion was implemented in a large Southeastern U.S. school district, a study of teachers' dispositions toward inclusion found that while the majority of teachers were willing to make accommodations for their students with special needs, their overall belief in those students to master the general course curriculum was deficient (Santoli, Sachs, Romey & McClurg, 2008). In other words, the teachers in the study were willing to go through the required motions of inclusive practice, but had already set the bar low for their inclusive students' achievement. Their low expectations could have serious implications for the success of their inclusive students.

Several studies have indicated that the way teachers regard their individual students consistently falls within one of the following categories: attachment, concern, indifference, or rejection (Cook, Tankersley, Cook & Landrum, 2000; Good & Brophy, 1972). Attachment students are typically high-achievers, behave appropriately, and demand little of their teacher's time, whereas concern students tend to be low-achieving but are recipients of a great deal of attention by the teacher. While attachment students are preferential, teachers generally don't call on or interact with them more often; they are seen as conforming and are often held up as models to classmates. Conversely, teachers tend to initiate contact frequently and give praise to their concern students. Students regarded with indifference generally avoid teacher attention and receive the same in return and, in that same vein, rejection students are those for whom the teacher has given up hope of success. Students

in the rejection category could often "do nothing right" and are frequently publicly criticized. Research suggests that teachers may regard their inclusive students more often with concern and rejection rather than attachment. These findings corroborate the theory that a teacher's attitude toward a student will translate into intentional behaviors or, as in the case of the rejection and indifference regarded students, intentional non-behaviors.

Measuring beliefs. In the 90's, a scale was developed for measuring the attitudes and beliefs of educators about inclusion students (Stanovich & Jordan, 1998). Views at one end of the scale are described as pathognomonic (PATH), meaning that learning or behavior issues are perceived as occurring within the student and impenetrable. At the other end of the continuum are interventionist (INT) views, where learning issues are believed to be a result of the interaction between the student and their instructional environment. Results of one study (Jordan & Stanovich, 2001) indicated that teachers with INT views tended to engage their exceptional and at-risk (EX/AR) students more often in one-on-one exchanges than their typically achieving (TA) students; however, the TA students of the INT and MID (middle range of the attitude scale) teachers received significantly more instructional opportunities than students of teachers who believed that learning difficulties were beyond the teacher's scope (Jordan & Stanovich, 2001). A significant positive correlation was found between INT teachers and their students' self-concept scores: total scale score ($p < 0.01$), and anxiety ($p < 0.001$), popularity ($p < 0.001$), and happiness ($p < 0.05$) subscales.

Another study found that teacher dispositions regarding their roles and responsibilities for teaching their EX/AR students positively correlated with the number of academic interactions with those students (Jordan, Lindsay & Stanovich, 1997). Teachers with interventionist views of inclusion tended to have more academic (i.e., content-related) interactions at higher cognitive levels with their EX/AR students than teachers with PATH views.

Roles of Administrators

Teachers' classroom performance has been linked to their administrators' dispositions. A significant positive correlation ($p < 0.01$) was found between principals' views and teachers' effective instructional practices (Stanovich & Jordan, 1998). Conversely, a later study found that principals' expectations seemingly had no influence on teachers' instructional behavior in their classrooms (Kuyini & Desai, 2007). Further research must be performed in order to determine whether principals' views impact teachers' instructional practices. Regardless of these contrary findings, school leaders are responsible for developing their school's inclusive program and procedures, as well as the allocation of time and resources. Therefore, it is plausible to assume that their attitudes toward inclusion are vital to the success of inclusion practices and their overall school program (Ball & Green, 2014).

In a recent study, a significant negative correlation between the training and experience of school leaders and their attitudes toward inclusion ($p = 0.005$) was found (Ball & Green, 2014). The more training and experience that principals had, the more negative their attitudes tended to be toward inclusion. Researchers hypothesized that the reason for the negative correlation may lie within the quality of principals' experience and training, instead of the quantity.

In 2003, a significant positive correlation was found between principals' attitudes and inclusiveness ($p < 0.05$) (Praisner, 2003). The results suggest that principals who hold positive dispositions of inclusion are more inclined to place students with disabilities in more inclusive learning environments. Significant positive correlations were also found between principals' attitudes and their number of years of experience, number of special education classes/workshops attended, and in-service hours ($p < 0.05$). A later study found that principals who are more knowledgeable about inclusion tended to provide additional provisions for inclusion in their school (Kuyini & Desai, 2007).

Although at times contradictory, prior research has suggested the following correlations: between principals' attitudes and inclusive placements; between general education teachers' attitudes toward students with disabilities and their in-class behavior; and between teachers' attitudes and students' self-concept. Because educators' attitudes toward inclusion may influence their decisions or behavior, it is important to continue studying these relationships.

Current Study

As mandated by the Individuals with Disabilities Education Act (IDEA), students with disabilities must receive instruction in the least restrictive environment (LRE) to the fullest extent from which they can benefit, hence the emergence of the inclusion model (U.S. Department of Education, 2009). Research has indicated that the expectations and perspectives held by the teacher will inevitably affect student achievement, thus positive attitudes and perspectives must be held by general education teachers to ensure that special education students in the inclusion classroom are afforded the best opportunity for academic achievement. In addition, research has suggested that quality inclusion programs are largely dependent upon the principal's inclusive placement perceptions (Praisner, 2003). Therefore, educators' disposition toward inclusive practices and the factors that may contribute to those perceptions are necessary to examine.

The purpose of this study is to examine the currently held dispositions of educators toward inclusion. What are educators' dispositions toward inclusion of students in the general education setting? Do educators believe that all of their students can achieve success in the inclusion model? If the outcome of this study suggests that a negative view is held, it may provide a basis for administrators to consider supporting their staff with increased opportunities for professional development.

Does a relationship exist between educators' attitude toward inclusion and their views on the most appropriate placement of students with disabilities? And if so, does this relationship vary based on the category of disability? If the results indicate that negative views are held, perhaps school districts should consider more targeted training opportunities for educators regarding inclusion of students with these particular types of disabilities.

This study will also examine possible associations between educators' training and experience and their dispositions toward inclusion. Does a relationship exist between the quantity of formal special education related courses attended and educators' attitude toward inclusion? Does formal training that includes field based experience appear to influence educators' perspectives on inclusive practices? Is there a relationship between educators' full-time special education teaching experience and attitudes toward inclusion? If particular factors seem to positively correlate with inclusive attitudes, perhaps teacher preparation programs and school leaders could more adequately support educators by either encouraging or requiring these enriching experiences.

Method

Participants

The county where the study took place has been ranked one of the fastest growing and wealthiest counties in the nation (source redacted for anonymity). Out of the county's 181,840 residents in 2011, 85% were Caucasian, with Black, American Indian/Alaska Native, Asian, and other race populations of 2.6%, 0.3%, 6.2% and 3.8%, respectively (source redacted for anonymity). In 2010, the median household income was more than $85,300, and the median home value was $275,300. Nearly 43% of the county's residents had a bachelor's degree or higher and 90% had at least a high school education.

There were 52 educators that participated in this study: five administrators, 29 general education teachers, four special education teachers, two specials teachers (e.g., P.E., music, or art teachers), two speech language pathologists, and one gifted program teacher, with nine respondents opting out of identifying their current role. Of those participants, twenty-five were employed at elementary schools, two were at middle schools, and twenty-five were at high schools. Thirty-six of the respondents were female, nine were male, and seven opted out of identifying their gender.

Materials and Measures

The participating respondents completed Praisner's (2003) Principals and Inclusion Survey (PIS). The 32-question survey consists of four sections: demographics, training and experience, attitudes toward inclusion, and beliefs about most appropriate placement. The PIS may be found in Appendix A.

The first section of the PIS focuses on the demographic data of the school in which the respondent is employed. Data gathered in this section includes the gender and age of the respondent, overall student population, average class size, percentage of students with IEPs, and the percentage of those students attending regular education classes for at least 75% of their school day.

The questions in section two inquire about the respondents' training and experience. Respondents were asked to indicate their number of years of full-time regular education and special education teaching experience, current position held, years employed in that position, highest degree earned, approximate number of special education credits obtained in formal training, in-service hours targeting inclusive practices, the specific courses/workshops/courses attended, whether they are special education certified, whether their school has a specific plan in place related to crisis involving special needs students, personal experience with special needs individuals outside of the school setting, and whether the school has a mission statement for inclusion students. The final question in this section asked respondents to rate their experiences from negative to positive (or no experience) with special needs students across eleven disability categories.

The third section of the survey was designed to measure attitudes toward inclusion for students with severe/profound disabilities. The 10 items in this section provide statements concerning inclusion for students with severe/profound disabilities and asked the respondent to choose from five options on a Likert scale that indicates the degree to which they agree or disagree. Stainback (1986) determined the reliability coefficient for this section is 0.899.

The fourth section of the survey was designed to measure perceptions of the most appropriate placements for students across disability categories. In this part of the survey, respondents chose one out of six possible placements that they perceived as most appropriate for students with a particular type of disability. Placement options include special education services outside of the regular school, special classes for most or all of the school day, part-time special class, regular education class instruction and resource room, regular

education class instruction for most of the day, and full-time regular education class with support. This section of the survey has been modified to include all of the current disability categories as outlined in IDEA. Ball & Green (2014) determined the Cronbach's alpha for this section to be 0.863, with an overall reliability coefficient of 0.824.

Procedure

E-mails requesting survey participation were sent to the principals of each of the district's 20 elementary schools, nine middle schools, and six high schools. A link to the survey website and the password were included in the e-mails. Administrators were asked to complete the questionnaire and then to forward the participation e-mail to their teaching staff. Survey responses were requested to be completed within two weeks of receipt of the e-mail, which was the window for data collection.

A post was also placed on Facebook, a social networking site, directed at the teachers who currently worked in the district, which requested their participation in the survey. Interested respondents were sent the survey link and password via private message. Several people shared the original post on Facebook.

Results

Data Reporting/Analysis

There were 52 educators who participated in this study. Of those educators, five were administrators, twenty-nine were general education teachers, four were special education teachers, two were specials teachers, two were speech language pathologists, one was a gifted program teacher, and nine opted out of identifying their current role.

The first question posed was: *What are educators' dispositions toward inclusion of students in the general education setting?* In order to determine educators' attitude toward inclusion, responses from Section III of the PIS were analyzed using descriptive statistics. There were ten statements in this section where respondents chose their level of agreement on a one to five Likert-scale where the higher the score, the more positive the educator viewed inclusion. It should be noted that statements 2, 4, 6, 7, and 10 in this section of the PIS were reverse coded. The overall mean total for attitudes toward inclusion was 3.88 out of 5.0 with a standard deviation of 0.56. The statement with the highest mean attitude score (4.39 out of 5) was statement 4 - *An effective general educator can help a student with a disability to succeed.* The statement with the lowest mean attitude score (3.37 out of 5) was statement 7 - *General education should be modified to meet the needs of all students including students with disabilities.* Figure 1 below provides the mean attitude score for each inclusive statement. Figure 1 below provides the mean attitude score for each inclusive statement.

Note: The higher the mean attitude score, the more positive the attitude toward inclusion.
1 = Only teachers with extensive special education experience can be expected to deal with students with disabilities in a school setting.
2 = Classrooms with both students with disabilities and without disabilities enhance the learning experiences of students with disabilities.
3 = Students with severe/profound disabilities are too impaired to benefit from the activities of a regular school setting.
4 = An effective general educator can help a student with a disability to succeed.
5 = In general, students with disabilities should be placed in special classes/schools specifically designed for them.
6 = Students without disabilities can profit from contact with students with disabilities.
7 = General education should be modified to meet the needs of all students including students with disabilities.
8 = It is unfair to ask/expect general education teachers to accept students with disabilities into their classrooms.
9 = No discretionary financial resources should be allocated for the integration of students with disabilities.
10 = It should be policy and/or law that students with disabilities are integrated into general educational programs and activities.

Figure 1: Attitude toward Inclusion

The second question posed by this study was: *Do educators believe that all of their students can achieve success in the inclusion model?* Respondents were asked to choose the most appropriate placement (MAP) for ten different disabilities that ranged from 1 to 6, where 1 indicated the most restrictive learning environment with services provided outside of regular school and 6 indicated the least restrictive environment with full-time regular classroom placement with support. The mean value of the most appropriate placement of all respondents was 4.34 out of 6 with a standard deviation of 0.86. Table 1 summarizes these findings below. The physical disability category had the least restrictive most appropriate placement score (5.42 out of 6.0), whereas the emotional behavior disturbance category received the most restrictive placement score (3.16 out of 6.0). The most appropriate placement mean scores for each disability category are shown in Figure 2.

Table 1: Most Appropriate Placement (MAP) of Students with Disabilities

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
MAP Average	39	2.40	6.00	4.3405	.86298
Valid N (listwise)	39				

N = Number of Responses; **Std.** = Standard

Note: The higher the most appropriate placement score, the less restrictive the learning environment.
1 = Special education services outside regular school, 2 = Special class for most or all of the school day, 3 = Part-time special education class, 4 = Regular classroom instruction and resource room, 5 = Regular classroom instruction for most of the day, 6 = Full-time regular education with support.

Figure 2: Most Appropriate Placement by Disability Category

The third question posed by this study was: *Does a relationship exist between educators' attitude toward inclusion and their views on the most appropriate placement (MAP) of students with disabilities?* As one might expect, a Pearson Correlation found a statistically significant positive correlation between educators' attitude toward inclusion and their view of the least restrictive learning environment placement of students with disabilities ($p = .005$, $r = .439$). See Table 2 below for the detailed analysis.

Table 2: Relationship between Inclusive Attitude and View of Most Appropriate Placement

Descriptive Statistics

	Mean	Std. Deviation	N
Attitude	3.8795	.56188	41
MAP Average	4.3405	.86298	39

Correlations

		Attitude	MAP Average
Attitude	Pearson Correlation	1	.439**
	Sig. (2-tailed)		.005
	N	41	39
MAP Average	Pearson Correlation	.439**	1
	Sig. (2-tailed)	.005	
	N	39	39

**. Correlation is significant at the 0.01 level (2-tailed).; N = Number of responses.

The fourth question posed by this study was a follow up to the third question: *If so, does this relationship vary based on the category of disability?* Data analysis using a Pearson Correlation found statistically significant positive correlations between inclusive attitude and the most appropriate placement of students with disabilities in four disability categories: specific learning disability ($p = .017$, $r = .395$), emotional behavior disorder ($p = .030$, $r = .353$), speech and language impairment ($p = .024$, $r = .370$), and autism/pervasive development disorder ($p = .027$, $r = .369$). These findings are summarized in Tables 3, 4, 5, and 6 below.

Table 3: Relationship between Inclusive Attitude and Most Appropriate Placement (MAP) of Students with Specific Learning Disabilities (SpLrngDis)

Descriptive Statistics

	Mean	Std. Deviation	N
Attitude	3.8795	.56188	41
MAP SpLrngDis	4.5278	1.27584	36

Correlations

		Attitude	MAP SpLrngDis
Attitude	Pearson Correlation	1	.395*
	Sig. (2-tailed)		.017
	N	41	36
MAP SpLrngDis	Pearson Correlation	.395*	1
	Sig. (2-tailed)	.017	
	N	36	36

*. Correlation is significant at the 0.05 level (2-tailed).

Table 4: Relationship between Inclusive Attitude and Most Appropriate Placement of Students with Emotional Behavioral Disorder (MAP EBD)

Descriptive Statistics

	Mean	Std. Deviation	N
Attitude	3.8795	.56188	41
MAP EBD	3.1579	1.38576	38

Correlations

		Attitude	MAP EBD
Attitude	Pearson Correlation	1	.353*
	Sig. (2-tailed)		.030
	N	41	38
MAP EBD	Pearson Correlation	.353*	1
	Sig. (2-tailed)	.030	
	N	38	38

*. Correlation is significant at the 0.05 level (2-tailed).

Table 5: Relationship between Inclusive Attitude and Most Appropriate Placement of Students with Speech/Language Impairment (MAP SpLangImp)

Descriptive Statistics

	Mean	Std. Deviation	N
Attitude	3.8795	.56188	41
MAP SpLangImp	5.0270	1.09256	37

Correlations

		Attitude Toward Inclusion	MAP SpLangImp
Attitude Toward Inclusion	Pearson Correlation	1	.370*
	Sig. (2-tailed)		.024
	N	41	37
MAP SpLangImp	Pearson Correlation	.370*	1
	Sig. (2-tailed)	.024	
	N	37	37

*. Correlation is significant at the 0.05 level (2-tailed).: N = Number of responses.

Table 6: Relationship between Inclusive Attitude and Most Appropriate Placement of Students with Autism/Pervasive Development Disorder (MAP AutPDD)

Descriptive Statistics

	Mean	Std. Deviation	N
Attitude	3.8795	.56188	41
MAP AutPDD	3.9444	1.39272	36

Correlations

		Attitude	MAP AutPDD
Attitude	Pearson Correlation	1	.369*
	Sig. (2-tailed)		.027
	N	41	36
MAP AutPDD	Pearson Correlation	.369*	1
	Sig. (2-tailed)	.027	
	N	36	36

*. Correlation is significant at the 0.05 level (2-tailed).

The fifth question posed in this study was: *Does a relationship exist between the quantity of formal special education training courses attended and educators' attitude toward inclusion?* Using a Pearson Correlation, a statistically significant relationship was found between educators' number of specifically targeted special education training courses taken and their attitudes toward inclusion ($p = .027$, $r = .354$). The results are shown in Table 7 below.

Table 7: Relationship between Formal Training and Inclusive Attitude

Descriptive Statistics

	Mean	Std. Deviation	N
Formal Training	4.4048	2.50910	42
Attitude	3.8795	.56188	41

Correlations

		Formal Training	Attitude
Formal Training	Pearson Correlation	1	.354*
	Sig. (2-tailed)		.027
	N	42	39
Attitude	Pearson Correlation	.354*	1
	Sig. (2-tailed)	.027	
	N	39	41

*. Correlation is significant at the 0.05 level (2-tailed).

The sixth research question asked: *Does formal training that includes inclusive or special education field based experience appear to correlate with educators' perspectives on inclusive practices?* An analysis using a Spearman's Correlation found a statistically significant positive correlation between an educators' field placement experience and their attitude toward inclusion ($p = .015$, $r = .387$). Details of the results are shown below in Table 8.

Table 8: Relationship between Field Experience and Inclusive Attitude

			Field Placement	Attitude
Spearman's rho	**Field Placement**	Correlation Coefficient	1.000	.387*
		Sig. (2-tailed)	.	.015
		N	42	39
	Attitude	Correlation Coefficient	.387*	1.000
		Sig. (2-tailed)	.015	.
		N	39	41

*. Correlation is significant at the 0.05 level (2-tailed).; N = Number of responses.

The seventh and final question posed in this study was: *Is there a relationship between educators' full-time special education teaching experience and attitude toward inclusion?* A statistically significant positive correlation was found using a Spearman's Correlation between educators' number of years of full-time special education teaching experience and their attitude toward inclusion ($p = .008$, $r = .407$). See Table 9 below for the detailed analysis.

Table 9: Relationship between Special Education Teaching Experience (SpEd Exp) and Inclusive Attitude

			Years SpEd Exp	Attitude
Spearman's rho	Years SpEd Exp	Correlation Coefficient	1.000	.407**
		Sig. (2-tailed)	.	.008
		N	45	41
	Attitude	Correlation Coefficient	.407**	1.000
		Sig. (2-tailed)	.008	.
		N	41	41

**. Correlation is significant at the 0.01 level (2-tailed).; N = Number of responses.

Discussion

Implications/Findings

The results of this study revealed that the educators had a relatively positive view of the inclusion model with a mean attitude score of 3.88 out of 5.0, which is more positive than the attitudes found by a recent study where the average attitude score was 2.46 out of 5.0 (Ball & Green, 2014). On average, the educators agreed that an effective teacher could help any student with a disability be successful. However, they were not as convinced that general education should be modified to meet the needs of all students, including those with disabilities, which could mean that either the educators believe that general education does not need to be modified because it is currently sufficient for both disabled and non-disabled students, or one could interpret this to mean that the educators do not believe that it is appropriate to modify general education in order to cater to students with disabilities. While the overall attitude toward inclusion was high, there is still room for improving the general outlook on inclusion.

Results of this study also indicated that on average, the educators believe that most of their students with disabilities may be served well from the regular classroom instruction and resource room. While these results show that the educators are open to the notion of inclusion, it also suggests that they believe that most students with disabilities, on average, cannot be fully successful through exclusive full-time regular education. The reasoning for this may lie in how equipped or prepared educators feel to serve students with disabilities full-time or in that serving those students full-time would take the focus away from the general education students. The results also indicated that the educators believe that students with physical disabilities are better suited for full-time regular instruction for the most of the day compared to students with emotional behavior disorders, for whom part-time special education classes are viewed as most appropriate. These findings could be attributed to the educators feeling less prepared in accommodating students with emotional behavior disorders, where perhaps behavioral issues could be seen as more likely to disrupt instruction and affect the learning environment.

The results suggested that the more positive an educators' inclusive attitude is, the less restrictive the learning environment will be seen as most appropriate for students with specific learning disabilities, emotional behavior disorder, speech/language impairment, and autism/pervasive development disorder. One could reason that the positive correlation with these disability categories could perhaps be attributed to educators feeling more prepared to accommodate these students through their previous experiences and/or training. Educators may feel that further intensive training would be necessary in order to confidently and properly serve students with intellectual disabilities, physical disabilities, blindness/vision impairment, and deaf/hearing impairment in the general education classroom full-time. One recent study found that pre-service general education teachers' receptiveness toward teaching visually impaired students was unchanged after taking a single course on teaching students with disabilities across a broad range of disability categories, which may lead one to assume that offering more targeted, long-term training courses could more effectively enhance educators' receptiveness to inclusion (Ajuwon, Sarraj, Griffin-Shirley, Lechtenberger, & Li, 2015).

The results suggest that there is a relationship between the number of specifically targeted special education training courses that the educators have taken and their dispositions regarding inclusion. This finding is not surprising given that the greater number of courses an educator attends, the more knowledgeable and confident they may feel in accommodating students with disabilities.

A correlation was found between the educators' formal training that included field-based experience and their attitude toward inclusion, which is consistent with prior studies. When combined with guided reflection and a mentor who provides positive modeling, studies have found that pre-service field experiences in inclusive

classrooms may increase educators' sense of efficacy with their ability to work with students with disabilities (Atiles, Jones, & Kim, 2012; Swain, Nordness, & Leader-Janssen, 2012).

A relationship was found between educators' number of years of full-time special education teaching experience and attitude toward inclusion. This finding is not surprising since special education teachers interact daily with students with disabilities, may form emotional connections with those students, and are sure to learn from their experiences. In addition, some may even be provided with additional training and/or resources in order to properly support those students. This finding was in line with a prior study on self-efficacy and perceptions toward inclusion which suggested that special education teachers and teachers of inclusive classes tend to have more positive views than teachers of traditional classes (Minke & Bear, 1996).

Limitations

Several limitations of this study restrict its generalizability to other inclusive programs in other geographic locations. The data for this study was collected from only one school district in one state in the southeastern U.S. with a relatively limited number of questionnaire responses ($N = 52$). Survey responses from both teachers and administrators were analyzed together, therefore perspectives held by one group could have contaminated the resulting views of the other. In addition, there is the possibility that survey responses may be slightly skewed based on the possibility of respondents providing what is popularly viewed as politically correct responses.

Future Research and Implications

The results of this study suggested that educators with a more positive attitude toward inclusion tended to view less restrictive learning environments as most appropriate for students with specific learning disabilities, emotional behavior disorder, speech and language impairment, and autism/pervasive development disorder. These relationships may have been due to educators' prior knowledge or experience, but it is reasonable to believe that educators may have more positive attitudes toward students with intellectual disabilities, physical disabilities, blindness/vision impairment, and deaf/hearing impairment if they are provided with field experiences with students with those particular disabilities, in addition to disability specific training.

This study found an association between the numbers of years that an educator has worked full-time teaching special education classes and their view of inclusion. A relationship was also found between field placement in inclusive classes and attitude toward inclusion. These findings provide a reason to believe that attitudes toward inclusion would be more positive if educators were required to teach special education classes for some period of time, either through their university or school district prior to teaching inclusive classes.

Future studies that separately obtain the perspectives of general education teachers, special education teachers, and administrators would be useful in determining more specific contributing factors for each group. As new information is gathered through continued research efforts on attitudes toward inclusion, it is imperative that the training, mentoring, and field experiences for pre-service teachers and current educators are continuously reformed so that positivity toward teaching students with disabilities may have every opportunity to flourish. The attitudes and expectations held by administrators and teachers may inevitably manifest through their actions that either provide supportive academic opportunities for those students or serve as a hindrance to achieving their greatest academic potential.

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ASSESSING TEACHERS' PROFESSIONAL IDENTITY IN A POST-SECONDARY INSTITUTION IN SINGAPORE

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Abstract: This study reports an empirical study on the development and validation of a scale to assess post-secondary teachers' professional identity. A sample of 352 teachers from a post-secondary education institution in Singapore voluntarily participated in this study. The sample was randomly split into two sub-samples, Sample 1 ($N = 185$) and Sample 2 ($N = 167$). Exploratory factor analysis (EFA) was conducted in Sample 1 to determine the number of factors and select the items. Confirmatory factor analysis (CFA) was conducted in Sample 2 for cross-validation to confirm the factorial structure of the scale and examine the model-data fit. Both EFA and CFA results provided support for a three-factor scale structure. The three sub-scales were: teaching beliefs (5 items); professional socialisation (4 items); and career progression (3 items). Each sub-scale showed good internal consistency reliability and predictive validity. Potential uses of the scale in educational research and practice were discussed.
Keywords: professional identity; teacher development; factor analysis; validation, post-secondary education, scale development

1.   INTRODUCTION

In the past two decades, many post-secondary education institutions worldwide have been facing a rising level of expectations from various stakeholders to develop a skillful workforce that can meet the challenges of the fast-changing business environments driven by the advancements of science and technology in an increasingly globalised economy (Bakah, Voogt & Pieters, 2012; Whitchurch & Gordon, 2010; Viskovic, 2006). The imperative to keep pace with industry demands and to improve the academic quality of post-secondary education has also triggered an increased attention to examine the teaching quality and the professional capacity of post-secondary teachers in the pursuit of educational goals (Bakah et al., 2012; Beauchamp & Thomas, 2009; Clarke, Hyde & Drennan, 2013). In particular, many educational policy makers and scholars see the importance of investing in the professional development of post-secondary teachers to enhance their capacities to impart knowledge and skills to their students (Välimaa & Neuvonen-Rauhala, 2008; Viskovic, 2006; Whitchurch & Gordon, 2010). In addition, they also noted that it is equally important to cultivate a sense of identity among the post-secondary teachers towards their profession and organisation (Välimaa & Neuvonen-Rauhala, 2008; Viskovic, 2006). It is felt that the post-secondary teaching fraternity needs to meet new expectations in several areas, namely: the possession and use of specialist knowledge, a long period of training and socialisation into the attitudes and behaviours expected of the teaching profession, and the use of discretion and professional judgment where members of the teaching profession have discretion and make value judgements rather than just apply rules to a routine set of circumstances (Knight, Tait, & Yorke, 2006; Simmons & Thompson, 2007). Essentially, how post-secondary teachers perceive themselves as teaching professionals of the 21st century can have significant influence on their work motivation and attitudes (Day, Stobart, Kington, Sammons, & Last, 2003; Flores & Day, 2006; Hodkinson, 1997).

While teacher education research in primary and secondary education levels has reported that professional identity is a key driver which could affect how primary and secondary teachers teach, how they develop professionally and how they approach educational changes (Cardelle-Elawar, Irwin & Sanz de Acedo Lizarraga, 2007; Cheung, 2008; Day, 2002; Young & Erickson, 2011), comparatively, there is limited empirical evidence to understand post-secondary teachers' professional identity and how it might affect their motivation towards their work roles. One possible reason might be due to a lack of psychometrically sound measures of professional identity specific to the post-secondary education setting, given that most of the professional identity scales developed in educational settings are primarily used for assessing teachers' professional identity at the primary and secondary education levels (Cardelle-Elawar et al., 2007; Cheung, 2008; Izadinia, 2013). As such, there is therefore an

empirical need to develop a more relevant psychometric scale to assess post-secondary teachers' professional identity to advance research and practice.

The current study had two objectives. First, it aimed to identify the dimensions of professional identity among a sample of teachers in a post-secondary education institution in Singapore. Second, it aimed to develop and validate a professional identity scale for assessing the post-secondary teachers' professional identity. The scale could serve as a measuring tool to enable both educational researchers and teacher educators at the post-secondary education level to develop a better understanding of post-secondary teachers' professional identity and its implications for teacher professional development at the post-secondary education level.

2.   CONCEPTUALISING PROFESSIONAL IDENTITY OF TEACHING PROFESSIONALS

In recent years, although the call for professionalising the teaching profession at the post-secondary education level has triggered a renewed attention and interest among educational policy-makers, scholars and practitioners to rethink the professional identity of post-secondary teachers in the pursuit of educational excellence (Bakah et al., 2012; Krause, 2011; Trede, Macklin & Bridges, 2012; Whitchurch, 2008, 2010), there is no universally agreed conceptualisation or definition of professional identity of teachers across education levels in the existing literature to date. In fact, the construct of professional identity has been defined and conceptualised differently in different research contexts by different educational scholars (Beauchamp & Thomas, 2009; Beijaard et al., 2004; Trede et al., 2012).

For instance, Collin (2009) argued that professional identity can be broadly defined as one's sense of self that is connected to a particular vocation. On the other hand, Beauchamp and Thomas (2009) contended that professional identity comprises the notion of agency, or the active pursuit of professional development and learning in accordance with a teacher's goals. In this view, teacher professional identity pertains to not only how teachers see themselves as teaching professionals based on their interpretations of their continuing interactions with their social contexts, but also allow them to exercise agency to pursue their goals (Beijaard et al., 2004; Coldron & Smith, 1999; Hong, 2010). According to Britzman (1991), "Learning to teach is not a mere matter of applying decontextualized skills or of mirroring predetermined images; it is a time when one's past, present, and future are set in dynamic tension. Learning to teach - like teaching itself - is always the process of becoming: a time of formation and transformation, of scrutiny into what one is doing, and who one can become" (p. 8). Other scholars view teacher professional identity as a construct of professional self that evolves over career stages and can be shaped by institutions, reform, and political contexts (Schlager & Fusco, 2003; Stronach, Corbin, McNamara, Stark & Warne, 2002). In this view, how teachers define themselves can be viewed as an on-going process of interpretation and reinterpretation of their experiences in the teaching profession (Beijaard et al., 2004; Day, 2002).

Similarly, from a socio-cultural standpoint, scholars have noted that the construction of professional identity is both social and personal (Beijaard et al., 2004; Eteläpelto & Saarinen, 2006; Vähäsantanen, Hökkä, Eteläpelto, Rasku-Puttonen, & Littleton, 2008), often via a process that "emerges through a subject's personal intentions, goals and ideals, all of them being intertwined with the subject's learning through the communities of professional education and working-life experiences" (Eteläpelto & Saarinen, 2006, p. 158). Also opined by Coldron and Smith (1999), understand the concept of professional identity through one's self as a teacher and also by others is important as this could continually help the individual teacher to construct a sustainable professional identity.

From a socio-cultural perspective, a teacher's professional identity is an ongoing, dynamic state of '*being* and *becoming*' which involves constantly questioning oneself: "who am I as a teacher at this moment and who do I want to become as a teacher" (Coldron & Smith, 1999; Connelly & Clandinin, 1999; Goodson & Cole, 1994; Schepens, Aelterman & Vlerick, 2009). From this perspective, a teacher's professional identity is therefore not a stable entity, but rather a state of '*being* and *becoming*' often shaped by contextual factors such as the teachers' interactions with students and colleagues in their social contexts as well as their professional experiences and learning over time (Beijaard et al., 2004). As such, many scholars opined that a teacher's identity can be formed through interaction with others and with the environment (Beijaard et al., 2004; Korthagen 2004; Van Veen, Sleegers, & Van de Ven, 2005). This thus means that identity development for teachers involves an understanding of the self and a notion of that self within an outside context, such as a classroom or a school, necessitating an examination of the self in relation to others (Beauchamp & Thomas, 2009).

Despite slight variations in its conceptualisation, from an extensive review of existing literature, it was found that four core dimensions of professional identity could generally be identified across educational settings that may constitute teachers' professional identity. These four core dimensions are: teaching beliefs, professional competence, professional socialisation, and career progression.

2.1   Teaching Beliefs

Teachers' professional identity is believed to be shaped by many factors and scholars have identified teachers' beliefs towards teaching and learning as one of the crucial factors (de Vries, van de Grift, & Jansen, 2013, 2014; Minor, Onwuegbuzie, Witcher, & James, 2002). This is because, very often, teachers use their personal interpretative framework of beliefs and values to express how they see themselves as teachers (Minor et al., 2002; Pajares, 1992). As a result, teachers' perceptions of themselves as teachers are coloured by their personal educational beliefs. From the perspective of professional self, a teacher's beliefs and values in education can play a critical role in a teacher's identity formation in the sense that it is believed to strongly determine how teachers teach, how they develop professionally and how they approach educational changes (Beijaard et al., 2004; de Vries et al., 2013; Ibarra, 1999). According to Ibarra (1999), professional identity refers to "the constellation of attributes, beliefs, values, motives, and experiences in terms of which people define themselves in a professional role." (p. 764-765). Also pointed out by Akkerman and Meijer (2011), teachers' beliefs about teaching and learning tend to direct teachers' actions and their perception of themselves in their function as teachers. This also means that a teacher's identity is often based on the core beliefs that one has about teaching and being a teacher, and these beliefs are continuously formed and reformed through experience. As a result, the functional competencies of being a teacher are developed differently, often being shaped by the individual's evolving perspectives, beliefs and philosophies of teaching (Korthagen, 2004). As noted by Hargreaves (1998), teachers are passionate beings and teaching involves human nurturance, connectedness, warmth and love. Oftentimes, a teacher's professional philosophy is mediated by his or her personal belief system (Hargreaves, 1998), and therefore each teacher's individual beliefs about their role in caring for students form a crucial part of their identity (O'Connor, 2008). Thus, from this perspective, the concept of teacher identity has both reflective and active dimensions which encompass both the teacher's professional philosophy and actions (O'Connor, 2008). In other words, the uniqueness of every teacher's approach to teaching is often shaped by their personal beliefs and values about teaching, and in this sense, reflection on one's own perceptions, beliefs, experiences and practices is a core activity for all teachers (Walkington, 2005). In essence, a focus on self is central to teacher identity as it shapes what he or she will be as a teacher, what and how he or she will teach, and how he or she will respond to the changing context of teaching (Timoštšuk & Ugaste, 2010).

2.2   Professional Competence

In the educational settings, it is generally agreed that professionally competent teachers require a deep and full understanding of the subject area they teach as well as pedagogical knowledge to understand how students learn so as to better cater to their needs (Battey & Franke, 2008; Cheung, 2008; Enyedy, Goldberg & Welsh, 2006). Specifically, from the perspective of professional roles, Enyedy et al. (2006) state that teacher professional identity can be seen in terms of teachers' professional practices or actions (what they do) and professional roles (who they are). This notion is also supported by Andrzejewski (2009) who examined the relationships among teacher identity, knowledge, and teacher practices in a recent study which suggested that teachers' professional identity is a combination of what they know (curriculum expertise) and the pedagogy they use to put it into practice. In fact, many scholars (Beijaard, Verloop & Vermunt, 2000; Chai, Koh & Tsai, 2010; Cheung, 2008; Darling-Hammond, 2006) have contended that to develop into competent teaching professionals, teachers must do well and have knowledge in the following areas: subject matter and curriculum goals (educational goals and purposes for skills, content and subject matter), teaching (content plus content pedagogy, teaching diverse learners and assessment and classroom management) and students' development in a social context (learning, human development and language). In other words, both deep subject knowledge and pedagogical content knowledge (PCK) are needed, as well as the knowledge of new technologies applied to subject teaching (or termed Pedagogical Technical Content Knowledge, PTCK) in this digital age (Chai et al., 2010; Cheung, 2008; Koehler & Mishra, 2009; Mishra & Koehler, 2006). In particular, with the shift from the traditional teacher-centric conceptions of teaching towards more student-centric learning approaches in the 21st century classrooms, a teacher is expected to be more of a facilitator of learning and less of a transmitter of knowledge which focuses on the learners' processes of knowledge construction and utilisation (Beijaard et al., 2000; Darling-Hammond, 2006). Essentially, a teacher's professional identity is closely linked with the role of the teacher in the classroom as well as directly linked with the 'craft' of teaching, that is the teacher's competence in his or her professional knowledge and skills (Hagger & McIntyre, 2006). As Hamachek (1999) contends, "Consciously, we teach what we know; unconsciously, we teach who we are." (p. 209).

2.3   Professional Socialisation

According to several scholars (Browne-Ferrigno & Muth, 2004; Price, 2009), professional socialisation is an essential process of learning skills, attitudes and behaviours necessary to fulfill one's professional role. Often, teachers' professional socialisation is more than just acquiring the skills and knowledge necessary to perform a work

role, but it also includes an understanding of the values and norms that are fundamental to the essence of the teaching profession (Browne-Ferrigno & Muth, 2004; Flores & Day, 2006). In fact, many scholars have contended that teachers' participation in social interaction or affiliation, especially in the form of communities of practice or professional learning communities, is fundamental to the process of identity development (Beijaard et al., 2004; Lieberman, 2009; Stoll, Bolam, McMahon, Wallace, & Thomas, 2006; Wenger, 1998). Particularly, Olsen (2008) views teacher identity as both a product (a result of influences on the teacher) and a process (a form of ongoing interaction within teacher development). According to Olsen (2008), "I view identity as a label, really, for the collection of influences and effects from immediate contexts, prior constructs of self, social positioning, and meaning systems (each itself a fluid influence and all together an ever-changing construct) that become intertwined inside the flow of activity as a teacher simultaneously reacts to and negotiates given contexts and human relationships at given moments (p. 139)". Similarly, Ibarra (1999, 2002) refers to professional identity as one's sense of his or her professional role, and the message he or she conveys about one's self to others. Thus, the formation of professional identity is an ongoing process of integration of the personal and the professional sides of becoming and being a teacher (Beijaard et al., 2004). Essentially, teachers' professional identity can easily be influenced by personal, social and cognitive responses such that the co-construction of professional identity takes place within interpersonal communication (Flores & Day, 2006). As such, it is reasonable to assume that the professional identity of teachers depends on the perception and understanding of the wider professional community (Browne-Ferrigno & Muth, 2004; Eteläpelto & Saarinen, 2006; Van Huizen, Van Oers, & Wubbels, 2005) as construed by Wenger (1998) who views the professional identity of the teacher as the person's self-knowledge in teaching-related situations and relationships that manifest themselves in practical professional activities, feelings of belonging and learning experiences.

2.4   Career Progression

Career progression may be defined in terms of the level and type of positions which teachers move through in the teaching profession which can associate with an increase in salary or the level of responsibility, promotions or professional status (Seibert, Maria & Michael, 2001). From an organisational perspective, the continual support for teachers' development and growth in their teaching career may include more formalised ranks within the teaching profession, such as in the provision of career advancement and professional development opportunities to teachers as well as matching teachers' abilities with ranks and responsibilities within the organisation (Day & Gu, 2007). A clear career path or structure can provide the teachers with a clearer vision and systematic progression for higher quality performance to motivate them to move forward with their career objectives within the profession and organisation. According to Lunenburg and Ornstein (2011), teachers as professionals have to take responsibility for their own employment and development. Hence, in the teaching profession, a 'career ladder' which could provide a mechanism for improved professional image and status would likely empower teachers to make their own career decisions for career advancement and professional growth (Coldron & Smith, 1999; Hodkinson, 1997), thereby enabling teachers to forge greater identification with their profession and organisation (Bogler & Somech, 2004; Lee & Nie, 2014).

2.5   Development of a Professional Identity Scale for Post-Secondary Teachers

As post-secondary teachers play vital roles in providing the industries with skilled workers to support the economic growth, there is a need to enhance post-secondary teachers' professional identity and their teaching quality. Given that most empirical studies of teachers' professional identity are mainly qualitative in nature and the limited number of quantitative measures of teachers' professional identity tends to focus on the primary and secondary teachers, there appears to be a lack of a specific measure for assessing post-secondary teachers' professional identity. This thus signals an imperative need for the development of a new psychometrically sound measure for more specific assessment of post-secondary teachers' professional identity to inform practice. As such, the current study aimed to address the following objectives:

(1) To identify the dimensions of professional identity among a sample of post-secondary teachers; and
(2) To develop and validate a professional identity scale for assessing post-secondary teachers' professional identity.

3.   METHOD
3.1   Sample

A convenience sample of 352 full-time teachers from a post-secondary education institution in Singapore voluntarily participated in this study. 60.5% of the participants were male and 39.5% were female; 77.3% were Chinese, 6.0% were Malays, 10.8% were Indians and 5.9% were from other minority races; 84.4% of the participants had more than two years of teaching experience; 98.0% had at least a Bachelor degree; and the median age range of participants was between 30 and 40 years old, which constituted 54.3% of the total number of participants.

The total sample of participants ($N = 352$) was randomly split into two samples, Sample 1 ($N = 185$) and Sample 2 ($N = 167$), for performing exploratory and confirmatory factor analyses in the scale development and validation process. Demographic information for Samples
1 and 2 are as follows:

     Sample 1 (N = 185). 59.5% of the participants were male and 40.5% were female; 74.7% were Chinese, 7.0% were Malays, 13.5% were Indians and 4.8% were from other minority races; 87.0 % of the participants had more than two years of teaching experience; 98.4% had at least a Bachelor degree; and the median age range of participants was between 30 and 40 years old, which constituted 58.4% of the total number of participants.

     Sample 2 (N = 167). 61.7% of the participants were male and 38.3% were female; 80.2% were Chinese, 4.8% were Malays, 7.8% were Indians and 7.2% were from other minority races; 91.0% of the participants had more than two years of teaching experience; 97.6% had at least a Bachelor degree; and the median age range of participants was between 30 and 40 years old, which constituted 49.7% of the total number of participants.

3.2 Instrumentation and Measures

3.2.1 Item Pool of the Post-Secondary Teachers' Professional Identity (PST-PI) Scale

The item pool was mainly drawn from items selected from the existing measures of professional identity used in various educational settings (Adams, Hean, Sturgis & Clark, 2006; Chai, Koh & Tsai, 2010; Cheung, 2008; Dobrow & Higgins, 2005; Goh, 2011; Norton, Richardson, Hartley, Newstead & Mayes, 2005) as well as newly crafted items based on constructs identified in other empirical studies of professional identity of teachers in various institutions. As many items and factors as possible were included in this item pool, resulting in four identified factors comprising 40 items for further item/factor selection. The number of items comprising each factor are: 10 items for 'Teaching Beliefs', 7 items for 'Professional Socialisation', 15 items for 'Professional Competence' and 8 items for 'Career Progression'. The items identified for the initial four factors of the scale are presented in Appendix A. To ensure content validity, the 40 items were revised by five experienced fulltime post-secondary teachers (each with at least three years of teaching experience) for content, context and language clarity. A 7-point Likert rating scale where 1 represented 'strongly disagree' and 7 represented 'strongly agree' was used for all the items.

3.2.2 Outcome Variables

Based on an extensive review of existing literature, professional commitment and work engagement have been identified as two important outcomes of professional identity among teachers in different research contexts (Day, Elliot & Kington, 2005; Lee & Nie, 2014). To measure professional commitment, we adapted four items from Lee and Nie's (2014) Professional Commitment scale. A sample item was "I stay abreast of developments in my line of work." The Cronbach's alpha coefficient for Professional Commitment scale in the current study was .81. To measure work engagement, seven items from Schaufeli, Bakker and Salanova (2006) Work Engagement Scale were adapted. A sample item was "I am enthusiastic about my job." The Cronbach's alpha coefficient for Work Engagement scale in the current study was .93. The fit indices were: Chi-square, $X^2(43) = 129.367$, $p>.001$; TLI= .957, CFI= .966, RMSEA=.076.

3.3 Data Collection

Ethics approval was obtained from the researchers' affiliated institution prior to data collection. Informed consent was obtained from a post-secondary education institution in Singapore to allow its full-time teachers from eight different academic departments to participate in the study. An anonymous online questionnaire[1] was designed and used for data collection. The link of the online questionnaire was emailed to all the full-time teachers of the participating post-secondary institution together with a cover letter attached to the online questionnaire to explain the objectives of the research and assured anonymity and confidentiality of participation. The duration of the online questionnaire was 15 minutes. Informed consent was obtained from the participants prior to their participation in the online questionnaire and they were assured that they were allowed to withdraw at any time from the research if they wished to. Participants responded to the items on demographic and measures of professional identity, professional commitment and work engagement. Participants' responses were recorded via an online spreadsheet for further analysis.

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[1] Participants were not required to identify themselves in this study so as to encourage greater voluntary participation and genuine responses from them.

4.   ANALYSES AND RESULTS
4.1   Factorial Structure of the Post-Secondary Teachers' Professional Identity (PST-PI) Scale

Exploratory factor analyses (EFA) and confirmatory factor analyses (CFA) were conducted to evaluate the factorial structure of the PST-PI scale for Sample 1 and Sample 2, respectively. It is clearly using EFA and followed by the use of CFA because EFA can easily identify the items that have cross-loadings or misloadings in other factors, while CFA can help to further cross-validate the factorial structure as well as test the model-data fit (Gerbing & Hamilton, 1996; Worthington & Whittaker 2006).

4.1.1   EFA Using Sample 1 (N = 185)

EFA was conducted to select the items from the item pool and assess the factorial structure of the PST-PI scale. Factorability of the correlation matrices was assessed using Bartlett's (1950) test of sphericity and Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy (Kaiser & Rice, 1974). Results from the Bartlett's test of sphericity provided support for performing EFA: Chi-square, $X^2(780) = 4935.002$, $p>.001$. The KMO results for the PST-PI scale was .893, further indicating support for performing EFA. Given the moderately high correlations among the factors, an oblique (Promax) rotation was decided for performing the EFA because the use of oblique rotation rather than orthogonal rotation can reduce the loss of valuable information if the factors are correlated (Costello & Osborne, 2009).

To select and retain items in EFA, three recommendations by methodologists (Comrey, 1988; Floyd & Widaman, 1995; Worthington & Whittaker, 2006) were adhered to, that is to retain items that had (1) factor loadings more than .40, (2) no or the lowest crossloadings on other factors and (3) conceptual consistency with other items on the factor. To determine the number of factors to retain, we adhered to the following four recommended criteria (Noar, 2003; Worthington & Whittaker, 2006): (1) Kaiser's (1960) rule of retaining eigenvalues greater than 1 (K1), (2) Cattell's (1966) scree test, (3) Horn's (1965) parallel analysis using the SPSS macro developed by O'Conner (2000), and (4) conceptual interpretability. Through a series of EFA to select items and retain factors, it was found that the items of the factor 'Professional Competence' did not fit well with the other factors of the PST-PI scale. Finally, the three-factor structure with 12 items showed the best interpretability based on prior theory and it also fitted well with the suggestions by the K1 rule, scree test and parallel analysis for the number of factors to retain for further validation using CFA. The three factors were 'Teaching Beliefs', 'Professional Socialisation' and 'Career Progression' which accounted for 66.87 % of the total variance in PISE. The communalities obtained for this three-factor PST-PI scale ranged from .447 to .903.

Table 1 presents the EFA factor loadings of the 12 items of the three-factor PST-PI scale based on Sample 1 (N =185).

Insert Table 1 here.

4.1.2   CFA Using Sample 2 (N = 167)

Next, CFA was conducted to confirm the factorial structure of the PST-PI scale in a cross-validated sample, Sample 2. All the three factors were allowed to correlate freely and error terms were left uncorrelated. Table 1 presents the CFA factor loadings of the 12 items of the three-factor PST-PI scale. Model fit was assessed by a number of indices (i.e. Chi-square, X^2; degrees of freedom, df; Tucker–Lewis index, TLI; comparative fit index, CFI; root mean square error of approximation, RMSEA) as different indices reflect different aspects of model fit (Hair, Black, Babin, Anderson, & Tatham, 2006; Hu & Bentler, 1999). A first-order three-factor PST-PI scale structure was tested using CFA and our result indicated that the model-data fit was acceptable9). Alternatively, a first-order one-factor PST-PI scale structure was tested using CFA but our result showed that the model data fit was poor.

Table 2 presents the fit indices of the first-order one-factor and first-order three factor structure models using Sample 2.

Insert Table 2 here.

4.2   Mean, Standard Deviation, Internal Consistency Reliabilities and Interfactor Correlations Based on the Total Sample (*N* = 352)

Insert Table 3 here.

Sample 1 (*N* = 185) and Sample 2 (*N* = 167) were combined into a total sample (*N* = 352) to calculate the mean, standard deviation, internal consistency reliabilities and interfactor correlations. Each sub-scale of PST-PI was scored by calculating the mean of the items that composed each sub-scale. The internal consistency reliabilities (Cronbach's alpha coefficients) of the three factors based on the total sample ranged from .83 to .89, which were above the recommended level at .70 (Nunnally, 1978). The interfactor correlations among PST-PI sub-scales based on the total sample were positively significant, and ranged between .333 and .569 (*p* < .001). Table 3 presents the mean, standard deviation, Cronbach's alpha coefficients and the interfactor correlations within and between the three-factor PST-PI scale based on the total sample (*N*=352).

4.3   Predictive Validity

All the three PST-PI sub-scales were positively and significantly correlated at *p*<.001 with the outcome variables, professional commitment and work engagement. Table 4 presents the correlations of PST-PI sub-scales with the professional commitment and work engagement scales using the total sample (*N*=352).

Insert Table 4 here.

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5.   DISCUSSION AND IMPLICATIONS

This study developed and validated the three-factor PST-PI scale to measure the professional identity of post-secondary teachers. It could contribute to a better understanding of the post-secondary teachers' professional identity and development in a number of ways.

First, results from both EFA and CFA provided support for a stable three-factor PST-PI scale structure. Given that the three factors which made up the PST-PI scale were complementary rather than mutually exclusive, the multidimensional feature of the PST-PI scale would be beneficial for educational researchers and practitioners to examine how different dimensions of professional identity might contribute to building post-secondary teachers' professional identity, which in turn, could have impact on their work outcomes, such as their professional commitment and work engagement. This would enable more effective staff development programmes or interventions to be designed with a focus on developing or enhancing the specific dimensions of professional identity of post-secondary teachers.

Second, unlike most of the existing professional identity scales which did not test for predictive validity in their scale development and validation process, the current study tested the predictive validity of this newly developed scale with the theoretically relevant criterion variables, professional commitment and work engagement. Our results indicated that all the three sub-scales of PST-PI were positively correlated with professional commitment and work engagement. Hence, our results indicated that the PST-PI scale is a reliable measure with good predictive validity and could therefore serve as a sound psychometric measurement for measuring professional identity of post-secondary teachers.

Third, an interesting finding which is counterintuitive to previous research on professional identity of teachers is that although teachers' professional practices in terms of their professional competence was reported to constitute professional identity of teachers in a sample of Hong Kong teachers (Cheung, 2008), our results in the current study indicated that the 'professional competence' dimension of the professional identity scale did not fit well with the other dimensions of the current scale. Hence, our results suggest that professional competence might be a separate construct which does not constitute one of the dimensions of professional identity of post-secondary

teachers in the current study. Nevertheless, future research could further explore whether professional competence could possibly be a necessary construct to complement the building of professional identity among post-secondary teachers. Specifically, future research could test whether professional competence and professional identity moderate each other to have an interactive effect on the criterion variables of professional identity such as professional commitment and work engagement. This would allow a reframing of staff development programmes from an exclusive focus on '*doing*' the work of a post-secondary teacher toward a broader focus that also includes '*being*' a post-secondary teacher.

Fourth, given the limited research on the professional identity of post-secondary teachers at the current moment, this study could contribute empirical insights to inform educational policy-makers in formulating a more holistic professional development framework for post-secondary teachers.

6.   LIMITATIONS OF STUDY AND SUGGESTIONS FOR FUTURE RESEARCH

Despite its noteworthy significance, there are also limitations in this study which need to be acknowledged or future research could attempt to address.

First, this study only used a small sample size of teachers in one of the post-secondary education institutions in Singapore, which may not be representative of the population of post-secondary teachers in Singapore. As a result, the generalisability of the results of this study should be interpreted with caution. Larger and multiple samples of teachers across different post-secondary institutions in Singapore should be considered for further validation of the scale in future studies so as to increase the representativeness and generalisability of the findings.

Second, as we were not granted access to the identity and demographic data of all the full-time teachers of the participating post-secondary institution, a convenience sampling design was adopted for data collection in this study. As a result of the convenience sampling design and anonymous nature of the online questionnaire for data collection, we were unable to conduct an accurate check for non-response bias. Future studies may wish to address the issue of non-response bias by having a more robust sampling design and data collection method to increase the reliability and validity of data collected.

Third, cultural differences may play a part in the development of professional identity (e.g., Beijaard et al., 2004). Future studies could consider validating the PST-PI scale using cross-cultural samples for comparison so as to develop a better understanding of the professional identity of post-secondary teachers across various cultural settings.

Fourth, the research design of the current study was cross-sectional in nature and therefore did not consider multi-interval multi-time data collection. As the development of teachers' professional identity is an ongoing, evolving process, it is suggested that future research could consider repeated measures of an individual teacher's professional identity to determine the degree of its possible change and development over time in the teacher's teaching career.

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Table 1. *EFA factor loadings for Sample 1 (N = 185) and CFA factor loadings for Sample 2 (N = 167)*

Factor	Item	Sample 1 *(N* = 185) EFA Loading	Sample 2 *(N* = 167) CFA Loading
1. Teaching Beliefs (5 items)	A good teacher is one who provides an environment in which students feel safe to explore and learn.	.843	.784
	A good teacher is one who recognises the learning needs of his/her students.	.830	.865
	A good teacher should encourage active participation from his/her students.	.827	.819
	A good teacher is one who can motivate students to learn.	.689	.792
	A good teacher should have a genuine interest in their students' well-being.	.483	.776
2. Professional Socialisation (4 items)	I share new teaching ideas/knowledge with colleagues.	.885	.737
	I can identify positively with members of the teaching profession.	.830	.781
	I work collaboratively with my colleagues.	.752	.689
	Being a member of the teaching profession is important to me.	.651	.737
3. Career Progression (3 items)	There is a clear career track for teachers in my institution.	.976	.933
	I am clear about the steps to achieve career progression in this institution.	.954	.923
	I have a clear vision of how to become a teaching professional in my institution.	.790	.671

Note. *Only EFA and CFA factor loadings greater than .40 are presented.*

Table 2. *Fit indices of the two models of the PST-PI scale using Sample 2 (N = 167)*

Fit Index*	Model	
	First-order one-factor	First-order three-factor
X^2	515.072	94.553
df	54	50
p	.001	.001
X^2/df	9.538	1.891
TLI	.539	.954
CFI	.623	.966
RMSEA	.227	.073

*Recommended guidelines for model fit indices (Hair et al. 2006; Hu & Bentler 1999): X^2/df < 3; TLI >.90; CFI >.90; RMSEA<.08

Table 3. *Mean, Standard Deviation, Internal Consistency Reliabilities and Interfactor Correlations Based on the Total Sample (N = 352)*

| Factor/Sub-scale | *M* | *SD* | Internal Consistency Reliability (α) | Interfactor Correlations | | |
				1. Teaching Beliefs	2. Professional Socialisation	3. Career Progression
1. Teaching Beliefs	6.49	.63	.87	1		
2. Professional Socialisation	5.95	.80	.83	.569**	1	
3. Career Progression	5.14	1.33	.89	.333**	.483**	1

Note. ** denotes *p*<.001.

Table 4. *Correlations of the PST-PI sub-scales with Professional Commitment and Work Engagement (N=352)*

| PISE Sub-Scale | Bivariate Correlations with | |
	Professional Commitment	Work Engagement
1. Teaching Beliefs	.451**	.509**
2. Professional Socialisation	.568**	.609**
3. Career Progression	.445**	.477**

Note. ** denotes *p*<.001.

Appendix A. Items for the initial four factors of the PST-PI scale

Factor	Item
1. Teaching Beliefs (Adapted from Norton, Richardson, Hartley, Newstead & Mayes, 2005)	Q1. A good teacher is one who provides an environment in which students feel safe to explore and learn. Q2. A good teacher should encourage active participation from his/her students. Q3. Teaching is about providing an environment in which students are encouraged to take ownership of their learning. Q4. A good teacher is one who recognizes the learning needs of his/her students. Q5. A good teacher should have a genuine interest in their students' well-being. Q6. A good teacher is one who can motivate students to learn. Q7. A good teacher has to be a subject matter expert. Q8. A good education should prepare students for lifelong learning. Q9. A good education should prepare students for life. Q10. It is essential that teachers use technology to enable students to learn effectively.
2. Professional Socialisation (Adapted from Goh, 2011)	Q1. I can identify positively with members of the teaching profession. Q2. Being a member of the teaching profession is important to me. Q3. I share new teaching ideas/knowledge with colleagues. Q4. I work collaboratively with my colleagues. Q5. I participate in professional development/training courses/conferences within and outside my institution. Q6. It is important for me to learn from other professional educators within and outside my institution. Q7. Staying connected with the industry I previously worked in is important in supporting my professionalism as an educator.

3.	Career Progression*	Q1. I am proud to be a teacher.
		Q2. Pursuing a career in education is important to me.
		Q3. I am given job assignments which help me in my development as a teacher in my institution.
		Q4. I have a clear vision of how to become a teaching professional in my institution.
		Q5. There is a clear career track for teachers in my institution.
		Q6. I am clear about the steps to achieve career progression in this institution.
		Q7. My job has high professional status.
		Q8. My job as a teacher is well respected by the society at large.
4.	Professional Competence (Adapted from Chai, Koh & Tsai, 2010; Cheung, 2008)	Q1. I have sufficient knowledge about my teaching subject.
		Q2. I select appropriate teaching approaches to guide my students' learning.
		Q3. I use appropriate technologies (e.g., multimedia resources, games and simulation) to enhance my students' learning.
		Q4. I facilitate my students' learning through the use of technology.
		Q5. I am able to facilitate my students to collaborate with each other using technology.
		Q6. I am able to make active contributions to curriculum decisions.
		Q7. I am able to foster a conducive learning environment for my students.
		Q8. I am able to help my students apply what they have learnt to real life situations
		Q9. I am able to motivate my students in their learning.
		Q10. I am able to make active contributions to assessment decisions.
		Q11. I use assessment results to improve my students' learning.
		Q12. I support the diverse learning needs of my students.
		Q13. I build rapport with my students.
		Q14. I mentor my students.
		Q15. I provide career guidance to my students.

*denotes dimension which consists of newly created items.

DECISIONS REGARDING ORAL NEGATIVE FEEDBACK REVISITED

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Abstract: Negative feedback has important pedagogical implications. Teachers need to review scientific literature to find out some help for decision making the classroom. The aim of the present manuscript is to offer a review of key issues regarding error correction in the foreign language classroom for teacher trainees, foreign language teaching practitioners and researchers. It is a documental review based on iconic papers which have been considered cornerstone on the topic as well as some recently published research. Researchers have offered possible answers to those questions, but as not all teaching contexts and students are the same, error treatment choices also vary. The decision about when to correct is closely related to how to do it. Subjective variables (e.g., affective, cognitive) are expected to be considered when selecting specific NF. Lack of sound consistent empirical data shows the need for more research to clarify remaining issues on negative feedback.

Keywords: Corrective feedback, oral errors, classroom interaction, English teachers, teacher trainees.

INTRODUCTION

Researchers have tried for decades to answer important questions regarding error correction in the language classroom. Some of those questions are related to correcting students after erroneous target language productions. The ones about whether to provide learners just positive evidence or also to include negative feedback (NF) still concern foreign language teaching practitioners. Ellis (2009) claims that negative feedback is clearly a topic of importance in teacher education programs and there is growing evidence that it can play an important role in enhancing linguistic accuracy. The key problem teachers' educators still face is how to handle this complex issue.

Decades of research have been conducted to find helpful answers for teachers to make the appropriate decisions about providing NF, but much is yet to be done. Authors have conducted laboratory and classroom studies addressing the issue in different teaching and learning contexts such as foreign language (Balcarcel, 2006; Tsybina, Girilametto, Weitzman & Greenberg, 2006; Perdomo, 2008), second language (Oliver & Mackey, 2003); some research have included children (Oliver, 1995; Tysibina, *et al*., 2006), high school and higher education students (Perdomo, 2008). Those studies have examined negative feedback in different second and foreign language settings and methodologies ranging from documental reviews and observational studies to more complex designs.

The NF issue is so complex that it is constantly necessary to give teachers and teacher trainees more

information about it. The aim of the present manuscript is to offer a review of key issues regarding error correction in the foreign language classroom for teacher trainees, foreign language teaching practitioners and researchers who are interested on interactional feedback. The author presents, in the first place, an approach to the concept of oral negative feedback, followed by a brief exposition on the importance of negative feedback and a discussion on some questions presented some decades ago by Hendrickson (1978), but still being relevant in the language teaching context: what to correct, when and how students should be corrected as well as who should correct them, among other. The author expects the audience to find the present paper useful for rethinking about NF during oral interaction in the language classroom and to propose new research ideas aiming to solve real problems they face in their teaching practice.

APPROACHING THE CONCEPT OF NEGATIVE FEEDBACK

Students can receive both positive and negative feedback. On the one hand, positive evidence or positive feedback (PF) is useful for the teacher to affirm that a learner response to an activity is correct (Ellis, 2009). On the other hand, NF is considered to be any response towards errors and mistakes made by the students, that is, any indication to the learners that the use of the target language has been inaccurate (Lightbown & Spada, 1999). NF can be provided for written and oral discourse; however, for the present research the focus was on oral inaccurate students' oral productions. In this sense, in the present paper, NF would refer to teachers' reaction when students do not produce a target like utterance during an oral task.

In the literature, terms like 'corrective feedback' (Lightbown & Spada, 1999), 'negative evidence' (Dekeyser, 1993; Oliver, 1995; Long & Robinson, 1998), 'interactional feedback' (Mackey, Gass & McDonough, 2000), 'negative feedback' (Perdomo, 2008), 'error correction' and 'error treatment' have been used to refer to NF. For the purpose of the present paper, being clear that the focus is on oral interaction, those terms will be used interchangeably to refer to teachers' reaction after students' ill-formed utterances. It is relevant to mention that 'negative evidence' is used in the field of language acquisition, 'negative feedback' is used by cognitive psychology; and 'corrective feedback' is observed in the field of language teaching (Schachter, 1991). Nevertheles, in the literature they have been used, even interchangeably, referring to NF.

Key words related to negative feedback

There is a wide list of concepts regarding NF. It is important to know them to perform a more successful research on the issue and to be updated on the field. Perdomo (2014) states that some teachers and researcher might miss important information because they do not use the appropriate keywords when searching in journals and databases. Let's review some of those and their relationship to NF.

Uptake: It refers to the types of students' responses as immediately following the provided feedback (Lyster & Ranta, 1997). It is a student made reformulation after teacher's feedback (Dos Santos & Moraes, 2004). It has been found to be useful for assessing feedback effect, even when some authors might disagree. Uptake can be classified as (1) repair uptake, (2) needs repair uptake (modified and unmodified), and (3) acknowledgment (Asari, 2012).

Intake: It is detected input that goes beyond what is held in working memory for immediate recognition and

comprehension (Reinders, 2012). Definitions of intake come into three broad categories: as a product (Corder, 1967; Krashen, 1978; Faerch & Kasper, 1980; Sharwood, 1993; Carroll, 2001) as a process (Hatch, 1983; Boulouffe, 1987), and as a combination of both (Kumaravadivelu, 1994).

Repair: It is a corrective activity of troubles in conversation, during interactions (Yasui, 2010). Repair has a basic 3-steps structure: (1) production of the trouble-source, (2) the initiation of the repair, and (3) its completion (Kasper, 1985).

Saliency: Saliency concerns the noticeability of the feedback by students, but in NF literature it can be also associated to grammatical structures. It has been associated to feedback effectiveness by some authors who claim that more salient feedback types tend to be more efficient. Noticeability of NF has been found to be related to the grammatical target it addresses (Kartchava & Ammar, 2014).

Noticing: It takes place when the students realize that they are being provided some input from which they could learn. NF noticeability seems to depend on the grammatical target it addresses (Kartchava & Anmar, 2014). Proficiency has been reported as helpful for noticing less salient feedback (e.g., Perdomo, 2008).

Feedback recognition: it is a situation in which the learner is able to recognize the corrective nature of NF but failed to locate the source of error (Rassaei & Moinzadeh, 2014).

All the terms described above are important for a better understanding of oral NF in language teaching and learning and for enhancing scientific information gathering. However, they are not all the concepts and terms to include when doing research on the issue. Hence, teachers, teacher trainees and researchers should constantly increase their own list as long as they find more of those words, terms and concepts.

Taxonomies for negative feedback

Different researchers have devoted time to deeply research classroom interaction, specifically on aspects concerning NF. There is no consensus on NF classification, but all the taxonomies proposed by diverse authors are helpful for the study and understanding of NF. Several types of NF following different criteria have been found in the literature since Lyster and Ranta (1997) who after observing classroom interaction described six types of NF, namely: explicit correction, recast, clarification requests, metalinguistic feedback, elicitation, and repetition.

Later, authors talked about 'preemptive' and 'reactive' negative evidence. The former refers to grammar rules explanations and the latter to a NF that can be either explicit (i.e., overt error correction) or implicit (i.e., communication breakdowns and recast) (Long & Robinson, 1998).

Reactive NF, according to its saliency, can be either implicit or explicit. Gass (1999) went beyond that simple taxonomy and classified implicit and explicit negative feedback direct and indirect. In other words, she talks about implicit direct negative feedback, implicit indirect negative feedback, explicit direct negative feedback and explicit indirect negative feedback.

The knowledge of the previous explanation is useful to understand combinations like 'implicit negative

feedback', 'explicit negative feedback' and 'explicit direct negative feedback' which have been used by authors like Long and Robinson (1998), Gass (1999), Rodríguez and Perdomo (2002) and Perdomo (2008), among other.

Lyster (2002) classified feedback moves as explicit correction, recasts and prompts. Lyster and Mori (2006) posit that recasts and prompts are interactional feedback, as opposed to corrective feedback. Besides, according to who provides the feedback it can be other-repair (provided) (including explicit correction and recast) and self-repair (prompt) (metalinguistic feedback, elicitation, repetition and clarification request) (Loewen & Nabei, 2007).

As can be observed, during the last two decades terminology referring to NF has become broader. Teachers and researchers must take that into account to find useful information about this topic which has important pedagogical implications for language teaching practitioners and students.

IMPORTANCE OF NF IN THE LANGUAGE CLASSROOM

Language teachers and researchers cannot ignore that NF may play a role in assisting learners to attend to and incorporate those aspects of language not acquired through positive evidence alone (Oliver, 1995). NF constitutes an ideal 'dimension' of 'practice' in that all language teaching practitioners will need to make decisions about whether, how, and when to correct their students' errors and also because the decisions they make depend on their overall theory of teaching and learning (Ellis, 2009).

Negative evidence lets teachers know about students' progress and input needs, but it has not always been seen like that. The first language teaching methods saw errors as undesirable production and, as such, they should be avoided and corrected when produced. It was after language and language learning theories started to change that errors and mistakes were considered as a normal part of language acquisition and learning process and error treatment began to be different too.

Communicative Language Teaching advocates created a balance between what audiolinguists and cognitistvists had said and suggested that an error should be viewed as evidence of learners' linguistic development instead of 'a sin to be avoided and even punished'. They also recognized the need for fluency and this allows teachers to leave some errors uncorrected (Rezaei, Mozaffari & Hatef, 2011).

That change of mind about NF in the language learning process has led to changes in research interests going beyond the fact of correcting to the effects of correction on learning. That explains why, in the lasts decades, Second Language Acquisition theory (SLA) recognizes the importance of corrective feedback and there has been an increasing number of studies to examine the relationship between feedback and L2 learning (Rezaei *et al*., 2011). From a pedagogical perspective, NF is a crucial element in the language learning process because, as Shaechter (1998) states, learners' output is also input for themselves and their classmates; hence, lack of NF might cause that some hypotheses stay incorrect.

In this vein, some authors have concluded that when applied at a specific moment, corrective feedback could help to improve strategies of learning and it would give enough confidence to students when producing (Hernández, Gómez & Jiménez, 2010); however, most research is needed to clarify remaining doubts about what

type of NF might be more beneficial for students in different language teaching contexts.

WHAT TO CORRECT?

To answer this question it is important to clearly define errors. They are defined as a deviation from the norm of the target language (Ellis, 1 994); to this point authors might still agree. However, the controversy appears when we talk about the perception of errors as part of the language learning process (Perdomo, 2014).

Chaudron (1977) established the difference between 'error', 'mistake' and 'attempts'. He explained that 'error' is related to competence, 'mistake' is related to performance, and 'attempts' are differentiated from errors because they are failures produced when the students try to use a structure they do not know and take it from another language. A clear differentiation of the abovementioned terms is needed for teachers to decide whether they have to provide negative feedback. To help teachers with this task, Ellis (1997) proposed a two ways method to discriminate errors and mistakes: (1) by observing the consistency of the ill-formed utterance and (2) by providing direct feedback (which was hardly critiziced).

Errors have also been classified according to proposed taxonomies. For instance, Burt (1975) talked about 'global' (errors that hinder communication because they do not let the hearer to get the intended message) and 'local' errors (those affecting a part of the sentence and did not prevent the message to be understood).

What to correct goes beyond the differentiation of error, mistakes and attempt. It is also related to the focus of teaching (i.e., meaning vs. form; accuracy vs. communication) and to specific language aspects to be learned such as pronunciation and grammar, for instance. Those issues would have an influence on the decision about what, when and how to correct. Besides, what to correct is related to the amount and types of error students make in a single utterance. In this sense, methodologists generally advise teachers to focus attention on a few error types rather than try to address all the errors learners make (Ellis, 2009).

Furthermore, what to correct would partially depends on students' proficiency and the kind of task students are performing. Teachers should know about students' proficiency because, as stated by Gómez (2006), a problem occurs when teachers correct students' errors which are beyond their level. In that case, they might not realize that they are being corrected.

WHEN SHOULD STUDENTS BE CORRECTED?

Error correction is definitely needed at some point in the learning process to a lesser or a wider extent (Gómez, 2006). Tomczyk (2013) states that having already decided that an error should be the subject of treatment, a teacher is supposed to choose from three possible options when to deal with an erroneous item: immediate, delayed or postponed correction.

Tomczyk (2013) found that both immediate and delayed corrections were the two forms mostly used by teachers; however, at the present time there still controversy on the appropriateness of each of them. The type of NF might also be a feature to consider for deciding when to correct. Once again, it takes teachers to reflect on the focus of the class and the task. Tomczyk (2013) noticed that, in a class where the focus was on communication, immediate correction seemed to be more popular for pronunciation errors whereas delayed NF was preferred by

teachers for grammatical errors.

In sum, the choice about when to correct should be taken depending on both, the kind of NF and the teaching focus. In that sense, immediate implicit NF would be useful at any time of the conversation when communication is the goal, while immediate explicit NF would be advisable when the goal is grammatical accuracy over communication. Nevertheless, more research on the issue is needed because there is not sound empirical evidence to arrive to a solid conclusion concerning immediate and delayed NF efficacy in different FL teaching contexts.

HOW SHOULD STUDENTS BE CORRECTED

The questions guiding the present discussion cannot totally be analyzed in isolation; they are related one to another. However, some studies have been conducted to carefully answer each one of them. How to correct students when producing erroneous utterances has been a source of research for several years, but before reviewing what authors have found it is important to remember that 'how' in this context is referred to the type of NF (e.g., explicit vs. implicit; input-providing Vs. output-prompting) in terms of its effectiveness.

Different investigators have devoted time an effort to study NF effectiveness in a variety of contexts (e.g., Oliver, 1995; Lyster & Ranta, 1997; Long, Inagaky & Ortega, 1998; Ayoun, 2001; Rodríguez & Perdomo, 2002; Oliver & Mackey, 2003; Balcarcel, 2006; Tsybina, *et al.*, 2006; Perdomo, 2008). Some of them have studied explicit negative feedback compared to implicit (Carroll & Swain, 1993; Rodríguez & Perdomo, 2002; Perdomo, 2008), but there still much work to do because none of those NF types have proven to be effective in most contexts what makes still necessary to do research to state the trends for their effectiveness.

It is important to notice that there is not a unique formula for NF use because there are some factors related to NF effectiveness and the process of language learning. Hence, as Ellis (2009) posits, teacher educators avoid prescribing the strategies that teachers should use. Partially, it is because they are uncertain about which strategies are the effective ones, but it also almost certainly reflects their recognition that the process of correcting errors is a complex one involving a number of competing factors.

Balcarcel (2006) recommends taking into account the students' level of proficiency of the language in order to teach what is appropriate and to provide the adequate negative feedback. In this context, implicit NF has been criticized due to the lack of saliency and because it has been found to be less effective with low proficiency students (Perdomo & Rodríguez, 2002). Explicit NF, on the contrary, has been found to be effective for low proficiency students (Perdomo & Rodríguez, 2002) even when it has shown higher levels of anxiety in students which is not always negative because there is a kind of anxiety leading to learning.

Oral errors correction has been seen as both positive and negative because there are variables related to failure and success. Gómez (2006) indicates that being able to know about students' individual learning styles and preferences will give teachers the clue so as to know whether we should correct them or not and how error correction could improve their linguistic and communicative competence.

Zhang, Zhang and Ma (2010) describe the task of providing effective oral error feedback as difficult and

complex involving many challenges and complexities. They also add that probably the most difficult aspect of the correction process is tailoring corrections to individual students.

In sum, difficulties to select the way to correct include the fact that factor like students proficiency, teaching focus and students' cognitive and affective variables need to be considered as groups and as individuals.

WHO SHOULD CORRECT?

Teachers are expected to provide negative feedback to their students. However, Ellis (2009) highlights that they should be prepared to vary how to correct in accordance with the cognitive and affective needs of the individual learner. In fact, this means they do not need to follow a consistent set of procedures for all students.

Even when teachers are expected to provide students NF, they are not the unique who can do it. Students can also self-correct and correct their classmates. Tomczyk (2013) suggests an order for NF provision: self-correction, then peers correction (in the case when self-correction does not work), and finally, teacher correction (if no one knows how to repair the erroneous form).

In the literature, several studies have been conducted to study the effectiveness of those forms of NF provision. Among the problems related to learner self-correction Ellis (2009) highlights, first, that learners typically prefer the teacher do the correction for them; and second, that learners can only self-correct if they possess the necessary linguistic knowledge. In other words, students might be able to correct mistakes, but the might not be able to correct errors.

Hernández and Reyes (2012) conducted a study in which they found that teachers do consider that they are not the only who can and must correct errors. However, language teaching practitioners do not think that peers are good correcting at their classmates and hence, peer correction can be harmful for the relationships among students. The author of the present discussion respectfully would say that the solution to a bad peer correction would not be avoiding it but educating students to provide proper feedback to their classmates. It would be very useful, especially if one takes into account that students do not only practice the language in class with the teacher but also when they study and share with their mates. In this vein, researchers' interest on peer correction has increased and studies like Sato and Lyster's (2012) have focused on teaching students how to provide corrective feedback during peer interaction.

Teachers' participation in the classroom for giving NF and monitoring self and peer-correction is essential. Tomczyk (2013) found that although peer correction and self-correction have many benefits and the majority of teachers declare to promote these types of correction in the classroom, the students seem not to appreciate them and they expect their teachers to rectify what they do not know.

SOME OTHER VARIABLES RELATED TO NF

As stated before, questions on what, how, when and who correct cannot be studied in isolation. Students are, as any human being, complex individuals which should not be treated as if they were all cognitive and affectively equals. Ellis (2009) recommended teachers to be ready to vary when responding to those NF questions for each student in accordance with the cognitive and affective needs of the individual learner. It means

that they are not expected to follow a consistent set of procedures for all students.

Proficiency is among the most studied cognitive factors related to NF effectiveness in the classroom, which has been found to be related to NF effectiveness in different contexts (e.g., Ammar, 2008; Perdomo, 2008).

Anxiety is a very important affective matter related to oral NF in the classroom. Among those that have studied that relationship is possible to mention Rassaei (2015) who observed that high anxiety level students tend to benefit more from implicit NF like recast. Ellis (2009) posits that teachers should monitor the extent to which NF causes anxiety in learners and should adapt the strategies they use to ensure that anxiety facilitates rather than debilitates.

As it can be observed in the literature, another source of interest for researchers in the field of NF has been students' awareness and perception of NF among other. Affective variables and other subjective variables have also started to be researched, for instance, teachers and students beliefs about negative feedback have recently been addressed and becoming more popular among investigators because they might influence teachers' choices and NF effectiveness (e.g, Hernández & Reyes, 2012; Rassaei, 2013; Kartchava & Ammar, 2014). However, more studies should be conducted concerning motivation for language learning and students' attitude towards the language itself among other.

Little attention has still been paid to the study of negative feedback from the learner's perspective. Among the few studies found, not many have approached the study of learner's perception of negative feedback (Mackey, Gass & McDonough, 2000; Rassaei, 2013) which is an issue that also needs to be studied as well as cognitive factors related to NF and learning (Yilmaz, 2012).

In sum, NF study goes beyond the surface of classroom interaction; it should include all subjective factors related to learning and researchers have noticed it and have started to address different issues that a decade ago was not seen as important. It results in a promising soil for novel researchers because there is still much to be said and done.

CONCLUSIONS

Terminology regarding NF has notably increased during the last decade. Teachers and researchers who perform effective searches on the topic are those who manage those updated terms (e.g., negative evidence, interactional feedback, implicit negative feedback, explicit negative feedback, indirect explicit negative feedback, learners' uptake, among other).

A set of questions were addressed for the present paper, concerning them it is possible to conclude:

- What to correct? Students might require NF when making mistakes, but it would not be necessary when attempts appear.

- How to correct? If the focus is set on accuracy explicit NF would be suitable whereas if the focus is on communication any form of NF would be appropriate. However, subjective variables (e.g., affective, cognitive) are expected to be considered when selecting specific NF forms from the two

main trends (implicit and explicit).

- Who should correct? Students need to be enhanced to correct themselves and they need to be monitored when doing it. Peer correction should be a theme of discussion in the classroom because a culture of relaxed peer correction would be beneficial for students. Teachers must not just concentrate on providing NF, but also on helping students to monitor their own progress and on monitoring peer corrections in oral activities. More research on the issue is still needed.

- When to correct? Benefits of immediate and delayed NF rely on the focus of the task which is supposed to be previously clearly stated. The decision of when to correct is closely related to how to do it. Then, immediate-implicit NF would be useful for oral activities in communication-centered classes whereas delayed-explicit NF would be pertinent when grammatical accuracy is being pursued.

In sum, NF is a dynamic matter; teachers need to be careful with decisions regarding it because it has important pedagogical implications. Foreign language teaching practitioners need to realize that what could be effective for a group of students might not necessarily be effective for others. Teachers must also be aware of all variables related to NF to enhance its effectiveness. Finally, teachers cannot ignore that their role as facilitators is strengthened by accomplishing the role of researchers in their own teaching contexts.

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DEVELOPING AN ENHANCEMENT PROGRAM IN MATHEMATICS STUDY HABITS FOR GRADE 7 STUDENTS IN SAN MANUEL, ISABELA, PHILIPPINES

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Abstract: Students fail because they do not know how to study and the study habits of students 30 years ago still rings true today (Pogue, 2000). This descriptive study is aimed at revisiting and investigating the study habits and mathematics performance of 108 randomly selected Grade 7 students from the three public schools of the Municipality of San Manuel, Isabela, Philippines. It utilized questionnaire, observation and group interview as data-gathering instruments. To enrich the data, four teachers and 70 parents were also interviewed. Data were processed using frequency and percentage distributions, mean, standard deviation, One-Way Analysis of Variance (ANOVA) and *t*-test, post-hoc analysis using Scheffe and effect size using eta square η^2, and regression analysis. Findings revealed that students perceived study habits as a great factor in attaining excellent academic performance; however, teachers perceived students nowadays to have poor study habits. Meanwhile, parents opposed teachers' perception affirm their children's claim. Furthermore, students' academic performance in mathematics is adequately explained by their study habits and mothers occupation. Consequently, the researcher proposed an enhancement program for the schools to adopt to improve students' performance and study habits in mathematics.
Keywords: *Study habits, math performance*

INTRODUCTION

Mathematics is a part and parcel of everybody's living. It has become augmenting and enriching in almost all fields of human undertakings making it a much sought-after subject to get to grips with and learned. This holds especially true to these days where sophistication in all aspects has taken its spot, placing mathematics as a chief concern in the educative process. This is further intensified by the use of electronic gadgets where usages are mostly tied to numbers; thus demanding one's skills in the manipulation of numbers. This has to be; subsequently the target in learning mathematics is to be able to get to the bottom of problems in real life situations.

Hence, with the demands of the society in the impact of scientific and social vicissitudes, and with the depleted performance of the students in major subjects, it is a necessity to make every effort and cope up with the crazes that are taking place not only for the students in the classroom but everyone who has a hand to run into the changes. Every personage must be effective, efficient, intelligent, creative and productive member of the society to come across the indispensable needs for existence brought about by many changes in scientific technology and mathematical experiences.

Students' degree learning in academics may be concluded by the grades a student merits for a period of learning. It is presumed that a grade is a prime gauge of such learning. If a learner earns high grades, it is may be that he has learned a lot; low grades point toward lesser learning. However, many experiences and studies found out that there are also quite a lot of factors that would account for the grades. No single factor can be absolutely pointed out as predicting outcome of grades. It has been a link of many factors such as gender, Intelligence Quotient (IQ), study habits, age, year level, parent's educational attainment, social status, number of siblings, birth order, etc. In fact, almost all of existing environmental and personal factors are variables of academic performance.

Nonis and Hudson (2010) specified that, it is not only the general ability that students bring to a class that contributes to their academic achievement. Several studies (as cited by Hudson, 2010) have investigated and

found that demographic variables, such as gender, age, and race (Beaumont-Walters & Soyibo, 2001; Haist, John, Elam, Blue, & Fosson, 2000; Wong, 2000); psychological variables, such as academic self-efficacy (Bouffard-Bouchard, Parent, & Larivee, 1991); motivation (Barling & Charbonneau, 1992); optimism (Schulman, 1999); and behavioral variables, such as time management skills (Paden & Stell, 1997), relate to student performance. What's missing from these surveys are the study habits or strategies that students use to learn, such as paying attention in class, being on time, taking good notes, completing homework in a timely manner, and reading the study materials before a lecture, that are apt to impact their performance.

Hadley (1992) added that, all students are adept of learning mathematics but the leading barriers are their mistaken beliefs, prejudices, low expectation and fallacies as regards to mathematics. In order to enhance their mathematical skills, students must exhibit suitable study habits that will commendably result in a great performance in mathematics.

Study habits are well-worth the time spent in integrating into one's life since these habits save so much time and effort in the long run. They allow for more success and confidence and this way is invaluable (Holt, 2007). Study habit is the tendency of student to learn in a systematic and efficient way, when opportunity is given. It is also defined as the devotion of time and attention to acquire information or knowledge especially from books. In short, it's the quest of academic knowledge by a thorough investigation of a subject or situation (Oxford Dictionary &Thesaurus of English Language, 2003). Good students are not born but are made by incessant and purposeful drill of good study habits, for which there is no alternative (Ames & Archer, 1988). Thus, it is vital to perk up study habits of students to advance their academic performance. Enhancement of good study habits in children hinges on the shared exertions of parents and teachers (Kizlik, 2001).

Customarily, Tuckman (2008) also researched on an educational psychology-based "study skills" program initially developed to teach learning and motivation schemes to college students and was revised for use by high school students. It engaged teaching students for achievement approach. The strategies and habits were brought into play to teach students to prevail over procrastination, foster self-confidence and responsibility, handle their lives, learn from lecture and text, and make ready for examinations. The training was granted as a course taught utilizing a blended technology-based instructional model called Active Discovery and Participation through Technology (ADAPT). Students who took the training course obtained substantially higher grade point averages in divergence to a matched group, during the term they took the course.

Granting that not every learning strategy or study habit gives off beneficial results in terms of academic achievement, it would be foreseeable that students who hold good study habits in general are better performers than those students with poor study habits (Nonis and Hudson, 2010).

Although not every learning strategy or study habit produces useful results in terms of academic achievement, it would be expected that students who possess good study habits in general are better performers than those students with poor study habits (Nonis & Hudson, 2010). Teachers and parents are concerned with how they can make changes in order to motivate and boost the learners to learn a particular subject. Furthermore, students can also strengthen the education they want to attain by building a sense of responsibility in learning the subject and through possessing such things as good and effective study habits that can help them acquire high and successful performance.

The K-12 implementation in the Philippine Basic Education Curriculum is the key to our nation's development. Though the government will encounter varied problems of it, sooner or later, there really is a need to instigate for the enhancement of the quality of our education because it is very pressing and crucial (Burgonio, 2013).

Students' low performance in major subjects especially in mathematics prompted the researcher to trail an academic attempt of enhancing study habits and performance in mathematics of Grade 7 students. As perceived by the researcher and other teachers, students in the National High Schools in San Manuel have poor study habits specifically in mathematics subject. This study then aims to bring forth a program plan designed for the subject to guide the teachers, guidance counselors, students and parents in enhancing the study habits of students towards mathematics. In line with this, the researcher investigated the extent of study habits and the factors affecting the Mathematics performance of the Grade 7 students of National High Schools of San Manuel, Isabela.

Thorndike's Law of Exercise further sustains this kind of principle contending that, other things being equal, the more frequent a modifiable connection between a situation and response is used, the stronger is the connection. When a modifiable connection between a situation and a response is not being used over a period of time, the strength of that connection is weakened. A behavior that is stimulated over regular periods will tend to be repeated leading to habit formation. A student who has developed this kind of behavior of having regular and scheduled study periods and follows certain methods in studying, proves to have better performance.

Most people thought that the number of hours spent in studies is considered the most important. However, students could study for hours, but little of what had been studied retains. The more appropriate question is, "how can students study more effectively?" There are some issues that students must consider: 1.) Students need to develop good time management skills. 2.) Students should a clearly articulate picture of the

future they intend to create for themselves. 3.) The student must choose the best study schedule, where there is little distraction; 4.) The students must take notes on the subject matter and rehearse them frequently; 5.) Students should not study for hours, 6.) The students must develop good critical thinking skills,; and 7. Students must not be afraid to ask for help when they have a problem on understanding the subject matter (Establishing Good Study Habits, February, 2009). These are the mathematics study habits that would boost the learning and performance of the grade 7 students.

Thus, it is not so much a question of hard study, but how to study in smart fashion. The bottom line is that the students must take responsibility and ownership over their study habits.

The study will focus on the mathematics study habits of the students and their influences to the mathematics performance of the student. In this view, the researcher sought to study how the study habits affect the academic performance of the students in mathematics.

The researcher piloted this study to probe and assess the diverse study habits of the Grade 7 students specially that the K to 12 curriculum has already been put into operation. The researcher desires to know if the students possess the necessary study habits that would improve their learning and performance specifically that the Grade 7 who are the first target of the curriculum change. With this in mind, the researcher anticipates to come up with comprehensive report findings which could be utilized to devise an intervention program that would enrich study habits of students and eventually lead to positive results as far as their performance is concerned.

THE STUDY

In this study, descriptive type of research design was applied. It employed the dimensions of both quantitative and qualitative approaches. The respondents of the study were drawn from three (3) National High Schools of San Manuel, Isabela. There were 108 Grade 7 students, 56 were taken from Callang National High School; 36 were taken from Sandiat National High School; and 16 from Malalinta National High School. The four teacher respondents are those who, during the school year 2012-2013, are teaching mathematics in the said schools. The 70 parent-respondents were taken from the parents of the 108 students respondents through convenience sampling.

Prime tool which was used in the data gathering was a structured questionnaire which comprises two major components. The first part is the descriptive survey on the profile of the students relative to educational attainment of parents, monthly income of parents and occupation of parents.

The second part of the instrument is a questionnaire which is characterized by the three types of item construction as well as a selected response format of a Likert scale. The questionnaire was adapted from the questionnaire used by Payoyo (2000) which is anchored from Wren's Study Habits Inventory, a standardized instrument for identifying the study habits of the students. The questionnaire is in English language. For this purpose, the questionnaire was refined with a pre-testing, and test of validity and reliability of variables.

Content and face validation were steered to ascertain if the sample of items represents appropriately, comprehensively and adequately the content criteria in resolving the mathematics study habits that influence mathematics performance. It also aims to conclude the appropriateness of the format, if directions and items are clear, intelligible and within the comprehension level of the respondents. Content and face validation of the instrument were appraised by an expert panel. A panel of five experts was invited to go through the instrument for content validity. A cover letter enclosing an explanation of the purpose and objectives of the study and a copy of the instrument were prearranged to each expert. Critiques obtained from the panel of experts led to the instrument's clarity.

After revision and scrutiny of the results, the questionnaire was over and done with for the reproduction. The remarks and notes drawn from the pre-testing as well as suggestions from the experts were assimilated in the concluding draft of the questionnaire, after which the reproduction and distribution were done.

For the intention of piling up qualitative data in the study, semi-structured interview was put to use. Each interview was transcribed exactly as recorded. This transcription route aided as a written manuscript of the interview dialogue. After recording the interview, the researcher verified the transcription for precision by listening to the audio tape again and reading the transcribed notes.

FINDINGS

Profile of the respondents.

The student-respondents have satisfactory study habits on note-taking, concentration and interest, and reading, memorizing and reviewing while they have poor study habits at home, in the library, and in using technology. As to parents' educational attainment, majority of the respondents' fathers and mothers reached high school level. As regard the average monthly income of parents, most of them are earning Php 4,999 and below per month while the least was recorded at Php15,000 and above for fathers and Php20,000 and above for mothers. As to parents' occupation, majority of fathers are farmers, fishermen or carpenters while most mothers

are unemployed or housekeepers. The teachers' performance was found to be very satisfactory based from their performance appraisal. The students however perceived their teaching instructional competence to be satisfactory.

Students' performance in mathematics.

As to the level of performance of the students, they are proficient in process and skills, performance, and knowledge while they are in the approaching level in understanding. On the levels of performance in every levels of assessment, most of the students were proficient in performance, understanding, and process and skills while advanced in knowledge. On the other hand, the least number of students were under the beginning level across all assessment level.

Perception of students, teachers and parents about mathematics study habits.

The student-respondents perceived that study habits help in dealing with their mathematics class and in attaining excellent academic performance and these habits include reading, reviewing and memorizing. All of the teacher-respondents perceived that most of the students nowadays have poor study habits. According to them, poor study habits of students is reflected in their performance and in the result of a paper-pencil test and in their habit of not doing their assignments. They also added that good study habits are of great help in improving one's academic performance. Students with good study habits perform better and got high grades while students with poor study habits have also poor performance. Majority of parent-respondents perceived that their children have good study habits while only a few perceived that their children have poor study habits. According to parents, good study habits help the students understand mathematics lesson, prepare every student to become active in class discussion and it will lead them in finishing their studies.

Mean difference on mathematics study habits when grouped by students' profile variables.

There exists significant difference among the following set: educational attainment of father and habits of using technology; and occupation of father and habits of concentration and interest, note-taking and listening, reading, memorizing and reviewing and habits of library, $p < .05$, medium effect.

Mean difference in mathematics performance when grouped by mathematics study habits.

There exists consistent difference of students' mathematics performance across all levels of assessment when students are grouped according to their habits of concentration and interest and habits of reading, memorizing and reviewing. Except for the level of knowledge, students are significantly different in performance when grouped according to habits of note-taking and listening and mathematics study habits in general, $p < .05$, medium effect. The post hoc analysis revealed that those who have poor study habits are at disadvantage.

Predictors of mathematics performance.

Students who were at least proficient have significantly better mathematics study habits than those who were not at least proficient.

Specifically, all of the study habits included in the present study except the last two; habits of using technology and general habits at home predicted generating total adjusted R-square values of around 3%-12%. Delving on each indicator per dimension, two per categories emerged to predict mathematics performance of students.

Proposed enhancement plan

After the results were generated, a proposed enhancement program is presented to help enhance students' performance through improving their study habits in mathematics.

CONCLUSIONS

Students' mathematics study habits in general are acceptable and satisfactory. The parents of the student-respondents belong to the low to middle bracket of Philippine society while he teachers of the student-respondents are instructionally capable. Furthermore, students have relatively proficient academic performance in mathematics and they perceived study habits as a great factor in attaining excellent academic performance; however, teachers perceived that most of the students nowadays have poor study habits; while parents opposed teachers' perception affirming that their children have good study habits. It is also concluded that the role of parents in the improvement of students' study habits in mathematics is an integral component. The students' performance in mathematics is modestly explained by their study habits in mathematics and the parents' contribution. The findings suggest that study habits in mathematics should be seen in multidimensional perspectives and that an enhancement program should include the stakeholders of education which include among others the teachers, students, parents, and the community.

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EFL LEARNERS' PREFERENCES FOR FEEDBACK TYPES FOR THEIR WRITTEN PRODUCTS

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Abstract: In recent years, while research on various feedback types has gained increasing interest, the studies investigating language learners' preferences for the effective feedback type and amount which complement with their needs in writing skill have been neglected. Furthermore, existing research merely focused on learners who have high level of language proficiency in ESL context, but ignored the preferences of EFL learners who have lower level of language proficiency. In this sense, the current study aims to examine EFL learners' preferences for the effective feedback type and amount for writing skill. For this purpose, the participants of the study were selected among low level EFL learners. As part of the data collection procedures, a questionnaire including yes/no, Likert Scale; and open ended items based on qualitative and quantitative research design was administered to learners to collect data and the findings imply that EFL learners prefer to receive feedback for their errors.
Key words: EFL learners, writing, feedback, preferences.

INTRODUCTION

While feedback is commonly defined as the informing process about expected outcomes based on the learners' language production (e.g., Mory, 2004), it is suggested to be a significant element in language teaching and learning, therefore, an opportunity for learning by leading students to develop their future performance (Knight & Yorke, 2003). To this end, feedback is one of the key elements of language teaching for the improvement of learners' spoken and written production. Since feedback has been a popular research area for both speaking and writing skills, studies have been conducted to improve feedback practices. While the research has focused on timing of the feedback (immediate or delayed feedback) (e.g., Bitchener, 2008; Bitchener & Knoch, 2008) or the effect of corrective feedback on grammatical accuracy (Bitchener, 2008; Bitchener & Knoch, 2009a; 2009b; Sheen, 2007), a limited number of studies have focused on learners' preferences for the types of corrective feedback (eg., Armhein & Nassaji, 2010), so taking little research on language learners with low proficiency level into account, the current study aims to contribute to the understanding of preferences of these learners.

REVIEW OF LITERATURE

2.1. The notion of feedback

Feedback which can be defined in various ways and specifically refers to "an attempt to draw learners' attention to problems in their writing" (Shintani, Ellis & Suzuki, 2014, p. 105) and particularly corrective feedback that is defined as "any feedback provided to a learner, from any source, that contains evidence of learner error of language form" (Russell & Spada, p. 134) have been prominent research topics in second language learning as they are regarded among ways to improve learners' ability in the language. In terms of writing skill, corrective feedback can be provided to learners in two ways, namely direct corrective feedback such as crossing out of an unnecessary word/phrase/morpheme, the insertion of a missing word/phrase/morpheme and indirect corrective feedback such as underlining or circling the error; recording in the margin the number of errors in a given line; or using a code to show where the error has occurred and what type of error it is (Ferris & Roberts, 2001).

The effectiveness of feedback on writing skill has been investigated extensively and various findings have been revealed. For instance, a number of studies have focused on the effect of feedback in a general way (e.g., Bitchener, 2008; Hartshorn, Evans, Merrill, Sudweeks, Strong-Krause, & Anderson, 2010; Hyland & Hyland, 2006). In this sense, one of these studies, the study of Truscott and Hsu (2008) which was carried out with 47 EFL graduate revealed that students who received feedback were more successful in writing than the control group who did not receive any feedback. The effect of revision has also been explored (e.g., Bruton, 2009; Truscott & Hsu, 2008). To this end, it emerged in the study of Truscott and Hsu (2008) that revision of the written products had no effect on students' success in writing. Furthermore, a great number of studies have been conducted to examine the effects of focused and unfocused written corrective feedback on the learners' grammatical accuracy (e.g., Ellis, Sheen, Murakami, & Takashima, 2008; Evans, Hartshorn, & Strong-Krause,

2011; Sheen, Wright, Moldawa, 2009) and they concluded that students who receive focused written corrective feedback achieve the highest accuracy scores (e.g., Sheen, Wright, & Moldawa, 2009). Additionally, studies have been conducted to explore the effects of different feedback types (Bitchener & Knoch, 2009; Bitchener, Young, Cameron, 2005; Chandler, 2003). For example, Chandler's (2003) study that was carried out with 31 conservatory students revealed that direct feedback and underlining of errors are better than other feedback types such as explaining the type of error. Yet, the study of Bitchener and Knoch (2009) has revealed no significant difference in the effect of different feedback types such as direct corrective feedback and metalinguistic explanations. On the other hand, a limited number of studies have focused on teachers' and learners' views about the feedback types (e.g., Carless, 2006; Lee, 2004; Ormond, Merry & Reiling, 2005; Poulos & Mahony, 2008; Armhein & Nassaji, 2010) as also stated by Poulos and Mahony (2008): "Few studies have been identified in which the research focus is specifically on students' views of feedback." (p. 144) These studies have suggested that students' preferences for a feedback type have significant impacts on their learning. In this sense, if a student prefers a particular type of feedback, he or she may tend to focus on the feedback provided by using this type (e.g., McCargar, 1993; Schulz, 2001, in Amrhein & Nassaji, 2010). In other words, students are selective in their preferences for the type and amount of the feedback even though it is suggested in the literature that direct corrective feedback is only effective for certain types of errors (Sheen, Wright & Moldawa, 2009). For example, it is suggested in the previous research that direct explanations on structural and lexical errors and comments on content are preferred by the students for their errors (e.g., Semke, 1984; Zamel, 1985; Woroniecka, 1998; Ashwell, 2000; Leki, 1991; Ziv, 1984 as cited in Armhein & Nassaji, 2010). On the other hand, a few studies have indicated that students find indirect correction such as underlining and coding more effective than the other types. (e.g., Lee, 2005) With regard to varied research findings, it can be implied that there is still a need to investigate students' preferences. Considering that most of the studies conducted have been carried out with ESL learners (Armhein & Nassaji, 2010; Bitchener, Young & Cameron, 2005) with high level of proficiency (e.g., Bitchener & Knoch, 2010;Ellis et al, 2008; Hartshorn et al, 2010), therefore, the current study aims to contribute to better understanding of preferences of EFL learners' with a low level of proficiency for amount and type of feedback. With this regard, the following research questions will be addressed.

1. What amount of feedback do EFL learners prefer for their written products?
2. What types of feedback do EFL learners prefer for their written products?
3. For what types of errors do EFL learners prefer correction in their written products?

THE STUDY

3.1. Setting and Participants

Due to convenience and eligibility issues, Bülent Ecevit University, School of Foreign Languages has been selected as the setting of the current study. Therefore, participants consist of 120 EFL learners studying at the Department of Basic English of the same school. The learners obtain a one-year long language education before they carry on their studies in their own departments and their proficiency is determined by a proficiency exam administered at the beginning of the academic year. The students failing the exam with a lower grade than 60 are placed in classes appropriate for their language levels which range from A1 to A2 and they obtain approximately 26 hours of language instruction in an integrated course design in which writing skill constitutes 15% of the whole distribution of language knowledge and skills a week. In writing classes, the learners are provided with various authentic writing tasks and genres based on real life and their writing skill is assessed in proficiency exams administered at regular intervals. Additionally, with new trends and approaches, one of the alternative assessment tools, portfolio, has taken its part in this language program. Thus, learners are involved in the assessment process by self-evaluating their progress in writing. Implementation of portfolios proceeds in this way: Students write their assignments, teachers give feedback to their assignments by using correction codes and students revise their assignments in light of the correction codes provided, finally keep their written products in their portfolios. At the beginning of each academic year, students and teachers are informed about this process through norming sessions and explanations. Students evaluate their own progress at the end of each term and their grades combined with teachers' grades constitute 5% of total proficiency scores at the end of the year. In order to provide variety in procedures related to writing skill and gain the utmost use of alternatives, new ways are searched in the school. Therefore, implementation of different feedback types has been a fruitful experience for the purpose of finding better ways of giving feedback by focusing on students' preferences at the school.

3.1. Material

As the data collection tool, the questionnaire of Armhein & Nassaji (2010) was adapted following getting permission of the authors to use the material since it was appropriate for the context and likely to be an effective tool to collect data in light of the aim of the study. With this regard, the questionnaire includes closed ended

(Likert-scale, Yes/No) items that constitute quantitative data and open ended items that constitute qualitative data of the study.

3.2. Research Design

In order to investigate students' preferences in depth and obtain more reliable and valid data both quantitative and qualitative research designs were used in the present study. Besides, getting students' preferences in a 5-likert scale question type, open ended and Yes/No questions were used to analyze the reasons for their choices. Statistical Package for the Social Sciences (SPSS) version 20 was used for descriptive statistics and percentages of the analyses. As for the qualitative data analysis, students' explanations for each choice were analyzed through thematic analysis. Finally, both quantitative and qualitative data analyses were organized in tables and figures.

FINDINGS AND DISCUSSION

The questionnaire includes items about the amount of feedback and types of feedback. Considering that the first question of the questionnaire is related to the first category, findings are listed as follows:

4.1. Amount of feedback

In order to examine students' preferences for the amount of feedback provided, the question "*If there are many errors in your writing, what do you think your English teacher should do?*" (M=1.12, SD=.53) has been asked to the students in the questionnaire and the findings suggest most students (N=113, 94.2 %) prefer that all mistakes are corrected by their teachers. Learners' preferences for this choice and the other choices are illustrated in Table 1.

Table 1: *Learners' preferences for the amount of feedback*

Preferences for the amount of feedback	Frequencies	Percent
Teachers should mark all errors.	113	94.2 %
Teachers should mark all major errors but not the minor ones.	3	2.5 %
Teachers should mark most of the major errors, but not necessarily all of them	2	1.7 %
Teachers should mark only a few of major errors	1	.8%
Teachers should mark only the errors that interfere with communicating your ideas	1	.8%
Teachers should mark no errors and respond only to the ideas and content.	0	0
	Total 120	Total 100 %

As illustrated in the table, 94.2 %, in other words 113 students prefer that all of their errors are corrected by their teachers. When qualitative data have been analyzed, it emerged that the reasons for their preference are that they find it more useful and effective as it both explains the errors better and enhances self-evaluation. Furthermore, according to the students, it prevents misunderstanding since errors can be noticed easily and reduced. They also suggest that as it provides an opportunity for revision of grammar, every grammar point should be focused on. Since these learners have a low level of proficiency (A1 and A2) they think that all mistakes are corrected is highly effective for their learning. In this aspect, the findings are in line with Lee's (2004) study and the study of Armhein and Nassaji (2010) in which students have stated that they prefer to receive feedback for all of their errors. However, in the current study, the students suggest that this feedback type can be changed as language proficiency gets higher, which is in line with what Knight and Yorke (2003) have suggested. According to Knight and Yorke (2003), students should have the chance of receiving feedback appropriate for their learning.

As also demonstrated in Table 1, 7 students also prefer other options. The reasons for their preferences are as listed:

- Teachers should mark all major errors but not the minor ones. (2.5 %)
Students can correct minor errors themselves.
-Teachers should mark only the errors that interfere with communicating your ideas. (.8%)
Since communication is of great importance, these types of errors should be marked.

Regarding the preferences for the amount of the feedback, the other question has been concerning repetition of the errors and teachers' corrections. Most of the students (91 %) have answered the question "If you repeat the same error in a writing assignment more than once do you think it is useful for your teacher to mark it every time it occurs?" (M=1.12, SD=.39) "Yes" while the percentage of the answer "No" is only 9%. However, students have not explained the reasons for their preferences. As conclusion, considering the amount of feedback, the findings of the study suggest that these learners prefer written corrective feedback for all of their errors in their written products since they think they can learn better by analyzing their errors.

4.2. Types of Feedback

Besides the amount of feedback, students' preferences for feedback types for their written products have also been investigated in the study. To this end, students have been provided with the options of *clues or directions on how to fix an error, error identification, correction with comments, teacher correction, commentary, no feedback on an error, and a personal comment on the content* and their preferences for each option have been analyzed. Table 2 illustrates EFL learners' preferences for feedback types for their writing assignments.

Table 2: *EFL learners' preferences for feedback types for their writing assignments*

Feedback types	useless	not useful	doesn't matter	quite useful	very useful
clues or directions on how to fix an error (M=3.56, SD= 1.36)	12 10%	21 17.5%	14 11.7%	34 28.3%	39 32.5%
error identification (M=2.4, SD=1.31)	37 30.8%	38 31.7%	16 13.3%	18 15%	11 9.2%
correction with comments (M=4.03. SD=1.13)	5 4.2%	9 7.5%	18 15%	34 28.3%	54 45%
teacher correction (M=3.32, SD=1.24)	12 10%	18 15%	34 28.3%	31 25.8%	25 20.8%
commentary (M=3.33, SD=1.34)	18 15%	13 10.8%	28 23.3%	33 27.5%	28 23.3%
no feedback on an error (M=1.41, SD=1.04)	100 83.3%	7 5.8%	3 2.5%	4 3.3%	6 5%
a personal comment on the content (*M*=2.03, *SD*=1.29)	61 50.8%	21 17.5%	21 17.5%	7 5.8%	10 8.3%

As shown in Table 2, among these varied answers, it has emerged that the most preferable type of feedback is *correction with comments* since 54 out of 120 learners (45% of all) have regarded it as very useful and the qualitative data revealed that students find it useful as they think this feedback type enhances permanent learning. Apart from *correction with comments*, the second most preferable feedback type has been *clues or directions on how to fix an error with* 39 students (32.5 %) and encouraging discovery, providing an opportunity for revision and variety in the feedback types, enhancing studying and permanent learning are the positive aspects of the feedback type noted by the students. One student has explained his/her choice by using the proverb "Give a man a fish and he will eat for a day; teach a man to fish and he will eat for a lifetime." On the other hand, a number of students have expressed drawbacks of the feedback type as follows:
 -Clues are sometimes incomprehensible and not clear enough.
 -Students do not research their errors in the book, so it is not effective especially for lazy students.
 -Since there is no focus on the error, it is not useful.
 - Looking up the errors is time consuming.
Considering qualitative data for other feedback types, it has emerged that students do not prefer error identification since the error is not clarified, it is not useful. Similarly, they do not prefer overt correction by the

teacher as it is not effective and students write the corrected form without thinking. As for the comment with no correction, one student has indicated that "Crack in the wall plaster is not excreted without being seen". Concerning no feedback on an error, a huge number of the students (*N*=100, 83.3%) find it useless indicating that they prefer being corrected. Lastly, considering personal comment on content, data have revealed that learners do not prefer it since they think it can be indulging and offensive, also not content but the errors should be given feedback.

While a number of the findings are in accordance with the study of Armhein and Nassaji (2010), a few of them are different. For instance, both studies have revealed that majority of the learners prefer correction with comments. However, while the learners in the current study have found teacher correction as an ineffective type of feedback, the participants in the study of Armhein and Nassaji (2010) have found this feedback type effective. The findings indicate that participants in each setting are aware of their needs and learning process as they can comment on what may be an effective practice for them.

The other question related to preferences for the error type has been *"If there are many different errors in your written work, which type(s) of error, do you want your English teacher to point out most?"*. The options provided and students' preferences for them are illustrated in Table 3.

Table 3: *Students' preferences for type of error that they would like to receive feedback*

Type of error	Useless	not useful	doesn't matter	quite useful	very useful
Teacher points out organization errors paragraph structure, sentence order) (*M*=4.35, *SD*= .88)	3 2.5%	1 .8%	12 10%	39 32.5%	65 54.2%
Teacher points out grammatical errors (*M*=4.63, *SD*=.69)	1 .8%	2 1.7%	3 2.5 %	29 24.2%	85 70.8%
Teacher points out content/idea errors (*M*=3.84, *SD*=1.20)	7 5.8%	13 10.8%	17 14.2%	38 31.7%	45 37.5%
Teacher points out punctuation errors (*M*=3.62, *SD*=1.21)	9 7.5%	12 10%	30 25%	34 28.3%	35 29.2 %
Teacher points out spelling errors (*M*=4.26, *SD*=1)	4 3.3%	4 3.3%	12 10%	37 30.8%	63 52.5%
Teacher points out vocabulary errors (wrong word choice, wrong meaning) (*M*=4.62, *SD*=.63)	0	0	10 8.3%	26 21.7%	84 70%
Total	120				

As illustrated in the table, students have different preferences for the type of error that they would like to get feedback. To start with, 85 students (70.8%) prefer to receive feedback for their grammatical errors. Secondly, majority of the students (*N*=84, 70%) prefer feedback for their vocabulary errors as they state that corrective feedback on vocabulary and content is significant to improve their language. Considering the findings, it can be concluded that learners are aware of their choices and the reasons for them, which may be supported by the literature: If a student prefers a particular type of feedback, he or she may tend to focus on the feedback provided by using this type (e.g., McCargar, 1993; Schulz, 2001, in Amrhein & Nassaji, 2010)

IMPLICATIONS AND CONCLUSION

In recent years, with the improvements in language teaching and changing shifts, language learners' communication and real language use have been of great importance. Therefore, new ways have been sought to improve their language production. As for learners' written products, learners have been encouraged to use real language in authentic contexts and writing skill has been an ongoing process in which students are involved to correct their errors, therefore, improve their skills. In terms of corrective feedback, various studies have been conducted to investigate the effectiveness of the amount and types of it (e.g., direct or indirect corrective feedback, error identification, and comment on content). While these studies have commonly focused on the effects of written corrective feedback on grammatical accuracy, only a little research has focused on teachers' and students' views about these feedback types (e.g., Armhein & Nassaji, 2010). These studies have revealed that learners tend to have positive attitudes towards corrective feedback and they have different feedback preferences. However, as the research has focused mostly on ESL learners with high level of proficiency, new studies are necessary to understand learners' preferences from different perspectives. Therefore, the current study has aimed to examine feedback preferences of EFL learners with low level of proficiency. In this sense, these learners were administered a questionnaire adapted from Armhein and Nassaji (2010) including items

about their preferences for the amount and types of feedback and types of errors that they would like to receive feedback on. The findings revealed that students prefer to receive corrective feedback for all of their errors as they think it is important to notice all the errors to learn better. Furthermore, regarding their preferences for the feedback type and the type of their errors that they would like to receive feedback, it has emerged that they have different preferences, which indicates the significance of providing variety in the methods and techniques employed in language classes as each individual differs in needs and learning styles. One of the important findings of the study is that a huge number of students have negative thoughts about overt correction by the teacher as they think it is no use for learning, which suggests that it is of great importance to encourage students' active participation and critical thinking in learning teaching process. Thus, teachers should involve students in learning practices and provide opportunities for discovery learning. Furthermore, as for the types of the errors students would like to receive feedback on, the findings have revealed that students prefer receiving feedback for their vocabulary and content errors, which implies that students are aware of their needs and learning process.

Overall, the study provides significant findings and implications about the discussion of the written corrective feedback in language teaching by revealing EFL learners' preferences for amount and types of feedback for their written products. However, it may not be possible to generalize the findings since they only reflect the case of a particular setting and context. Therefore, more research is needed to enrich understanding of the related research with new participants and contexts. As a conclusion, implications of the current study and the future studies are likely to contribute to future practices in language learning and teaching.

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ENGLISH LANGUAGE USE AMONG ORAL COMMUNICATION MERANAO STUDENTS AND THEIR LANGUAGE LEARNING ORIENTATIONS:
THE MSU MARAWI CASE

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Abstract: This study investigated the frequency of English language use among Meranao students of oral communication subject in the different speech domains in the Mindanao State University (MSU), Marawi, and their orientation/s in using and learning the English language. Meranao which means "people of the lake", largely settle in the region surrounding the basin of Lake Lanao who are adherents of Islam.

This study combined both quantitative and qualitative data collection and analysis procedure. This used purposive sampling method in gathering fifty (50) Meranao students of Oral Communication subject as respondents of this study. For instrumentation, questionnaire and focus group discussion (FGD) were employed.

It was found that, generally, the respondents sometimes use English language in the different domains and speech situations in the university. Furthermore, respondents were instrumentally oriented in their English language learning.

INTRODUCTION

The majority of the people around the globe consider English as first, as second or as foreign language. This target language is used as the lingua franca or as the official language for diplomacy, trade, governance, media and technology. But learning this language is not an easy task. Affective factors are important, along with the support from the peers, the environment and the people around, to facilitate the target language learning and success.

In the Philippines, the Mindanao State University, Main Campus in the Islamic City of Marawi is the "Melting Pot of the South." It provides quality education to the cultural communities of Mindanao, Sulu and Palawan (MINSUPALA) regions, most especially to the Meranaos in the province of Lanao del Norte, Lanao del Sur, and in Marawi City. Meranao which means "people of the lake", largely settle in the region surrounding the basin of Lake Lanao who are adherents of Islam. The Meranao students dominate the university reaching more than half of its total population. This fact implies that the other half are from the different cultural groups who speak a variety of tongues—Filipino, Visayan languages, Iranon, Maguindanaon, and Tausug and even some indigenous languages. To this mix must be added the other official medium of instruction which is the English. In this rich tapestry of various ethno-linguistic backgrounds, Filipino as the national language and one of the official mediums of instruction is the assumed lingua franca.

With this kind of environment, the researcher was motivated to undertake this study to know the status of English language learning in a multi-cultural, multi-religious, and multi-lingual context among the Oral Communication Meranao students in the university. This is viewed in terms of the frequency of English language use in the different speech domains in the university and their language learning orientations. The researcher chose the Meranaos as respondents since they comprise the largest population that could create a picture of the general status of English language learning in the university. It is believed that mastery and proficiency in language are achieved through application in real-life situations. This is important for the researcher since orientation dictates the amount of effort that students will exert in learning the target language that can also affect the teaching methods and approaches.

THE STUDY

Theorists agree that learning English is not a simple task. It is a complex skill which involves social and psychological factors. In the past, the aim of teaching English was the mastery of the structure of the language. Now, in this age of communication, English is playing a major role. The purpose of teaching has shifted from the mastery of structure to the ability to use the language for communicative purposes. The ultimate goal of language learning then is "authentic communication between persons of different languages and cultural backgrounds" (McIntyre et al. 2002).

Spolsky (1989) stated: "A language may be learned for any one or any collection of practical reasons. The importance of these reasons to the learner will determine what degree of effort he or she will make, what he or she will pay for the learning." These reasons have been referred in language learning as orientations.

Gardner and Tremblay (1994) used the word orientation to refer to reasons for studying a second language. They identified two types of orientations--the instrumental and the integrative orientations. Instrumental orientation refers to the desire to learn a language for functional reasons such as getting a job, reading scientific papers, passing an examination, and the like. On the other hand, integrative orientation refers to the desire to learn a language in order to communicate with people of another culture who speak it, to identify with, and become part of that society or culture.

This study was undertaken to answer the following questions: A.) What is the profile of the respondents in terms of age, sex, course and year level? B.) What is the frequency of English language use in the different domains in the university among the respondents? C.) What is/are the language learning orientation/s of the respondents?

This study used the qualitative-quantitative research paradigm to probe the English language use among Oral Communication Meranao students and their language learning orientations in the context of the Mindanao State University, Marawi. The quantitative aspect of the study involved the use of questionnaire to determine the frequency of English language use in the different speech domains and situations in the university and their orientations. On the other hand, the qualitative aspect of the study involved focus-group discussion (FGD) to expound and elaborate the quantitative results.

The study was conducted in the Mindanao State University, Marawi City. The Mindanao State University in the Islamic City of Marawi is the "Melting Pot of the South." It is a veritable mosaic or salad bowl type of society in which students of diverse religious, cultural and linguistic backgrounds—the Muslims, the Christians and the Lumads or indigenous people are thrown together to study and live in harmony. A mosaic is a society in which ethnic groups retain their separate identities but together form a larger community. One finds the Mindanao State University a cauldron of diverse cultures and Babel of tongues.

This study gathered fifty (50) Meranao students of oral communication subject during the second summer of the school year 2014-2015 as respondents. As required of the study's respondents, Meranao means born of Meranao parents both mother and father. Tracing this fact does not go beyond the immediate parents, which means that even the participants/respondents whose mother or father, either or both, are only half-Meranaos qualified as participants. It used purposive sampling and the instruments used were questionnaire, semi-structured interview schedule for focus-group discussion and the video recorder.

RESULTS AND FINDINGS

1.   With regard to the profile of the respondents, it was found that out of fifty (50) Meranao respondents, there were thirty-seven females and thirteen (13) males. Also, there were 42 respondents aged 16-17 years old, 5 respondents were aged 17-18, and 3 respondents were aged 19-20. Furthermore, majority of the respondents were taking Bachelor of Science in Public Administration with a population of thirty-seven (37) and the other thirteen respondents were taking Bachelor of Science in Arabic Studies. And lastly, most of the respondents were first-year college students with a population of forty-two (42), five (5) were second-year students, and three (3) were third-year students.

2.   In terms of the frequency of English language use in the different speech domains in the university among the respondents, results revealed that in English classes, thirty-eight (38) of them or 76% sometimes use English, while five (5) or 10% always use English. There were three (3) or 6% who seldom use English, while three (3) or 6% rarely use English. There was one (1) or 2% of the total number of respondents who never use English.

The data reveal that most of the respondents sometimes used English in their English classes. As explained by some of the students during the focus group discussion, communicating in English is "absurd." Since they shared the same first language, speaking in English in English classes did not make sense to them. Respondents generally found the use of English language even in English classes as "absurd" because English language for most of the respondents is difficult. Respondents were also pushed to make more candid comments such to hide their linguistic insecurity, or language ego and to save faces. This attitude or insecurity is common in a bilingual setting, as pointed out by Dulay and Burt (cited in Ovando and Collier, 1985). Using the target language in a formal setting like the classroom is a daunting and tension-filled experience.   The result of the inquiry on this particular problem correlates or lends support to Abdulgaffurs's study (2010). This could also be influenced by the negative impression associated when one uses English language and the difficulty that comes along with using the language.

With regards to English language use in the respondents' non-English classes, such as history, psychology, mathematics, chemistry and other subjects except Filipino and other languages courses, it was found that forty (40) or 80% used English sometimes, seven (7) or 14% use it always, and one (1) or 2% of the total population for each of the frequency: never, rarely and seldom.

The results show that respondents sometimes use English language in their subjects other than English courses such as mathematics, physics, psychology and others. Respondents revealed that most

of their teachers/ instructors in these content courses did not encourage them to use English because of the idea that these are not language subjects or courses. Most of their teachers/instructors and even the respondents themselves believe that concepts and topics taught are not comprehensible when taught in English.

This result defies or goes against the Bilingual Education Policy (BEP) in the Philippines which is defined operationally as the separate use of Filipino and English as the media of instruction in specific subject areas. As embodied in the DECS Order, Filipino shall be used as medium of instruction in social studies/social sciences, music, arts, physical education, home economics, practical arts and character education. English, on the other hand is allocated to science, mathematics, and technology subjects.

Thus, teachers in science and mathematics have to be equally prepared to perform their tasks not only by mastering their own subject area but also by achieving competence in the use of English as the medium of instruction. Designated as a second language in the Philippines, English takes the central role of bridging knowledge and skills in mathematics and science to learner competency in these areas. The teacher's preparation should not just be in terms of knowledge and skills in their specialization but also in their attitude towards the tools that they use in teaching their subjects. Attitude towards the use of English as a medium of instruction plays a significant role in determining the success of the science and mathematics program in the university.

The dire consequence of the progressively shrinking domain of English in Philippine schools is doom writ large on the wall, for the English language. The language, learned as second language, does not get enough reinforcement or support outside of English classrooms. In other words, the limited range of functions of English implies doom than destiny for the quality of English spoken in Philippine campuses.

In the library, thirty-four (34) or 68% sometimes used English in the library. On the other hand nine (9) or 18% answered never, four (4) or 8% said seldom, two (2) or 4% responded rarely, and one (1) or 2% said always.

Also, when talking or dealing with the college officials which include the dean, assistant dean, college secretary, and others, twenty-four (24) or 48% of the respondents said that they sometimes used English when dealing with the college officials. There were seventeen (17) or 34% percent of the respondents answered always, while three (3) or 6% of the respondents responded for each of the following frequency: never, seldom and rarely.

It would seem that many of the respondents could at least be credited with a medium of sociolinguistic competence. The age, rank or position of people they interact with prove to matter. When they have college officials as fellow interlocutors, the respondents adjust their code, or feel compelled to use English. The use of English in such a speech situation is a tacitly acknowledged rule.

When talking or dealing with the university and college personnel and staff including the administrative head, clerk, janitors and others, forty-two (42) or 84% percent answered never, while three (3) or 6% was the answer for rarely and seldom. Among the respondents, two (2) or 4% of the respondents answered sometimes, and nobody answered always.

Compared to the preceding result—i.e. English language use with College officials—the result concerning English language use with college personnel and staff does not show as high as a willingness to communicate in English. College personnel, after all, are not required to observe the English Only Policy (EOP). They are not likely to carry out exchanges with students in English; hence, the latter do not see a compelling need to use English with them.

In dealing with university officials, including the President, Vice-President, Vice-Chancellor, Director, University Registrar and others, twenty-seven (27) or 54% answered that they sometimes used English when dealing with the university officials, while nineteen (19) or 38% answered always. There were three (3) or 6% who answered never, one (1) or 2% who answered seldom, while nobody answered rarely.

The large proportions of respondents who answered "always" and "sometimes" again suggest as in the case of speech situations involving college officials, effort on the part of the respondents to show sociolinguistic competence. Use of the English language in intercourse with high-ranking officials is dictated by the context of the situation. A kind of tacitly acknowledged principle (something like decorum or "appropriateness") operates in such instances.

During the focus-group discussion, respondents were asked if they use English in the other speech domains in the university which were not included in the questionnaire since the researcher believes that the MSU being a residential campus some domains are not present in a typical university setting. Respondents revealed that they seldom use English language in the commercial center because they fear that people would have negative impressions on them. It is not surprising to note that in the

campus, when one uses English, it is either he/she is proud or seeking for an attention or it could be both. The following were some of the remarks made by the respondents.

> *"Using English in the canteen/cafeteria among friends will only create negative impression from those people who are there. But sometimes, we use English when making jokes or funny quotes. For example, 'Don't English me, I'm panic!" haha.*

> *"I only speak in English when citing a verse in the Bible, but I speak in local dialect when explaining it, heehee."*

> *"Why should I speak in English with a stranger? He might think that I am sosyal, he will kidnap me, hehe."*

> *"I cannot construct even simple conversation in English with friends, how much more with a stranger. Nose-bleed huh!"*

> *"Why English? To impress that stranger? No, he might hire me as his tutor! Haha!"*

> *"Commercial center is the only source of fun in the campus, so, I don't want to spoil it by talking in English. When you use English, you are not building bridges, you are burning bridges!"*

> *"I never tried talking to the jeepney driver in English. I might not reach my destination! Haha"*

> *"The jeep might fall down the Saguiaran bridge if I talk to the driver in English!"*

Initially, some respondents reacted negatively, but after careful probing, they clarified that their answers associated this negativity with their insecurity in speaking the English language. Other respondents thought that non-native speakers who use English at home and in places beyond the school want only to impress other people with their competence in the language. They perceived these users to be "maarte" (exaggerated) and "OA (overacting)".

3.   In terms of the language learning orientations, respondents strongly agree to the statements that "Learning English would help me to pass the subject and to graduate" ranked first with the mean of 4.8; "Learning English will be useful for me in getting a good-paying and high-ranking job after graduation" which ranked second with the mean of 4.6. Also with the statement "Learning English is important for me because it will make me more knowledgeable" with the mean of 4.3 which ranked third. Respondents agree that "Learning English language is necessary for me to learn to understand English novels, story books and appreciate English movies" which ranked fourth with the mean of 3.7; and the statement "Learning English will help me to understand better the native English speakers and their way of life" which ranked fifth with the mean of 3.5. Respondents were undecided in the statement "Learning English will help me to go for higher studies abroad" with the mean of 3.36 and the statement "Learning English language helps me to think & behave like the native speakers" with the mean of 2.7 which ranked sixth and seventh respectively.

CONCLUSIONS

1. In this study, it is not surprising that there were more female respondents than their male counterpart because it is an acknowledged fact that females outnumber males not only in the country but even in other countries. The data indicate that majority of the respondents were 16-17 years old, which are the typical age for first year college students. These first year students comprise the English 3 course. The result also suggests that majority of the respondents fell into the typical 16-17 age bracket which could only mean that they are "on schedule," so to speak. MSU students usually take their English 3 course requirements in the first two years. Only repeaters enroll late in these courses, an "anomalous" or abnormal situation that sound or conscientious advisement should present. It is also not surprising to reveal that majority of the respondents were first year students. This is the year which equips students with speech communication skills for interacting with English speakers in their community and beyond.

This course does not only foster the development of a functional command of spoken and written English, it also helps prepare the students get ahead in school and in future workplaces.

2. In sum, respondents' use of the English language depends on the context of situation, which in Hallidayan language consists of field, tenor, and mode. Briefly, field refers to subject matter while tenor refers to the interlocutors involved in the speech event or situation. The third, mode, which means channel has no relevance in this inquiry. Between field and tenor, however, the latter has greater relevance or explanatory power regarding English language use. The determining factor is the kind of people involved in a particular speech event or situation, and the kind of situation, that is, whether formal or informal.

    In more formal settings, for example, classroom, offices of college officials and top-echelon, University executives, students "step their best foot forward" by using English. In informal settings like jeep, dormitories and the like, they do not feel obliged or compelled to use the English language. In fact, to do otherwise is to invite ridicule or such harsh criticisms as "being affected," "being a show-off," "pretending what one is not."

3. Generally, the respondents' English language learning orientations were instrumental. The responses were led by passing their subjects in the university since almost all of the subjects are taught and written in English and for future careers especially that most of the jobs today require knowledge and proficiency in English. Most, if not all, of the students view English as a school subject that they need to master--grammar, accent, and vocabulary--for them to pass the class and find a job. It should be emphasized that English is not just a pen and paper activity. These students' awareness need to be raised by supplying them with information about the history of the spread of English, the current status of the English language, and its native and nonnative varieties. This way, student can have a better understanding of the English language and the purpose of learning it.

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EXTENSIVE READING: ITS EFFECTS TO LEARNERS' GENERAL LANGUAGE COMPETENCE

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Abstract: This study explores the objectives, effects, and drawbacks of a semester-long Extensive Reading program among Thai university students. The extensive reading program was piloted as a means to develop reading fluency and general language competence. Participants are emerged in constant reading and get familiar with long English texts to improve reading proficiency. Twenty-five students from Thai university participated in this semester-long project in order to enhance their English communication skills through reading. Students were required to read at least 3,000 headwords each week in 10 consecutive weeks following graded reading materials as a standard set for this program. Also, they were required to submit a weekly book report and give oral report on an alternate basis. Students read books based on the chosen genres starting with beginner to fluent level. Several positive impacts were observed including improvement on the reading ability and fluency as well as development in reading habit. Despite some drawbacks, student feedbacks showed the program motivated the participants and served as a springboard to develop communication skills in English.

INTRODUCTION

In most EFL classes, reading is given greatly importance due to the fact that it is an important source of language learning. Having EFL learners surrounded with large amount of reading materials and images around allow them to recognize meaning from the texts and further facilitate learning the complex nature of second language. Research shows educated native speakers of English learn most of their vocabulary through reading. Likewise, non-native speakers could have the same benefit of acquiring such knowledge by reading effectively. Reading will definitely bring their minds in the immense nature of the language, its uses and functions that will make learning much easier.

Language instructors begun to consider teaching reading as a forefront of educational agenda by creating systematic reading program to challenge readers and motivate them to become better readers. The emergence of reading programs such as extensive reading, readers' theaters etc. gain positive impact on the overall language improvement of the students. Students showed encouraging result in terms of their reading ability and improved reading habit as well as increased knowledge in vocabulary, semantics and syntax. Breaking out from traditional pedagogy initially focusing on mastering the rules before reading freely and extensively to exposing them to rich, relevant language that can heighten motivation to read has expanded to improve learners' reading skills more holistically.

Meanwhile, several reading researches conducted with Thai high school and university students revealed that Thai students have difficulties in reading in English (Jamornmarn & Ruangtakul: 1995; Sutta: 1994; Wiruhayan: 1987; The Department of Educational Techniques: 1995; Rattanapinyopong: 1983). The reading problem faced by most EFL learners is the difficulty to recognize the meaning of the words in context (Asraf and Ahmad (2003). This is due to lack of knowledge on vocabulary and sentence structure with reading texts (Adunyarittigun, 2002) and lack of appropriate reading strategies (Chuenta, 2002). Similarly, from the study conducted among Thai students revealed that they had problems in three areas of the reading test particularly sentence structure, vocabulary and reading comprehension (Chawwang,2008). Readers who faced of such difficulties obstruct their reading success.

The extensive reading program was launched to overcome reading problems faced by Thai university students and improve the overall language ability. More specifically, with less-regard-to- reading sort of culture, students tend to impede learning and expand their knowledge besides classroom learning. This could hinder students'

opportunity to explore the overall facet of learning a second language through making use of vast source of information available in and outside the premises of school.

The present study explores the objectives, effects, and drawbacks of a 10-week long Extensive Reading program among Thai university students. The Extensive Reading Program was piloted in the second semester of 2014-2015 as a means to examine further and develop the project in the following years as well as to provide opportunity for students to build up reading habit and expand their knowledge and awareness of life from the story books. This project aimed to foster student's reading fluency, develop a reading habit and build their vocabulary, increase comprehension skills, interpretation and motivation through reading English fiction and non-fiction story books. Students were required to read at least 3,000 headwords each week in 10 consecutive weeks following graded reading materials as a standard set for this program. Also, they were required to submit a weekly book report and do an oral report on an alternate basis. Students read books based on the chosen genres starting with beginner to fluent level; however depending if they felt ready to read higher level graded books.

LITERATURE REVIEW

Second language acquisition occurs in the process of input and interaction. Krashen (1981) believes that a person acquire both learning and acquisition of second language through "intake" of formal and informal environments. The wide range of information in and out of the classrooms cultivates knowledge in the use of a target language in a broader dimension. As an advocate of input-hypothesis in second language acquisition and learning, Krashen states that "*learners progress in their knowledge of the language when they comprehend language input that is slightly more advanced than their current level*". By supplying "*comprehensible input*" that learners are ready to intake not insisting language acquisition to occur and expect immediate transfer of language could rather take in effect. Reading is a form of supplying meaningful "input" to acquire new language. Elley (1991) states that through reading, significant positive effects on learners' vocabulary, grammar, and writing are observed. Readers constantly immerse in a complex cognitive processing of new ideas to get meaning from the texts. It involves interaction between the readers and the texts for comprehension and interpretation. Papalia (1987);Hosenfeld (1979) believe that under normal circumstances, readers use strategies while attempting to grasp the meaning of the texts; however the comprehension skill level varies depending on the level of the reader's interest on the given passage. Also, to further the reading ability, ESL teachers should provide among the readers the opportunity to interact with each other and share what they discover from the chosen topics. Instructors act as an aid to facilitate discussion, unlock difficulties in vocabulary etc. and demonstrate the interpretation of the texts using various reading strategies. In this way, acquiring skills in second language given in a contextualized meaningful environment as well as more favorable condition to learners in terms of choosing the topic etc. brings positive effect on the reader's overall language skill.

In view of the latter principles, extensive reading passed both criteria by not only providing a vast quantity of linguistic input (Bochner and Bochner,2009) but also a low-level of anxiety environment because it promotes reading for pleasure at their own "level" (Krashen, 1981). Extensive reading as defined by the renowned advocate of this study states that it is "*an approach to the teaching and learning of second language reading in which learners read large quantities of books and other materials that are well within their linguistic competence*" (Day & Bamford, 1998, p.9). Students choose the reading texts that they enjoy reading at their comfort level for overall understanding (Day and Bamford, 2002). The way to learn reading is to read and read more and because materials are not difficult, students become motivated to read thus resulting improved language ability. Through extensive reading, students can increase their vocabulary, enhance writing skills and oral fluency and develop good reading habits (Richards & Schmidt, 2002).

There are numerous benefits of extensive reading. From the "book flood" study conducted by Elley (1991), the most notable result found was the improvement of the student's writing skill. Overall findings shows increase in the *language use*, *language knowledge* and academic performance. It develops positive attitude towards learning the target language and motivation to study the language (Bamford, 2004).

METHODOLOGY

The participants of this study were 25 Thai university students enrolled in the second program of Intensive English course during the school year 2014-2015. They are from international program where all major courses are taught in English. The entire English program is run throughout the course of two semesters to improve the students' four skills in English at greater rate. Students come from mixed English language ability and are divided into two levels. Reflecting on the result of the placement test given at the start of the program, students' level of reading skill is found to be low. In the process of implementing extensive reading program, students were required to read graded books weekly and must read 3000 headwords within the course of 10 weeks.

Each week students chose from our mini library stocked with all levels of graded books from fiction to non-fiction genres. Each were provided data sheet to write in every books they borrowed including the number of headwords. All participants started at elementary level and progressed to higher level whenever they felt ready to do so. To avoid cheating, students were required to write a book report and a short summary of each book read throughout the week. During regular classes, students were given 30 minutes to read silently however if some were not able to finish they can take it home. The following day, students were picked randomly to give an oral report and short discussion as well.

This research used quantitative and qualitative method to describe the effects and drawbacks of the extensive reading project among Thai university students with mixed abilities. The researcher utilized systematic data recordings to track students' readings per week including information about the title and level of the books borrowed and specific and number of headwords per book to quantify data accordingly. Qualitatively, the researcher used observation and diary to record every session that constituted to the overall language abilities of the participants Also, students were asked to give feedbacks on the strengths and weaknesses of the project at the end of the program in the form of questionnaire and individual interviews. The findings and data suggest students' response toward the overall organization of the project and how they incorporate and appreciate the project for their development in their reading skills.

FINDINGS AND DISCUSSION

Learning Objectives

At the beginning of the project, teacher conducted a class orientation on how to go through the project stating the objectives and learning expectations. Basically, this project aims to increase the reading fluency and overall language ability of the students. In order to facilitate these, teacher provides graded books that contain easy-to-understand level of vocabulary words to encourage poor readers. Graded books have six levels from beginner to most fluent level.

Beginner	Red (up to 300 headwords)
Elementary	Orange (up to 800 headwords)
Intermediate	Yellow (up to 1500 headwords)
Upper Intermediate	Green (up to 2400 headwords)
Advanced	Blue (up to 4500 headwords)
Fluent	Black (non-graded material)

Students were required to read 3000 headwords per week starting from beginner level up to fluent level. In ten weeks, they were required to read from each level with total 30,000 headwords. The data below shows that all levels except for level 6 students were able to read and level 5 got the highest average. The average for each student read 24,916 headwords in ten weeks which has a total percentage of 83.05%. The objective to require students to read 30,000 words was not achieved 100% however, 83.05% is not bad.

Average Headwords Students Read

Book Levels	Total Books	Total Headwords	Average
Level 1	356	103,200	**4,128**
Level 2	94	55,100	**2,204**
Level 3	159	185,200	**7,408**
Level 4	3	2,400	**96**
Level 5	95	277,000	**11,080**
Level 6	0	0	**0**

Total Headwords 622,900	24,916 headwords/ student	**83.05%**

Addressing Reading Problems

At the onset of this project, students were required to start beginner/starter level books and expected to read at least up to advanced level. As students progress, it was observed that they experience reading difficulties particularly on understanding vocabulary and ability to comprehend texts. To address this problem, students went series of reading interventions. Reading interventions used were pair-reading and oral reading in class. Those better readers are paired with poor readers to act as a helper/model so to assist reading problems. Also, teacher modeled reading using think-aloud strategy to unlock students' reading difficulties and provided reading exercises in class to facilitate students' reading comprehension skills. Towards the end of the project, as students were constantly exposed to the language, their vocabulary and level of comprehension increased. This not only has a great impact on their reading but also on the quality of writing and speaking.

Observations on the Students' Speaking

Extensive reading helped students improve their speaking skills. They tend to speak more during group sharing and discussion about interesting stories they read. Students used new words to describe particular scenes and share opinions about the characters and the plot of the stories. During class reporting, when students were asked to share about the most interesting book they read in a week, they showed a high level of confidence and excitement. Some days we spent an hour or so discussing some points in the story, its relevance to life and discuss moral lessons. Some tried to convey their stories in English, however it couldn't be avoided that a help in translation was needed. Low level students tend to rely on their friends for translation especially for difficult words. Later though, they become more involved in discussion and their level of confidence was getting better. Thus, extensive reading has a great impact to improve the students' speaking ability.

Observations in the Students' Writing

Throughout the course as students required to write a summary of the readings and comments, their writing skills has greatly improved. The researcher used a book review rubrics as an instrument to assess students' writing improvement. The rubric is limited to evaluate students' writing according to the following three domains which include writing a summary, mechanics and spelling. From the table as shown below, there is a 30% overall improvement in their writing between pre and post writing scores. Many researches prove the established link between reading and writing. Through reading, we get exposed to the language and use them in writing and speaking (Hoey, 2005). Additionally, the "comprehensible input" extensive reading provides for readers establishes their knowledge about the language; its form and functions. Thus the way to learn the language is to get a massive and repeated exposure to its context.

Percentage of Students' Writing Improvement

Writing Output	Pre	Mid	Post
Percentage (Actual/Perfect Score)	31%	46%	61%
Variance	0%	15%	30%

CONCLUSIONS

The aim of this study is to explore the learning objectives, its effects and drawbacks of extensive reading using graded books to the overall language competence of second language learners. Extensive reading has proved to develop the vocabulary, reading, writing and speaking skills (Elley, et.al). Although there were drawbacks especially on the early part with regards to word recognition and vocabulary, however it was seen as a way of learning new words essential in reading.

Numerous learning outputs in using extensive reading evident throughout the project. Firstly, students regard reading as an important skill for academic success. They realized their need to increase their work knowledge and improve their English in general. By reading, they can gain useful vocabulary and improve their reading speed. And since, students determine their choice of what books to read, learning becomes fun and easy. Secondly, extensive reading has a positive effect on the reading motivation. All stated that their reading habit has increased better compared their previous experience in English classes. They tend to read more books they enjoy reading and read much more and more. Gains in extensive reading truly encompasses beyond learning the language objectively. Finally, students develop English skills through teacher giving of feedbacks and interventions to address reading problems. Reading problems that include students' lack of comprehension and retention, poor vocabulary and poor context reading skills can be addressed with teachers' support. During the reading period, students cannot sustain reading when they encounter difficult words in a context and obstructs their understanding. So, the teacher keeps an eye of the students and provides scaffolding to address problems right on. The benefits of extensive reading push students become effective readers and efficient in the target language.

Extensive reading using graded books is one of the many ways to introduce ER in ESL classes. It is important that the books are up-to-date and enough for all especially on the genres that students are interested to read. However, it is as useful if students perhaps can choose readings like articles from different contents to read and share in the class. They can choose topics that they see online or read from books according to their interest. As long as you keep students read with excitement and motivate them to read more in English can be a good tool to achieve the goal.

We are aware of the effort it requires teachers to prepare and organize extensive reading in an ESL classroom but it is worth the effort to see the result to the students.

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FACTORS INFLUENCING STUDENTS' ATTITUDE AND PERCEPTION TOWARD "WORLD CULTURE COURSE" – A CASE STUDY

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Abstract: In the era of increasing globalisation, the world communities cannot sidestep the influence of cultural globalisation. Today's widely perceived globalisation, which is based mostly upon economic aspects, does also bring direct and indirect influences to the nations' culture giving a new shape to their cultural perception. This study is an effort to discuss how an undergraduate course in world culture offered at Universiti Malaysia Terengganu (UMT) develops the learning and cultural understanding of its students. The course on global culture, however, provides a unique format for students to learn about other cultures without travelling. Together with their peers at UMT, students from two international partner universities, namely East Carolina University and the University of Namibia communicate each other through live video conferencing and interactive chat technology. Partner universities conduct classes during a semester in a way, so each culture is partnered with two other cultures. Students discuss topics ranging from college life, cultural traditions and family, and the meaning of life and religion to stereotypes and prejudices. With data collected through a structured questionnaire distributed to all 12 students, who took the course at UMT in the preceding academic semester, the study specifically evaluates and analyses their learning and perception toward the course, and discusses the implications of empirical results at local, national, and international levels. Upon collecting data using a random sampling technique, descriptive statistics such as frequency, mean, and standard deviation has been calculated for all 22 variables in the original questionnaire. The one sample t-test has then been employed for all the variables to see whether there is any significant difference between the actual and observed responses provided by the students concerning their learning and perception toward the course. However, the empirical results show that this course creates awareness, sense of appreciation and helps students in increasing their understanding and tolerance of global cultural diversity. The study also finds that Malaysian culture offers less freedom compared to USA culture. However, the experiment has shown that undertaking the world culture course does not divert the students from their culture rather it causes a fundamental shift in their views and values of the world culture as a universal sustainable culture.
Keywords: World culture, learning without travelling, attitude, perception, and Universiti Malaysia Terengganu.

INTRODUCTION

Universiti Malaysia Terengganu (UMT) is one of the public universities in Malaysia. With the vision to be an institution that generates, disseminates and applies innovative knowledge and a catalyst for the development of progressive individuals and sustainable environment, it was formerly known as University College of Terengganu (KUT) in 1999. It is also committed to going ahead and progress in parallel with the nation's vision 2020. The founding of the UMT, however, can be traced back to 1979 when the Centre for Fisheries and Marine Science of another leading public university, namely Universiti Putra Malaysia (UPM) was founded in UMT's current place. It was later renamed University Putra Malaysia Terengganu (UPMT). Since its establishment, UPMT has undergone a significant transformation from a branch campus into an emerging and highly successful public institution of higher learning. It is offering a broad range of undergraduate and postgraduate programs as well as excelling in Research and Development in the fields of Management and Economics, Science and Technology, Maritime Studies and Marine Science, and agro technology and Food Science. UMT's campus is strategically located on the shore of Terengganu facing the South China Sea. It now has four faculties such as Faculty of Management and Economics, Faculty of Science and Technology, Faculty of agro technology and Food Science, and Faculty of Maritime Studies and Marine Science. It also has three research institutes such as Institute of Oceanography, Institute of Tropical Aquaculture, Institute for Marine Biotechnology, which are providing nationwide consultancy services and offering postgraduate degrees in their respective fields.

Offered in the Faculty of Management and Economics, UMT's World Culture course provides a unique format for students to learn about other cultures without travelling. In association with two international partner universities, namely East Carolina University (ECU) and University of Namibia (UNAM), students from three universities concurrently communicate with their peers through live video conferencing and chat technology. Partner universities swap in a round robin fashion during a semester, so each culture is partnered with two other cultures, one at a time for seven weeks each. Students discuss topics ranging from college life, cultural traditions and family, and the meaning of life and religion to stereotypes and prejudices. They learn about the values and lifestyles of contemporary and historical cultures throughout the world as a means of understanding diverse approaches to life and as a catalyst for reflecting on their customs and choices. As a result of mutual dialogue and interaction, students become more culturally aware and develop essential skills necessary to becoming a more responsible global citizen. This study is an effort to empirically identify and critically discuss the factors that potentially influence students' attitude and perception toward World Culture course, which was offered in Malaysia in a joint effort by Universiti Malaysia Terengganu, East Carolina University and the University of Namibia.

WORLD CULTURE – A BRIEF THEORETICAL FRAMEWORK

The word "culture" has different meanings in different contexts and environments. In 1952, Alfred Kroeber and Clyde Kluckhohn compiled a list of 164 definitions of "culture" in Culture: A Critical Review of Concepts and Definitions (Kroeber & Kluckhohn, 1952). As compiled from Wikipedia, however, the word "culture" is most commonly used in three basic senses. These are (1) excellence of taste in the fine arts and humanities knew as high culture, (2) an integrated pattern of human knowledge, belief, and behavior that depends upon the capacity for symbolic thought and social learning, and (3) the set of shared attitudes, values, goals, and practices that characterize an institution, organization or group. The concept of culture was first emerged in 18th century in Europe while it meant a process of cultivation or improvement, as in agriculture or horticulture. In the 19th century, it came to refer first to the betterment or refinement of the individual, especially through education, and then to the fulfilment of national aspirations or ideals. In the mid19th century, some scientists used the term "culture" to refer to a universal human capacity.

In the 20th century, "culture" emerged as a concept central to anthropology, encompassing all human phenomena that are not purely results of human genetics. Specifically, the term "culture" in American anthropology had two meanings. Such as (1) the evolved human capacity to classify and represent experiences with symbols, and to act imaginatively and creatively; and (2) the distinct ways that people living in different parts of the world classified and represented their experiences, and acted creatively. Following World War II, the term became necessary, even though with different meanings, in other disciplines such as sociology, cultural studies, organisational psychology and management studies. Nowadays, disciplines such as business, economics, and education are increasingly discussing the issues and contents from the perspectives of culture.

CULTURE THEORY

The word 'Culture' refers to the arts and other manifestations of human intellectual achievement collectively or the ideas, customs, and social behaviour of a particular people or society (Oxford English Dictionary). Stacey et al., (2000) speculated the culture as a form of basic processing which enables the correlations and dissimilarities that mobilise the nature to produce a specific effect. National cultures have been described by Prof Dr Hofstede (1973, 1991, and 2010) as six dimensions (6-D). These are: 'power distance (PDI), Individualism vs. collectivism (IDV), Masculinity vs. Femininity (MAS), Long-term orientation vs. short-term orientation (LTO), Uncertainty Avoidance (UAI) indulgence versus restraint (Hofstede, 2011)'.

Culture theory is primarily originated from the branch of anthropology and semiotics that seeks to define the practical concept of culture in operational and/or scientific terms. In the 19th century, "culture" was used by some to refer to a broad range of human activities, and by others as a synonym for "civilization". In the 20th century, anthropologists began theorising about culture as an object of scientific analysis. Some used it to distinguish human adaptive strategies from the mostly instinctive adaptive strategies of animals, including the adaptive strategies of other primates and non-human hominids, whereas others used it to refer to symbolic representations and expressions of human experience, with no direct adaptive value. Both groups understood culture as being definitive of human nature.

According to many theories that have gained wide acceptance among anthropologists, culture exhibits the way that humans interpret their biology and their environment. According to this point of view, culture becomes such an integral part of human existence that it is the human environment, and most cultural change can be attributed to human adaptation to historical events. Moreover, given that culture is seen as the primary adaptive mechanism

in human beings and takes place much faster than human biological evolution, most cultural change can be viewed as culture adapting to itself.

Although most anthropologists try to define culture in such a way that it separates human beings from other animals, many human traits are similar to those of other animals, particularly the characteristics of other primates. For example, chimpanzees have big brains, but human brains are larger than chimpanzees. Similarly, bonobos exhibit complex sexual behaviour, but human beings exhibit much more complex sexual behaviours. As such, anthropologists often debate whether human behaviour is different from animal behaviour in degree rather than in kind; they must also find ways to distinguish cultural behaviour from sociological behaviour and psychological behaviour.

CROSS-CULTURAL COMMUNICATION: A BRIEF LITERATURE REVIEW

Cross-cultural communication is a field of study that looks at how people from differing cultural backgrounds communicate, in similar and different ways among themselves, and how they endeavour to communicate across cultures. However, the study of cross-cultural communication is fast becoming a global research area. As a result, cultural differences in the study of intercultural communication can already be found.

In years during and preceding the Cold War, the United States economy was largely self-contained because the world was polarised into two separate and competing powers: the east and the west. However, changes and advancements in economic relationships, political systems, and technological options began to break down old cultural barriers. Business transformed from individual country capitalism to global capitalism. Thus, the study of cross-cultural communication was initially found within companies and the government both seeking to expand globally. Businesses began to offer language training to their employees. Companies found that their employees were ill-equipped for overseas work in the globalising market. Programs developed to train employees to understand how to act when abroad. With this also came the development of the Foreign Service Institute, or FSI, through the Foreign Service Act of 1946, where government employees received training and prepared for overseas posts (Rogers, Hart & Miike, 2002). The implementation of a "world view" perspective in the curriculum of higher education was then proposed by Professor Marvin Bartell in 2003 in his article titled "Internationalization of Universities: A University Culture-based Framework." In 1974, the International Progress Organization, with the support of UNESCO and under the auspices of Senegalese President Léopold Sédar Senghor, held an international conference on "The Cultural Self-comprehension of Nations" (Innsbruck, Austria, 27-29 July 1974). It called upon United Nations member states "to organise systematic and global comparative research on the different cultures of the world." However, it also suggested, "to make all possible efforts to a more intensive training of diplomats in the field of international cultural co-operation ... and to develop the cultural aspects of their foreign policy" (Hans K. 1978).

In the past decade, there has become an increasing pressure for universities across the world to incorporate an intercultural and international understanding and knowledge into the education of their students. International literacy and cross-cultural understanding have become critical to a country's cultural, technological, economic, and political health. It has become essential for universities to educate, or more importantly, "transform", to function efficiently and comfortably in a world characterised by close multi-faceted relationships and permeable borders. Students must possess a certain level of global competence to understand the world they live in and how they fit into this world. This level of global competence starts at ground level- the university and its faculty- with how they generate and transmit cross-cultural knowledge and information to students (Bartell, M. 2003).

Cross-cultural communication tries to bring together such a relatively unrelated areas as cultural anthropology and established areas of communication. Its core is to create and understand how people from different cultures communicate with each other. Its charge is also to produce some guidelines with which people from different cultures can better communicate with each other. Cross-cultural communication, as in many scholarly fields, is a combination of many other areas. These areas include anthropology, cultural studies, psychology and communication. The field has also moved both toward the treatment of interethnic relations and toward the study of communication strategies used by co-cultural populations, i.e., communication strategies used to deal with the majority or mainstream communities.

The study of languages other than one's own cannot only serve to help us understand what we as human beings have in common, but also assist us in understanding the diversity which underlies not only our languages, but also our ways of constructing and organizing knowledge, and the many different realities in which we all live and interact. Such understanding has profound implications on developing a critical awareness of social relationships. Understanding social relationships and the way other cultures work is the groundwork of successful globalisation business efforts.

INCORPORATING CROSS-CULTURAL COMMUNICATIONS INTO UNIVERSITY PROGRAMS

With the increasing pressures and opportunities of globalisation, the incorporation of international networking alliances has become an "essential mechanism for the internationalisation of higher education" (Teather, 2004). Many universities from around the world have taken great strides to increase intercultural understanding through processes of organisational change and innovations. In general, university operations revolve around four broad dimensions which include: organisational change, curriculum innovation, staff development, and student mobility (Rudzki, 1995). Ellingboe (1998) emphasises these four major dimensions with his specifications for the internationalisation process. His specifications include: (1) college leadership, (2) faculty members' international involvement in activities with colleagues, research sites, and institutions worldwide, (3) the availability, affordability, accessibility, and transferability of study abroad programs for students, (4) the presence and integration of international students, scholars, and visiting faculty into campus life, and (5) international co-curricular units (residence halls, conference planning centers, student unions, career centers, cultural immersion and language houses, student activities, and student organizations).

Above all, universities need to make sure that they are open and responsive to changes in the outside environment. For internationalisation to be fully effective, the university (including all staff, students, curriculum, and activities) needs to be current with cultural changes, and willing to adapt to these changes (Cameron, 1984). As stated by Ellingboe (1998), internationalisation "is an ongoing, future-oriented, multidimensional, interdisciplinary, leadership-driven vision that involves many stakeholders working to change the internal dynamics of an institution to respond and adapt appropriately to an increasingly diverse, globally focused, ever-changing external environment." New distance learning technologies, such as interactive teleconferencing, enable students located thousands of miles apart to communicate and interact in a virtual classroom (Bartell, 2003).

MATERIALS AND METHODS

SOURCES OF DATA AND SAMPLE DESIGN

This study has used primary data collected through a set of a structured questionnaire distributed amongst all 12 UMT students who have already completed the world culture course in the preceding academic semester. The lecturer of the course has sent out the questionnaire to every student via email. Students were requested to fill in the questionnaire and then return it to the teacher within two weeks. Since all students responded positively to the survey request made by their respected lecturer, the sampling technique used in the study is considered random.

TECHNIQUES FOR ANALYSIS

At the first stage of data analysis, descriptive statistics such as frequency, mean, and standard deviation have been calculated for all 22 variables in the original questionnaire. The one sample t-test has then been employed for all the variables to see whether there is any significant difference between the actual and observed responses given by the students concerning their learning and perception toward the course. In fact, we have drawn a random sample from the student population and then compared the sample meant with the population mean and made a statistical decision as to whether or not the sample mean is different from the student population. One of the essential requirements for the one sample t-test is that the sample size should be less than 30. With a sample was taken from 12 student populations this study clearly fulfils such requirement. Some other essential requirements for one sample t-test includes the variables should be distributed, samples drawn from the population should be random, cases of the samples should be independent, and population mean must be known, which have also apparently been fulfilled in the present study. For every variable, however, both null hypothesis and alternative hypothesis were tested, and the mathematical forms of both hypotheses are shown below:

$$H_0 : \mu_1 = \mu_2$$
$$H_1 : \mu_1 \neq \mu_2$$

In one sample t-test, null hypothesis assumes that there are no significance differences between the population mean and the sample mean while the alternative hypothesis assumes that there is a significant difference between the population mean and the sample mean. Hence, the calculation of the standard deviation for one sample t-test was done using the following formula:

$$S = \sqrt{\frac{\sum (X - \overline{X})^2}{n-1}}$$

Where, S = Standard deviation for one sample t-test, $\overline{X}$ = Sample mean, and n = number of observations in the sample.

The calculation of the value of one sample t-test was the computed using the following formula:

$$t = \frac{\overline{X} - \mu}{S}\sqrt{n}$$

Where, t = one sample t-test and μ = population mean.

All the above statistical tests and estimations were conducted using computer software SPSS version 15.0.

5.0 RESULTS AND DISCUSSION

Table 1: Responses of students to whether the course has created their awareness of global cultural diversity.

		Frequency	Percent	Valid Percent	Cumulative Percent	N	
Valid	N0	1	8.3	8.3	8.3	Mean	.9167
	Yes	11	91.7	91.7	100.0	Std. Deviation	.28868
	Total	12	100.0	100.0		Std. Error Mean	.08333

All the respondents were asked whether the course has created their awareness of global cultural diversity course. However, out of all, 91.7% students perceived the course positively contributed to their knowledge while only 8.3% students observed against it.

Table 2: T-test results are showing differences in responses given by students on awareness of global cultural diversity.

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Awareness of Global Cultural Dimensions	-1.000	11	.339	-.08333	-.2667	.1001

Since two-tailed t-test generated a non-significant probability value (P>0.01) so, it is apparent that students' responses of whether their awareness of global cultural diversity course do not differ significantly. This just means that almost all the students perceived the course positively contributing to their knowledge. This could be because students are learning world cultures, especially the cultures of both developing and developed the world while undertaking their core undergraduate studies in Malaysia. This gives them the opportunity to interact with their counterparts from those countries and also learn from them not only about those cultures but also about many other social and educational issues. This learning through active interaction has undoubtedly contributed to their awareness of global culture course as evidenced by our empirical results obtained through paired-samples t-test. The same finding was also obtained by Murad (2015, p. 4) in the case of Bangladesh where he found that most students consider any foreign culture course as positively contributing to their learning and getting exposure to international culture.

Table 3: Responses of students to whether the course has increased their understanding and tolerance of global cultural diversity.

		Frequency	Percent	Valid Percent	Cumulative Percent	Std. Deviation	Std. Error Mean
Valid	Yes	12	100.0	100.0	100.0	.00000	.00000

In response to whether the course has increased their understanding and tolerance of global diversity, all the respondent students agreed that this course has positively contributed to their understanding and tolerance toward global cultural diversity. As defined by Endacott and Bowels (2013) "Culture" means the behaviours, beliefs, values, traditions, institutions, and ways of living together of a group of people. However, students may believe that this course has replenished their thoughts of culture by a thoughtful discussion of the norms, beliefs,

values traditions of other students of the participating universities. While undergoing this course they might also have had enormous opportunities to share and unfold numerous new aspects of global cultures. They also considered that knowledge of the world culture is imperative for their future. Gregg and eBrary (2007, p 4)) also found the same context where they pronounce that intercultural understanding acts as a foundation for successful future in study abroad and international business as well. However, respondents are reasonably agreed that the outcomes of the global culture course helped them in building their confidence to study abroad or work in cultural diversity. Onyemenem and Jones (1988) also found that intercultural adaptation is a crucial part of a student pursuing an education in global cultural diverse society.

T-test for the above responses cannot be computed because the standard deviation is 0.

Table 4: Responses of students to whether the course has developed their sense of appreciation of global cultural diversity.

		Frequency	Percent	Valid Percent	Cumulative Percent	Mean	Std. Deviation
Valid	Yes	12	100.0	100.0	100.0	.00000	.00000

Students were asked whether the course of global cultural diversity has developed their sense of appreciation of world cultural diversity. The response shows that 100% of the total respondents considered that this course had developed their sense of appreciation of global cultural diversity. It may because they comprehend this course as to lower their sensitivity regarding foreign cultures. They might also think that the international cultural diverse course has immensely influenced their thoughts and beliefs. Klak and Martin (2003 p. 462) stated that to respond to the sensitivity of the students on global cultural issues universities can undertake some celebration intending to representing the diversity of world cultures. However, students understood that by offering the world culture course, universities bestow the best to address the sensitivity of students to global cultures.

T-test for the above responses cannot be computed because the standard deviation is 0.

Table 5: Responses of students to whether there is more freedom in the Malaysian culture compared to the cultures of the USA and Namibia.

		Frequency	Percent	Valid Percent	Cumulative Percent		N
Valid	No	9	75.0	75.0	75.0	Mean	.2500
	Yes	3	25.0	25.0	100.0	Std. Deviation	.45227
	Total	12	100.0	100.0		Std. Error Mean	.13056

When the students were enquired whether there is more freedom in the Malaysian culture compared to the USA and Namibian culture, the majority of the respondents (75%) perceived that Malaysian culture offers less freedom compare to the USA and Namibian culture. On the other hand, 25% of the total respondents pronounced the opposite, and they are of Malaysian culture.

Table 6: T-test results are showing differences in responses given by students on comparative cultural freedom in the three countries.

					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Freedom in Malaysian culture	-5.745	11	.000	-.75000	-1.0374	-.4626

As the 2-tailed t-test created a significant probability value ($p \leq 0.1$), so it is indicated that the students' responses to relative cultural freedom in the three countries differ significantly. It could be just because the majority of the participating students live by Malaysian culture which is mostly dominated by Islamic laws & values in which it ties them in a more conservative way. Whereas, they perceived that culture in the USA and Namibia is more liberal in comparison with Malaysian culture. Respondent students might also have strived for freedom during their lifetime at any stage. Therefore, they do not think Malaysian culture offers more freedom in compare to the USA. Cultural freedom is also sometimes resolute by the socio-economic and political conditions

of that particular location. Usually, people think the way people live and merge on the existing lifestyle. According to Wilson et al., (2014 pp. 1-5) when people think inward it puts them in default-mode processing, and it has now been the focus of lots of attention in human behaviour. Human Rights Watch (2015) reported that Malaysian citizens enjoy limited freedom which was indicated by the quote of Yap Swee Seng, former executive director of Suara Rakyat Malaysia, (Suaram), Kuala Lumpur, April 14, 2015,

> "They are creating a culture of fear. If you engage in any talk of public interest, the police may come to your house; you may be arrested, taken to the police station, remanded. Even members of Parliament are treated that way."

However, the Malaysian culture shows the most relevant characteristics of a collective society which is coinciding collectivism, one of the sixes, dimension of Prof Dr Hofstede's national culture theory. On the other hand, USA culture reveals the individualism dimension in great extent.

Table 7: Responses to which culture has more freedom by students who indicated Malaysian culture does not have more freedom.

		Frequency	Percent	Valid Percent	Cumulative Percent	Mean	Std. Deviation
Valid	USA	10	83.3	100.0	100.0	1.0000	.00000
Missing	System	2	16.7				
Total		12	100.0				

Some of the respondent students have indicated that Malaysian culture does not have more freedom. They were asked which culture has more freedom. In response, all the respondent students ponder that the USA culture offers more freedom than Malaysia. The similar finding also can be obtained from Human Right Watch (2015) report on the freedom in Malaysia where the organisation has expressed their concern over massive human rights violation in Malaysia. Therefore, students do not think Malaysian culture offers more freedom but the USA. On the other hand, after exploring the culture and societies of USA during their coursework and their acquired lifetime knowledge, they have clearly observed that there is more freedom in the USA.

T-test for the above responses cannot be computed because the standard deviation is 0.

Table 8: Responses of students to whether culture plays a major role in their belief and living system.

		Frequency	Percent	Valid Percent	Cumulative Percent		N
Valid	No	1	8.3	8.3	8.3	Mean	.9167
	Yes	11	91.7	91.7	100.0	Std. Deviation	.28868
	Total	12	100.0	100.0		Std. Error Mean	.08333

In response to whether culture plays a significant role in their belief and living system. Amongst all the respondents, 91.7% students perceived that culture has an important role in their faith and lifestyle. Whereas, 8.3 % of the interviewees did not consider that culture plays an influential role in their belief and living system.

Table 9: T-test results are showing differences in responses given by students on the role of culture in their belief and living system.

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference Lower	Upper
Important role of culture in belief and living system	-1.000	11	.339	-.08333	-.2667	.1001

Since the two-tailed t-test generated a non-significant probability value (P>0.01) so, it is assumed that students' responses of whether culture plays an important role in their belief and living system do not differ significantly. The majority of the respondent students perceived that culture plays an important role in every sphere of their life. They realise that because of the interference of prevailing culture, they are to adjust themselves to the society. Although culture does not outline the belief and lifestyle, it has a substantial effect on knowledge &

living system. Faith and lifestyle with culture, in turn, build a society. Stroop (2011) finds that beliefs appeal people toward community mindedness because a person cannot live alone without a society.

Table 10: Responses of students to whether culture regulates how humans interact with the living world through practices, ethics, and philosophy.

		Frequency	Percent	Valid Percent	Cumulative Percent	Mean	Std. Deviation
Valid	Yes	12	100.0	100.0	100.0	1.0000	.00000

When the students were asked whether culture regulates how human interact with the living world through practices, ethics and philosophy, all the respondent students perceived that culture controls way to interact with the living world through practices, ethics and philosophy.

T-test for the above responses cannot be computed because the standard deviation is 0.

Table 11: Responses of students to whether a sustainable culture is one that reflects the living world.

		Frequency	Percent	Valid Percent	Cumulative Percent	N	
Valid	No	3	25.0	25.0	25.0	Mean	.7500
	Yes	9	75.0	75.0	100.0	Std. Deviation	.45227
	Total	12	100.0	100.0		Std. Error Mean	.13056

A total of 12 students were questioned to respond whether a sustainable culture is the one that reflects the living world. The majority (75%) of total respondent students believed that a sustainable culture is one that reflects the life world. On the other hand, a total of 03 (25%) students out of 12 disagreed with that.

Table 12: T-test results are showing differences in responses given by students on the fact that a sustainable culture is one that reflects the living world.

					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Sustainable culture reflects living world	-1.915	11	.082	-.25000	-.5374	.0374

However, the 2-tailed t-test was done, and it initiated a non-significant probability value ($p > 0.01$). It means the perception of the respondent students on the fact that a sustainable culture is one that reflects the living world does not differ significantly. It is because they firmly found that the culture which does not reflect the living world cannot sustain anymore. Culture is another form of social practices and social practices eventually lead to life. So it is important for them to have the knowledge and meaning of life that can motivate them in their social interactions. However, it ultimately becomes a concept of sustainable culture. Hansen (2015) also characterised the necessity for lifestyle changes as subjective wellbeing which includes pleasure, comfort, emotions, meaning of life and social relations. Meaning to say that culture that does not reflect the living world is not a sustainable culture.

Table 13: Responses of students to whether learning from world culture course diverted them from their culture.

		Frequency	Percent	Valid Percent	Cumulative Percent	N	
Valid	No	7	58.3	58.3	58.3	Mean	.4167
	Yes	5	41.7	41.7	100.0	Std. Deviation	.51493
	Total	12	100.0	100.0		Std. Error Mean	.14865

In replies to whether learning from world culture course diverted them from their culture, 53.8% of total responded students noticed that world culture course did not divert them from their culture. On the other hand, 41.7% of total responder observed that learning of the global culture course diverts them from their culture.

Table 14: T-test results are showing differences in responses given by students on the fact that learning from world culture course diverted them from their culture.

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Learning from World Culture course diverted from own culture	-3.924	11	.002	-.58333	-.9105	-.2562

In this regard to the fact that learning from world culture course diverted them from their culture, 2-tailed t-test reveals a significant probability value ($p \leq 0.01$). It means, students' respond to whether learning from world culture diverted them from their culture differs significantly. It is because there might have some student amongst the respondent students who had either the chance to expose into world culture previously or they discovered it as a need for a universal culture that causes them a noticeable diversion from their culture. According to Endacott and Bowels (2013), understanding demands parallel in thinking irrespective of the perceptions of culture and cultural universals. Nevertheless, another group of students found this course just a tool of learning other culture and did neither accept nor reject it. Therefore, the learning of world culture could not divert them from their culture. The perception of the all respondent students is very nearly opposite and different which has been proven by the empirical t-test result.

Table 15: Responses to whether knowledge of world culture is now richer by students who indicated that taking of the course diverted them from their culture.

		Frequency	Percent	Valid Percent	Cumulative Percent	Mean	Std. Deviation
Valid	Yes	4	33.3	100.0	100.0	1.0000	.00000
Missing	System	8	66.7				
Total		12	100.0				

Students' responses to whether knowledge of world culture is now richer by students who indicated that taking of the course diverted them from their culture, ultimately agreed that the world culture course had increased their knowledge of global culture immensely.

T-test for the above responses cannot be computed because the standard deviation is 0.

Table 16: Responses of students to whether learning from world culture course causes a fundamental shift in their views and values of the world culture.

		Frequency	Percent	Valid Percent	Cumulative Percent	N	
Valid	No	4	33.3	33.3	33.3	Mean	.6667
	Yes	8	66.7	66.7	100.0	Std. Deviation	.49237
	Total	12	100.0	100.0		Std. Error Mean	.14213

The question was asked whether learning from world culture course causes a fundamental shift in their views and values of the world culture. However, out of 12 students, a total of 8 students responded that learning from world culture course has caused a fundamental shift in their views and values of the world culture, whereas, four students disagreed with that.

Table 17: T-test results are showing differences in responses given by students on the fact that learning from world culture course causes a fundamental shift in their views and values of the world culture.

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Learning from World Culture course shifts in views and values of world culture	-2.345	11	.039	-.33333	-.6462	-.0205

Since two-tailed t-test generated a non-significant probability value (P≤0.05) so, it is evident that students' responses of whether learning from world culture course cause a fundamental shift in their views and values of the world culture do not differ significantly. It means that the majority of the students perceived that the course causes a fundamental shift in their views and values of the world culture. After studying this course, they know lot more about world culture which obviously refined their views & values in great extent. Now they find themselves more tolerant of another culture. However, some of the students did not perceive this course in that manner or they yet to notice any significant changes regarding their tolerance and acceptance of world culture.

Table 18: Responses of students to whether a truly sustainable culture must be place-specific, reflecting the natural landscape of its region.

		Frequency	Percent	Valid Percent	Cumulative Percent		N	
Valid	No	5	41.7	41.7	41.7	Mean	.5833
	Yes	7	58.3	58.3	100.0	Std. Deviation	.51493
	Total	12	100.0	100.0		Std. Error Mean	.14865

Students were asked to respond whether a genuinely sustainable culture must be place-specific, reflecting the natural landscape of its region. However, 41.7% of total respondent students considered that truly sustainable culture must not place specific, reflecting the natural landscape of its region. On the other hand, 58.3 % of total respondent students believed that a truly sustainable culture must be place-specific, reflecting the natural landscape of its region.

Table 19: T-test results are showing differences in responses to the fact that a truly sustainable culture must be place-specific, reflecting the natural landscape of its region.

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Sustainable culture must be place specific	-2.803	11	.017	-.41667	-.7438	-.0895

As the 2-tailed t-test generated a significant probability (p>0.1), so the responses of respondent students on the fact that a truly sustainable culture must be place-specific, reflecting the natural landscape of its region differ significantly. It may because a significant segment of those respondents might have discovered the sustainable culture as a universal culture. Therefore, they do not consider that the idea of a global culture cannot place oriented. The second group of respondent students underpins the cultural sustainably within a regional portrait. They might have understood the culture as the reflection of human necessities in a particular geographical location. In 1983, 'Brundtland Commission' defines sustainability that involves efforts to focus on meeting current human demands without conceding the ability of future generations to fulfil their needs (Scammon, 2012).

Table 20: Responses of students to whether they consider their culture 'sustainable'.

		Frequency	Percent	Valid Percent	Cumulative Percent		N	
Valid	No	2	16.7	16.7	16.7	Mean	.8333
	Yes	10	83.3	83.3	100.0	Std. Deviation	.38925
	Total	12	100.0	100.0		Std. Error Mean	.11237

In reply to the question to whether they consider their culture sustainable, a total of 10 students out of 12 respondent students believed that their culture is sustainable, meaning to say that their culture reflects the meaning of life. Whereas, rest of the 02 students out of the total 12 respondent students considered that their culture is not sustainable. Hofstede (1973) Long-term orientation vs. short-term orientation (LTO) index of Malaysia is 41 (itim, 2012). Higher LTO index proofs the link of culture to past with the current and future. It means people in Malaysian culture have strong attachment and respect towards their culture and traditions, and therefore, respondents strongly believed that their culture is sustainable.

Table 21: T-test results are showing differences of perception among students toward sustainability of their culture.

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Consider own culture sustainable	-1.483	11	.166	-.16667	-.4140	.0807

We can see that the 2-tailed t-test generated a non-significant probability value (p>0.1), so the perceptions of the respondent students towards sustainability of their culture do not differ significantly. It might be because the human being starts their life only knowing their culture and they always consider their culture is sustainable unless otherwise an acute exposure to another rich culture. This universal tendency of inner human thoughts is identified as 'ethnocentrism' (Tiandis, 2008). Campbell and Levine (1968) and Brewer and Campbell (1976) also found that ethnocentric people outline the customs and traditions of their culture as 'natural' and 'correct' and those of other cultures as 'unnatural' and 'immoral.' Ward et al., (2005, p. 269) also found that when people in cultural dilemma, there are some individuals who rejoin to the other culture but steadfast in their culture of origin.

Table 22: Responses of students to whether they took the course to share their culture with global students and to learn about their cultures.

		Frequency	Percent	Valid Percent	Cumulative Percent	Mean	Std. Deviation
Valid	Yes	12	100.0	100.0	100.0	1.0000	.00000

On asking of whether they took the course to share their culture with international students and to learn about their cultures, 100% of the students agreed that they choose the world culture course to learn the global culture and share their culture with international students.

T-test for the above responses cannot be computed because the standard deviation is 0.

Table 23: Responses of students to whether there was new information about their culture.

		Frequency	Percent	Valid Percent	Cumulative Percent	N	
Valid	No	3	25.0	25.0	25.0	Mean	.7500
	Yes	9	75.0	75.0	100.0	Std. Deviation	.45227
	Total	12	100.0	100.0		Std. Error Mean	.13056

Students were asked whether there was new information about their culture. In response, 25 % of the total respondent students found nothing new in this course about their culture, but on the other hand, 75% of the total respondent students believed that they had discovered new information about their culture.

Table 24: T-test results are showing differences on the fact that there was new information about their culture.

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
There was new information about own culture	-1.915	11	.082	-.25000	-.5374	.0374

Hence, the 2-tailed t-test created a significant probability value (p≤0.1), so it indicates that the students' responses to on the fact that there was new information about their culture differ significantly. Because the majority of the respondent students undertook this course to learn something new out of it, they investigated their culture in comparison with other culture and eventually they discovered their culture from a new perspective which they knew not before and however, it has ultimately enlarged their understanding of own

culture towards a new horizon. Besides, a small portion of the students did not undergo this course sparingly, and they just focused on global culture. As a result, they missed uncovering their culture through different windows.

Table 25: Responses of students to whether the taking of the course has increased their appreciation towards the Malaysian culture.

		Frequency	Percent	Valid Percent	Cumulative Percent	N	
Valid	No	2	16.7	16.7	16.7	Mean	.8333
	Yes	10	83.3	83.3	100.0	Std. Deviation	.38925
	Total	12	100.0	100.0		Std. Error Mean	.11237

Students were asked whether the taking of the world culture course has increased their appreciation towards the Malaysian culture. Out of 12 students, ten students considered that their appreciation towards the Malaysian culture had been increased because of undergoing this course. However, 02 students amongst the 12 respondent students did not agree that the world culture course has increased their appreciation towards the Malaysian culture.

Table 26: T-test results are showing differences of perception among students whether the taking of the course has increased their appreciation towards the Malaysian culture.

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Increased appreciation toward Malaysian or own cultures	-1.483	11	.166	-.16667	-.4140	.0807

Since the 2-tailed t-test generated a non-significant probability value ($p>0.1$), so the responses of the students whether the taking of the course has increased their appreciation towards the Malaysian culture do not differ significantly. The majority of the student enjoined their culture with global culture and got the idea of appreciating their culture in a new befitting manner. Perhaps, they have identified the new prospects in their culture while studying and comparing their culture with world culture. However, another group of students might have already known their culture in details and could not find anything new throughout this course.

6.0 CONCLUSION

Although, a small number of studies have been done on this topic, but this empirical research on global cultural course provides a sound conceptual context for understanding the global culture from different point of view. It is found that there are students who learn international culture but steadfast on their culture of origin. Another cluster renounces their culture while considering the USA culture offers more freedom than the Malaysian culture. We also found some of the students who always try to synthesis the best elements of both cultural traditions and become interceding persons. After careful interpretation of all the responses, it is determined that people in Malaysian culture have strong connection and respect towards their culture and traditions, and as a result, they firmly consider their culture is sustainable. Malaysian culture also demonstrates the most relevant characteristics of a collective society as it offers less freedom which lies with collectivism. On the other hand, USA culture reveals the individualism in great extent. Therefore, on a thoughtful appraisal of applicable exhibits, it is concluded that our findings are corresponding with the two main dimensions (Individualism vs. collectivism (IDV), and Long-term orientation vs. short-term orientation (LTO) of national culture dimensions developed my Prof Dr Hofstede. Therefore, it is evidenced that offering a global cultural course in University level is a real-world realisation where students can share their culture with a relatively large number of people around the globe whose culture differs significantly. This study conforming the finding of Gregg and eBrary (2007, p. 11) as well where they claim that intercultural understanding provides a unique platform for successful future both in education and business.

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FACTORS INFLUENCING THE DROPOUT RATE IN ALTERNATIVE LEARNING SYSTEM – ACCREDITATION AND EQUIVALENCY PROGRAM

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Abstract: Illiteracy and poverty were the worst adversary the Philippine government has been encountering. For many years, efforts and funds were expended by the government to alleviate the problem that affects mostly the underprivileged citizens of the country. In search for prompt gratification of their needs, children and youth struggle to keep up with schooling and tend to satisfy their immediate concern by dropping out of school. This research study aimed to look into the factors influencing the dropout rate in Alternative Learning System – Accreditation and Equivalency Program of the Department of Education (DepEd) in the Philippines. The result of this study was utilized in planning and developing a proposed responsive guidance program for the ALS learners. It was found out that majority of the reasons for dropping out from the program happened due to lack of interest and employment.

INTRODUCTION

Every Filipino has a right to free basic education, however, many Filipinos do not have a chance to attend and finish formal basic education. There are those who dropout from schools due to various external and internal reasons, while some do not even have schools in their communities. By the declaration in the 1987 constitution - *The State shall protect and promote the right of all citizens to quality education at all levels, and shall take appropriate steps to make such education accessible to all,* the government has vowed to eradicate illiteracy and make education reach every citizen. For decades, Philippines has been head to head with its battle with illiteracy and has been putting so much importance in the improvement of basic education as it entails the growth and development of the nation (Rodriguez, 2007).

Illiteracy was noted as the biggest obstacle that hampers the economic growth of a country. Southeast Asian and African countries, most especially, have been bombarded with economic crisis brought about by poverty which links to illiteracy. Philippines was tagged as one of the countries to have the highest poverty incidence rates in Southeast Asia. Amongst everyone, the Out-of-School Children (OSC), Out-of-School Youth (OSYs), and Out-of-School Adults (OSAs) were the most affected by poverty due to lack of educational opportunities created, however, by illiteracy itself (Apao et al., 2014).

To alleviate the issue, Alternative Learning System (ALS) was established to provide all Filipinos the chance to have access and complete their basic education in a way that fits their distinct situations and needs (DepEd, 2016). Alternative Learning System is a parallel learning system which combined non-formal education and informal sources of knowledge and skills (DepEd, 2016). It specifically targets the learning needs of school leavers, adults and other learners from marginalized groups who do not have access to formal education. Through ALS, those who are "deprived, depressed, and underserved" as described by the law will now be offered with education towards Accreditation and Equivalency (A&E) Test that may grant either elementary or high school diplomas (Arzadon and Nato, 2015). This test was developed by the Bureau of Non-formal Education (BNFE) and is administered yearly. It provides an alternative means of certification of learning for Filipinos and foreigners aged 15 years old and above who are unable to avail or do not have access of the formal school system, or who have dropped out of the formal elementary and secondary schools but are not basically illiterate. Passers of the test will get a chance to be go back to the formal basic education system, higher education or any technical-vocational school ("Philippine Education for All 2015: Implementation and Challenges Philippines", 2015).

It was established to benefit those who cannot afford formal schooling and follows whatever their available schedule. It reaches out to elementary and secondary school dropouts, youth and adults who, although in school, are over-aged for grade 6 and 4th year, unemployed/underemployed OSYs and Adults, Industry-based workers, housewives, maids, factory workers, drivers, members of cultural minorities/Indigenous People (IP), Persons with Disabilities (PWDs)/physically challenged and inmates and rebel.

Furthermore, ALS seeks to improve the socio-economic status of the OSYs and the poor by enhancing their basic educational capability through functional education and literacy, and continuing education programs, which will enable them to become more self-reliant, be integrated more effectively into the social and economic enhancement and self-growth opportunities; promotion of literacy programs for the attainment of basic skills that include numeracy and functional literacy and which are basic needs for every individual; development of livelihood skills which manifest in the individual specific competencies that prepare, improve, and enhance employability and economic productivity and the expansion of certification and equivalency programs, which are administered by the formal Education subsystem, into the non-formal sector.

Prior to the program, learners under the ALS will be assessed and profiled to identify their level and appropriate learning interventions. After which, they will be classified as Basic Level, Continuing Education for elementary and secondary levels, or Lifelong Learning learners. Once they're in, they will be working together with the stakeholders and will work on determining the specific course agreements like objectives, curriculum and schedules. Similar to the formal basic education system, the ALS curriculum has five learning areas: communication skills; problem solving and critical thinking; sustainable use of resources and productivity; development of self and a sense of community; and expanding one's world vision where knowledge, respect, peace, solidarity and global awareness are taught. Upon completion of the program, a certificate signed by the DepEd secretary is issued to the graduates as counterpart of the diploma in the formal education system.

In the research locale of this study, in batch 2015 of a learning center run by a non-stock, non-profit foundation in partnership with the DepEd, 67.05% of the total enrolled learners dropped out of the ALS program, This paved way for the researchers to look into the data to uncover the reasons influencing the current trend of attendance and dropout of learners in the ALS – A&E program.

REVIEW OF RELATED LITERATURE
Formal education, with its overarching goals to dispense knowledge and inculcate skills to the youth, is not without flaws in its system. This is true for almost every society like the Philippines, which had 4 million children and youth who were out of school in 2013 (PSA, 2015). To address the issue of the rising number of out-of-school youth, the Department of Education has been promoting the administration of Alternative Learning System for affected and at-risk members of communities in different parts of the country. The programs seek to address problems such as illiteracy and high dropout rates, as well as lack of support for the education of indigenous people, Muslim migrants, the physically handicapped, and other disadvantaged children.

The presence of such an informal and non-formal structure of education abides by the principles on education that were upheld by various philosophers. One of them was Jean-Jacques Rousseau, whose works on education had become one of the central ideas for alternative education. According to Rousseau on his own political novel *Emile*, the growth of the learner should be facilitated with opportunities from a nurturing environment (Doyle and Smith, 2007). Rousseau's ideas on education were controversial during his time, as he emphasized the need for children to develop their natural capacities by a process of semi-autonomous discovery.

The Alternative Learning System subscribes to this pattern of learning, as it is a more practical option for out-of-school youth and other people who cannot cope with formal instruction. The ALS offers basic education in a way that fits their distinct needs and situations. The educational practices here can be likened to Rousseau's ideas that educational practices should be adjusted to make the people focus on what directly affects them and learn through their senses as they study and explore the natural world (Delaney, n.d.). This is widely different from the formal model of education, where a predetermined curriculum is followed by the teacher, who is an authoritarian figure who dispenses knowledge and skills according to the regulations. The students have to comply with the instructional goals and get measured by certain key metrics that will rank them on their performance.

The stages of education as envisioned by Rousseau greatly differ with the strict objectives of public formal education. In the setup of alternative education, the learning environment is controlled to encourage practical experience, not with the use of books or formal lessons. There is also more reliance on applying the knowledge

instead of focusing on theories and rote knowledge (Bertram, 2012). Schools following the formal model additionally expect learners to advance in an exacting and linear pattern from preschool to college. This is not the reality for out-of-school youth who sometimes sought to leave such a system for its pressure on attendance and mobility through the stages. More often than not, the ALS works better for them because the programs in ALS are modular and flexible. Learning can take place anytime and anywhere, depending on the convenience and availability of the learners.

John Dewey, another major philosopher on education, contributes a significant amount of support for the Alternative Learning System. His study at the turn of the 19th century about the 'democratic' notion about a curriculum that prioritized the child instead of the subject matter gained popularity among parents and educators (Rorty, 1998). Dewey's philosophical thinking that education must engage with the learners and their experiences continues to be influential in shaping and developing informal education. He pointed out that the curriculum to be followed should be relevant to the lives of the students. According to him, there should also be emphasis on the enhancement of practical life skills. This would help the learners become more invested in what they were learning in school and be more proactive on how they can improve upon their potential.

Such form of education was labelled progressive, as there is more focus on the student's progress in learning. This model follows the informal and non-formal ways of ALS programs, which seek to supplement the lack of educational development on the part of the students who are encouraged to finish the programs and acquire a certificate that is equivalent to an elementary or high school diploma. From here, the focus shifts again to the way students are learning. Is ALS really an effective measure to promote literacy and practical skills among out-of-school youth and other learners?

Learning can be studied in various models in the informal or non-formal classroom. The fundamental philosophical model consists of the study on the relationship of the teacher, student, and the learning process. In the perspective of the students in ALS programs, one of the primary motivations is to achieve the equivalency certificate and graduate in order to gain more career-related opportunities. Their reason for studying is geared towards obtaining stable employment and pursuing financial security. This makes them unable to focus on classroom activities that are solely based on knowledge without the infusion of skill enhancement tasks. Teachers emphasizing this type of curriculum will most likely fail to grab their attention and keep them interested in studying.

A student-centered approach, on the other hand, is seen to work best with students in the ALS programs. More emphasis on activities that help them achieve their goals in life strengthens their motivation to continue their studies until they graduate. Teachers who therefore understand their ALS students' motivations would be more likely to influence them towards completing their programs successfully. One way to achieve that is to engage in 'dialogics,' one of the tenets of education which was raised by Paulo Freire, whose thoughts on education became one of the seminal works of Marxist-based educational practices. Freire's *Pedagogy of the Oppressed* defended progressive education as well as informal education in extension.

According to Freire, it is important for both teachers and students to take part in a respectful dialogue towards each other. It should involve 'people working together in a conversational tone of education,' not one person imposing on the ideas of others (Smith, 2002). This second scenario is a banking method, wherein the educator 'deposits' knowledge in the student. Such a method would be useless in helping students think and develop on an optimal growth. Instead, the banking approach would further put them in a state of 'oppression' as they cannot think for themselves. The consciousness of the students must be adequately nurtured in order to form the pedagogy of hope.

One way to involve students and enhance their chances of proper development is to promote 'praxis' or informed action. This does not just deepen the understanding, but is part in imbuing a sense of justice and community in students. Building on the shared experiences of ALS learners can help the programs open up new ways to motivate them further in developing their intellect and practical abilities. Through these, informal and non-formal educators can work on helping more students achieve their goals while hopefully decreasing the number of out-of-school children and youth.

When it comes to their goals, adults are generally more or less fully aware of what they want to achieve at a certain point of their lives. This also applies to the desire to finish high school or learn a new hobby. Intellectual needs have to be fulfilled to assure optimal development. Maslow would say that obtaining such goals helps a person to be closer to self-actualization. This makes it important to give adults the support they need if they want to go back to school to finish their education or venture to the fields they want to explore more.

No matter how old people get, they should be able to continue their education if they want to. Not everyone can go back to a formal type of education, too, especially with its rigid focus on a number of requirements. There are also the ages of the classmates to contend with. It can be hard to fit in an environment where one is like an elder sibling or a parent to a group of children or youth. This is one reason why many adults choose to venture to the Alternative Learning System that is available in their community. In fact, a large number of committed learners in the ALS are adults who want to finish their education and get an equivalency certificate. Their goal to succeed in ALS can be inspiring and points back to how ALS is an effective method to get people back into school.

This follows a number of philosophical movements in education such as the progressive type of education, which emphasizes student-centered learning (Spurgeon & Moore, 1994). This allows adults to be in charge of the way they learn. According to the philosophy of progressive education, learner needs, interests, and experiences are valued and become part of the learning process. This can mean a great deal, especially for adults who are not so confident with their abilities.

Additionally, there is more room for practical learning and problem solving. Applying what they learned would go a long way to enhance comprehension. John Dewey would approve of this, as he subscribes to the idea that students should be able to apply what they learned in different aspects of their lives. Other than that, progressive education gives way to collaborative learning. This allows students to work with each other in projects and class discussions. Dialogues with the teachers are also encouraged for active inquiry and push for discovery learning.

The progressive philosophy on education is not the only thing that applies to ALS for adults. The humanist tradition is strong in many ALS programs that seek to enhance personal growth and development. The learner must be self-directed and committed to the process, though. Interpersonal communication may be part of the humanist tradition, but it is still important for the learners to be more proactive in studying, researching, and fulfilling all the requirements of the program they joined. Without voluntary learning, humanist education would not work for the adults participating in the ALS programs.

Teachers in this philosophical model act as a facilitator to learning. They help the participants understand the lessons through enriching activities and guide through understanding the main themes of what they are investigating. This is especially demonstrated in the ALS setting, as it wants to help adult students achieve their educational goals.

Although not a philosopher, Carl Rogers is one of the main proponents of the humanist philosophical approach to education. His way of focusing on the learner led the way for students to feel more responsible for how they learn. Adults going through this type of strategy can then go on the discovery type of learning, in which they themselves study the basic information about the topics. The teachers will then help them through the application, which would help them find out how to do things on their own. Such independent learning can be rewarding and drive students to undertake more activities to finish their learning goals.

These two approaches in the ALS type of learning can result to adult students who have the potential to become proactive learners. However, the differences lie in the quality and execution of the models in the ALS program itself, as well as the attitudes of the students taking part in the lessons. If done properly, then the ALS programs can bring forth adults who are better off with being productive with their studies.

All students have different needs, whether in the traditional classroom settings or the centers of Alternative Learning System. Generally speaking, the students in ALS classes have more complex needs due to their individual situations at home and school. This can be considered true in almost any place with alternative learning setups. Children, teenagers, and even adults who have not finished their education grapple with various issues, which affect their learning capacities.

According to Mullen and Lambie (n.d.) from the University of South Florida, the students in Alternative Education Schools (AESs) in the United States usually deal with a variety of problems. Although their study focused on the issues of students who have been removed from their traditional school due to discipline policies, their research is still relevant to the study of general ALS concerns. They have found out that students enrolled to AES centers due to any or a combination of the following: (1) referral by school, (2) social-emotional/behavioral issues, (3) truancy, and (4) suspension or expulsion from their traditional school. As a result of these problems students from AESs show signs of delinquency, from defiant behaviors to violence and aggression. Furthermore, mental health interventions are crucial for students in AESs. There is a high prevalence of suicidal tendencies, which identifies an essential need for counseling services. Antisocial behavior, defined as any socially disruptive

behavior that goes against what society considers as normal and acceptable, is also a major problem in AESs. This can be exacerbated with illegal use of substances such as drugs and alcoholic beverages. AES centers experience this problem more than traditional schools, due to a higher number of students using or possessing these substances.

Due to a lack of suitable educational support in traditional schools, it is not surprising to note that AES students need enhancement of fundamental skills such as reading, writing, and basic math. Many AES programs in the United States offer subjects on academic basics, interpersonal skills, state-required courses, life skills, and remedial instruction.

Transitional stress from a traditional to an alternative classroom setting is also generally experienced by the students. Prolonged absences due to waiting for proper placement can adversely affect their comprehension and academic outcomes. A stigma can also be attached to children about to or attending an AES. Labels such as 'bad students' or 'problem students' can make the students feel judged and disliked, which causes resentment and lack of willingness to continue their education.

A family can hinder or increase the educational opportunities that students obtain. This proves how delinquent youth often come from homes where discipline and cohesion are less present. Their families also have higher occurrences of significant dysfunctionality, drug abuse problems, imprisonment for felonies and misdemeanors, and a history of abuse.

Even single-parent families are not spared when it comes to problems encountered by AES students. The absence of a biological parent is seen as a contributing factor in student delinquency. Students with only a single father often have the highest rate of delinquency while a large number of those enrolled in AES centers come from single-mother families.

Although the settings are widely different, there are still some parallelisms in the situations faced by the students in both the United States and the Philippines. There are many similarities in the academic and family factors, as a large number of ALS students in the Philippines face problems in their studies while getting discouraged by their situation at home. The trend of out-of-school children and youth in the Philippines is increasing, which multiplies the similar circumstances they face in alternative classrooms.

Academic factors, in particular, can be a challenge given their inadequate level of knowledge and skills. This can serve as a block to the motivation of the students to graduate with an equivalency certificate. This is only one of the possible reasons why ALS learners leave their programs. Another factor to take note of is the type of family where the student came from. Do their families offer effective emotional support for the students to complete the programs? This is an all-important question, given how the family is a viral component in a student's mindset.

In a study conducted by Berliner et al. (2008), the drop-out and re-enrolment of students or learners may be explained by "push" and "pull" factors. In their literature, they had described certain school experiences that "push" and "pull" students towards dropping out and returning. Re-enrolees reported academic struggles and the need for more help to master grade-level content, boredom, and limited ways to make up for failed courses and credits. There were also experiences that pushed them to drop out alongside family crises such as homelessness and alcohol and drug use, fatigue from physically demanding jobs, pregnancy and parenting, gang pressures, and violence in the community. These were the personal challenges that "pulled" them away from school. On the other hand, the primary reason for the learners return to school was their failure to secure stable employment and that they have realized that it is critical to get a high school diploma, which was the minimum credential needed to earn a subsistence income.

The research conducted by Mercado (2015) discussed the problems encountered by the ALS learners as well as their experiences and assessment in the program. The goals are to lessen the number of illiterate students, help them develop positive attitude, interest and proper discipline through classes, training and worthwhile activities, and to encourage the out-of-school children, youth and adults to participate in all ALS programs and projects in the area. This way, they would be more capable to assimilate themselves in their surroundings and community. The challenges and problems faced by the ALS center in Tanauan are (1) difficulty in recruiting learners especially in Basic Literacy Program (BLP) because of student shyness and indifferences, (2) absenteeism, (3) negative thoughts from parents and even barangay officials about ALS, and (4) insufficient funds to sustain the program and project.

In terms of students' problems in the content and instruction in ALS, the data revealed that students have minimal problems in the content and instruction but faced more issues with the length of the program or course.

One of the students' reasons is that they had a hard time attending all classes and the suspension of classes affected the number of days that they did attend school. Some students also said that the course was either too short or too long.

Questions raised in this part is the length of the program, mastery of the subject matter, instructional delivery, scheduling of activities, teacher-student ratio, availability of relevant and innovative programs, and implementation of school policies and procedures have a verbal interpretation of some extent. On the other hand, the number of curricular and extra-curricular activities, flexibility of the teachers and the ability to match the demands of the labor market has a verbal interpretation of little extent. Moreover, the number of curricula and co-curricular activities have lowest mean which implies that students experience fewer problems in this aspect.

In the second part of the assessment and evaluation in the ALS, the students said that they have minimal problems with this part with the program. Their performance in the A&E test had the highest mean with verbal interpretation of some extent for the reason that there are some students who took the test for the second time. In the research, the school said it can only do so much, as the students have the final responsibility for their studies so they can pass the test. Furthermore, students experienced very minimal problem with the quality of examination, with the assessment showing the lowest mean. This implies that they are contented with their exam since they are aware that it was carefully made by the experts to assess what they have learned from their lessons. In addition, they also have minimal problems regarding the schedule of examination because it was always based on their availability and convenience since some of them are working.

METHODOLOGY
Research Design
The study utilized the descriptive survey method as the research design of the study. Descriptive research is devoted to the gathering of information about prevailing conditions or situations for the purpose of description and interpretation (Aggarwal, 2008).

Population and Sample
The population of this study was the learners who were enrolled in Alternative Learning System (ALS) - Accreditation and Equivalency (A&E) Program. It is a program aimed at providing an alternative pathway of learning for out-of-school children, youth and adults who are basically literate but who have not completed the 10 years of basic education mandated by the Philippine Constitution. Through this program, school dropouts are able to complete elementary and high school education outside the formal school system (DepEd, 2016).

In this study, convenient sampling method was utilized. The sample was eighty eight (88) learners who have either completed or dropped out of the ALS – A&E Program under a non-stock and non-profit foundation for the year 2015. In partnership with the Department of Education, this 10-month program aims to help ALS learners progress along the learning continuum from functional literacy to autonomous learning in mastery of skills and competencies to pass the national ALS – Accreditation and Equivalency Tests. This will award them a certificate equivalent to high school diploma qualifying them to enroll in any colleges and universities of their choice (MLALAF, 2016).

Instrumentation
Demographic profile of the participants such as age, sex, and educational attainment were obtained using a survey questionnaire. The Instructional Managers' Monitoring Sheet was also utilized to determine the participants' reasons for dropping out from the ALS – A&E Program. Likewise, informal interview with the instructional managers was done to verify the reason stipulated from the monitoring from.

Data Collection and Analysis
Quantitative data was obtained from a survey questionnaire consisted of learners' age, gender, and educational attainment. Participation of the instructional manager was solicited and data were collected. To calculate the frequency and percentage distribution of the participants according to their demographic variables, Statistical Package for the Social Science (SPSS) was used by the researchers.

 Statistical Treatment of Data
          In the treatment of data of the study, the following statistical treatments were used:
          a.   Frequency

Frequency shows how frequent each value of a variable occurs in a set of scores (Katzer et al., 1998). This treatment was utilized in the distribution of the participants according to age, sex, educational attainment, and reasons for dropping out from the ALS Program.

b. Percentage

Percentage frequency distribution is a display of data that specifies the percentage of observations that exist for each data point or grouping of data points (Shapiro, 2008). Likewise, this treatment was applied in the distribution of the participants according to age, sex, educational attainment, and reasons for dropping out from the ALS Program.

c. Weighted Mean

Weighted mean is a procedure for combining the means of two or more groups of different sizes; it takes the sizes of the groups into account when computing the overall or grand mean (Vogt, 2005).

FINDINGS

1. The participants' age on average is 20.36. Majority (21) of the learners were aged 17 years old and comprised 23.38% of the total population. It was followed by learners aged 16 years old, (13) and 19 years old (11), which made up 14.77% and 12.50% respectively. In Erikson's Psychosocial Theory, he asserts that adolescence, which is basically between ages 12 and 18 years old, is the stage at which an individual must meet and resolve the crisis of basic ego identity. In this regard, adolescents may experiment with different roles and ideologies and try to determine the most compatible fit. Individuals who are unsuccessful in surpassing the stage may exhibit a confusion of roles, thus, they may not seem to know who or what they are, where they belong, or where they want to go. They will be usually the ones who may withdraw from the normal life sequences like education and jobs (Schultz and Schultz, 2005).

The participants were dominated by male, consisting of fifty-three (53) learners at 60.23%. On the other hand, thirty-five (35) participants were female, covering 39.77% of the learner's population. According to a research study of Mercado (2015), one of the possible reasons on why there are more male ALS learners is related to bullying. A large number of male students who stopped attending a regular school were either bullies or victims of bullies. This might have been a reason for a possible suspension or expulsion from school (in the case of bullies) or a lack of interest to continue regular schooling (on the part of bullied victims). There are also likely situations when traditional schools find some male students who are hard to deal with due to delinquent behavior or disciplinary issues. This might have affected their school attendance and performance.

The most number of learners attained grade 6 level (29) of education encompassing 32.95% of the participants. Learners who attained 3rd year in high school followed with 23 learners covering 26.14%. Based on the data, the ALS learners who stopped attending a traditional school at grade 6 level make up the highest percentage.

2. Fifty nine (59) learners which comprised 67.05% of the participants enrolled in the learning center dropped-out while only twenty nine (29) or 32.95% completed the program. A total of thirty one (31) learners comprising 35.23% of the participants expressed lack of interest as their primary reason why they dropout from the program. According to Orbeta (2010), these students often do not see the value in continuing their education and envision only small returns on the time and effort they put into their studies. Moreover, lack of personal interest is a complicated reason which entails more reasons alongside such as poor information on the value of education, impatience on the returns and benefits of education, and the accumulation of frustrations due to inability to cope with lessons primarily caused by poor school or household environment.

3. Employment ranked second on the list with seventeen (17) or 19.32% of the learners citing this reason. One reason that students think this way is that the educational system is not producing results that are relevant to the needs of students and their families. Thus, instead of schooling, the individuals then result to look for jobs to keep up and get immediate economic returns. As reiterated by Orbeta (2010), the abysmal economic conditions in the areas where there are high numbers of out-of-school children and youth influence students to drop out and look for work instead.

4. A responsive guidance program would be beneficial to ensure the holistic well being of learners especially on areas not tapped by lecture modules of the curriculum. The purpose of the responsive guidance program for ALS-A&E program is to provide all interested parties with a comprehensive aid in understanding, developing and implementing a guidance plan for the learners. The overall plan would make specific

reference to guidance and would incorporate a guidance plan that would help enable an institution or organization to define its priorities and to best deploy the resources available to it.

CONCLUSION

The following are the conclusions formulated based on the data gathered:

1. In general, the majority of the learners are adolescents and young adults with ages ranging from 16-19 years old. The number of male learners is higher than the number of female learners by more than half of the total respondents. Also, a high number of learners completed only Grade 6 and 3rd year level of formal education.

2. The majority of the reasons for dropping out from the program happened due to lack of interest and employment. As affirmed by William Glasser's Control Theory of Motivation, learners are not motivated to do their schoolwork because they think it is irrelevant to their basic human needs. This can imply that the parents or guardians of the learners might have failed to instil the value of education. It can also be surmised that the current teaching strategy is not effective in meeting the learning objectives.

3. Employment is the secondary cause of ALS dropout. This shows how important it is to hear the students out when it comes to their financial problems. Addressing this concern makes it possible to engage more learners who might get encouraged to stay on with the program if they are given assistance in acquiring food and other necessities that can help support their family's daily needs. These are crucial concerns to address, especially for demotivated students who do not see the connection between education and future employment and for students who are persevering to finish their education but cannot continue due to low income.

4. Developing and implementing a guidance program for the ALS-A&E Program is needed to provide a holistic development for the learners. It is one way to involve students and enhance their chances of proper development. This guidance program can also open up new ways to motivate the learners further by developing their intellect and practical abilities. Through these, informal and non-formal educators can work on helping more students achieve their goals while hopefully decreasing the number of out-of-school children and youth.

RECOMMENDATIONS

Based on the results and conclusions of the study, the following recommendations were made:

1. Records should be shared between instructional managers and learning centers with confidentiality offered for all students. Other than the hard copies, there must be an online database so all the information can be backed up. An online database would also make it easier to access records through virtual means. This also makes it more convenient and accessible for instructional managers, counselors, and other service providers in the learning centers to consolidate the information about each student and provide suitable interventions when necessary.
2. Instructional managers should look into the factors contributing to the learning motivation of the ALS learners in involving themselves in school or any instructional program. Alternative Learning System providers should also revisit and review the programs and balance out the relationship of the learners' ability and the appropriateness, complexity and demands of the tasks given to them as the relationship of these factors are crucial in bridging the willingness of the learners needed for a successful achievement outcome. Examining the topics to see if they are really relevant to the general educational needs of the students would additionally help in pursuing policy changes in the curricula and other programs of study. This makes it necessary for instructional managers to find out how to make their students interested in their lessons and keep them motivated to study. It is additionally vital for the teachers to help students realize the connection of the learning objectives to real-life situations they might encounter in the future.

    Also, coordination with parents must be strengthened to help ensure a good relationship between the school and learners. Positive parent involvement in the program is recommended especially with adolescent learners. Students with involved parents, regardless of family income or social background, are more likely to earn higher grades and test scores, as well as enroll in higher-level programs. They also have higher

chances to advance in their classes and earn credits. Students with strong and nurturing parental support are more likely to attend classes regularly, have better social skills, and usually graduate on time.

3. A career guidance programs should be provided to ALS learners to bridge education with worthwhile employment and entrepreneurship opportunities. This can increase the chances that students will get more encouraged to do their best in achieving the equivalency certificate. The program can also address various concerns, from applying for employment to resolving work-related problems. Focusing on at-risk students who show signs of wanting to pull away from the program due to employment concerns will be addressed. Moreover, instructional managers and guidance counselors coordinating with students about their career plans can additionally help to bridge the perceived gap between learning and application of knowledge in various situations.

4. A responsive guidance program should be implemented focusing on the needs and concerns of the ALS learners. Impact evaluation and follow-up should also be conducted to evaluate the outcomes of all the programs implemented. It will inform the stakeholders if certain programs are effective or suitable to target participants which give powerful information for future directions.

5. The budget for the ALS should be increased to provide more resources for the development of responsive programs for comprehensive coverage. The government should offer programs that can support their families and help them gain more lucrative sources of income. Particularly, Local Government Units (LGUs) should be tasked to launch widespread information campaigns about the importance of education. Both government and non-government organizations should also work together to help everyone receive quality education and prepare amply for life.

6. Conduct further studies regarding the effectiveness of different intervention programs conducted for the ALS – A&E learners. Moreover, the DepEd needs to urgently conduct an in-depth and thorough empirical study concerning reasons behind the rising dropout rate of their ALS A&E Program to validate the result of this study. Studying the underlying causes will help ALS teachers, coordinators, and administrators to create more effective school programs to meet the special and specific needs of their students.

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HEADWAY OF COGNITIVE SKILLS: METACOGNITIVE FACILITATION STRATEGY

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Abstract: Disputes on educational application and quality are posed with the budge from teacher as specialist to catalyst. This quasi-experimental design aims to stare into the effects of Metacognitive Facilitation Strategy on the cognitive skills of the students. The profile of the respondents was based on the Dreyfus Model and the Revised Bloom's Taxonomy through pre-test and post test. In bridging the gap between the learning style and the teaching strategy, the use of Metacognitive Facilitation Strategy was focused. It is empowering for both the learners and the teacher and frees the teacher from many of the burdens that having to be 'specialist' necessitate. This study surveyed the influences of teaching strategy on its outcome on students' school academic undertakings. Consequences of the study revealed that there was a significant difference in the academic achievement of the students' pre-test and post test outcome after the exposure to the Metacognitive Facilitation Strategy: thus metacognitive skills are imperative organizers of the teaching-learning tasks. These facilitate planning, setting goals, initiating work, sustaining future-oriented problem solving activities, monitoring and managing progress on undertakings. These pointed out to the conclusion that Metacognitive Facilitation Strategy has a constructive impact on pupils' academic feat.
Keywords: quasi-experimental design, cognitive skills, Metacognitive Facilitation Strategy

INTRODUCTION

The teacher is one of the factors in the educative progression and has influenced the way students think, learn, communicate and act. It is the teacher's task to build up a plan, to attain an aspiration and to lookout against undesirable results. It means that there must be a stratagem in teaching and the knowledge of pedagogy. It is the art of using psychological plan so as to increase the probabilities and constructive consequences of accomplishment and to lessen the chances of disappointment.

The Times Higher Education World University Rankings (2012) powered by Thomson Reuters as a global university performance tables to judge world class universities across all of their core missions - teaching, research, knowledge transfer and international viewpoint. Philippine schools slid further down a world university ranking this year, a poor performance linked by an official of the highest-ranked Filipino school to weak state support. The University of the Philippines lingered the top Filipino school in the record, although slipping to being ranked 338th this year from 332nd in the previous school year. The Philippines appears to be moving at a snail's pace compared with its neighbor in the Association of Southeast Asian Nations (ASEAN). Leading universities in Asia, including those in Hong Kong, Singapore, Korea, Japan and China made it to the top 50 in the list, along with European and American schools.

The Global Competitiveness Report 2011-2012 detailed that the Philippines is faced with the challenges especially in the areas at the foundation of any competitive economy, even at an early stage of development. The quality of the country's public institutions continues to be assessed as poor: the Philippines ranks beyond the 100 mark on each of the 16 related indicators. Issues of corruption and physical security appear particularly acute

(127th and 117th, respectively). Despite an enrolment rate of around 90 percent, primary education is characterized by low-quality standards (110th).

Nowadays a very important goal of suddenly developing modern education is to facilitate students learn how to think more productively, create and assess ideas. Thinking skills become important because the well taught indispensable subjects in education, however, are not adequate to meet the demands of the up to date marketplace. Countries across the world are recognizing that a broad range of competencies are needed to prepare future teachers for an unpredictable future. All these show that teachers and the schools can no longer bond to the traditional way of teaching. If the teachers have to be very effectual, there is a need to espouse the rapid technological changes that affect teaching and learning. Approaches to classroom pedagogy must be changed and instructional materials must be carefully planned to maximize learning.

THE STUDY

Is learning maximized through the employment of metacognitive facilitation strategy? Can the application of metacognitive facilitation strategy in the classroom perk up student achievement and cognitive thinking skills? Is the effort exerted in the preparation of instructional materials worth the course outcomes expected? These are the channel questions of this paper.

Metacognitive Facilitation Strategy is authorizing both the learners and the teacher in the academic quest. It involves not only the facilitator but also the other components in the educational system like the curriculum, teaching strategies, teacher competencies, students thinking skills and finances in providing a productive learning environment. Metacognitive skills are central agenda of all of the tasks which enable planning, setting goals, initiating work, sustaining future-oriented problem solving activities, monitoring and managing progress on undertakings. Certainly, thinking skills are required in teaching activities. Thus, thinking skills are indispensable for well-educated modern teachers. Using thinking skills across the curriculum can be an effective way to boost facilitating the learning process.

A number of studies have been made to widen the broad range of competencies needed to prepare future teachers for an unpredictable future across the world. In Pakistan, Fazalur Rahman et.al. (2011) examined the effects of metacognitively teachers making any distinction in students' metacognition and found out that student of more metacognitively responsive teachers performed better on metacognitive inventory. It was recommended that the teachers and students may be provided awareness about thought process.

Lisa Worrall and Frances Bell (2007) investigated the impact of Metacognition and Lifelong E-learning: a contextual and cyclical process. Metacognition is possibly a chief conceptualization within the area of lifelong e-learning, with many theorists and practitioners claiming that it enhances the learning process. However, the lifelong, cyclical and flexible aspects of before, during and after metacognitions within lifelong e-learning inclusive of whether an input necessarily leads to a completed output seem marginal within current areas of practical and theoretical debate.

Kuhn (2000) discussed on the role of metacognition in cognitive development by focusing on the link between metacognition and the development of higher order thinking skills. It characterized the skills that most consider to be critical thinking skills as being metacognitive rather than cognitive thus: higher order thinking or critical thinking by definition involves reflecting on what is known and how that knowledge can be verified, clearly metacognitive processes.

Kruger and Dunning (1999) demonstrated that college-aged novices possess poorer metacognition than college-aged experts in three different domains of expertise: humor, logical reasoning, and grammar. When learners are incompetent in a domain (as indicated by making poor choices and reaching invalid conclusions), this incompetence robs them even of the ability to recognize their faulty thinking.

Lately, Kelemen, Frost, and Weaver (2000) compared the performance of college students across a number of different metacognitive tasks. Results indicated that personality differences in memory and confidence were stable across both sessions and tasks but the differences in metacognitive accuracy were not. Metacognition is tacit as knowledge of effective learning and cognitive processes that work together to increase knowledge acquisition and sustained learning. Typically, individuals with more sophisticated and advanced metacognitive ability will perform more consistently and with higher achievement in the classroom.

Metacognitive awareness of the students learning processes is as important as their monitoring of their learning of the course content. Metacognition includes goal setting, monitoring, self-assessing, and regulating during thinking and writing processes; that is, when learners are studying and doing homework. An essential component of metacognition is employing study strategies to reach a goal, self-assessing one's effectiveness in reaching that goal, and then self-regulating in response to the self-assessment.

Figure 1. Conceptual Framework of the Study

The study focuses on the learning process maximized through the use of metacognitive facilitation strategy and develop student achievement and thinking skills through the effort exerted in the preparation of instructional materials worth the outcomes expected.

In general, metacognition is thinking about thinking. More specifically, Taylor (1999) defines metacognition as "an appreciation of what one already knows, together with a correct apprehension of the learning task and what knowledge and skills it requires, combined with the ability to make correct inferences about how to apply one's strategic knowledge to a particular situation, and to do so efficiently and reliably." The more the students are conscious of their thinking processes as they learn, the more they can control such matters as goals, dispositions, and attention. Self-awareness promotes self-regulation. If the students are aware of how dedicated (or uncommitted) they are to triumph the goals, of how sturdy (or weak) is their disposition to persevere, and of how determined (or wandering) is their attention to the various thinking tasks that can regulate their commitment, disposition, and attention.

The thinking skill of the students is identified through the Adapted Dreyfus Model of Expertise Development in 1982. Stage 1 is *novice,* characterized by limited, inflexible, rule-governed behavior. The Stage 2 is the *advanced beginner,* where, in addition to the set of rules, the learner begins to learn some of the important situational aspects of the task, but may not be able to differentiate the importance of these features. Stage 3 is *competent,* where the learner sees actions in terms of goals and plans, based on the selection of important features of the situation, and which are used to guide action. The *proficient* is the stage 4, where the best plan of action is selected apparently unconsciously, and where situations are summed up quickly and plans selected. Finally the Stage 5 is *expert,* where the performer acts intuitively from a deep understanding of the situation, appears to be unaware of the rules and features, and performance is fluid, flexible, and highly proficient

As learners progress from novice through to expert, they progress from a relatively passive strategy of receiving information to strategies which are increasingly reflective and intuitive. They shift from being 'empty vessels' to be filled with information to develop into constructors of knowledge. Along with that comes a gradual withdrawal of the teacher in the form of coach or mentor, although some learners will always retain these types of people to help them improve, add to or analyze their skills. Where people have become highly expert in a task, they may move to what is known as automaticity, where the task can be carried out automatically. At that level some people may have difficulty communicating how they actually do the task. One of a teacher's most important skills is having the capacity to help others on their journey through these five stages—even if they themselves are already experts. But how do teachers and others facilitate the development of workplace knowledge and expertise? Intervention is the provision to learners of supportive contexts and guidance that enables them to engage with a learning task and receive advice and assistance while they learn it, is one strategy. The metacognitive facilitation strategy intrusion is progressively withdrawn, or changed, as expertise develops. Exercising judgment in the way that a task is carried out has also assumed a greater importance for the learner. With the academic test, they are learning to learn through application of theories instead of merely following learned rules. As a student joins the group at a novice level, they are peripheral to the action. But as they become more proficient they take on a more central role, they move from the periphery to the core.

Bloom's Taxonomy of Educational Objectives is the most renowned description of the levels of cognitive performance. Knowledge represents the lowest level in Bloom's taxonomy. It is low only in the sense that it comes first and it provides the basis for all higher cognitive activity. Only after a learner is able to recall information is it possible to move on to comprehension. The third level is application, which refers to using knowledge or principles in new or real-life situations. The learner at this level solves practical problems by applying information comprehended at the previous level. The fourth level is analysis, breaking down complex information into simpler parts. The simpler parts, of course, were learned at earlier levels of the taxonomy. The fifth level consists of creating something that did not exist before by integrating information that had been learned at lower levels of the hierarchy, is called as synthesis. Finally, evaluation is the highest level of Bloom's hierarchy. It consists of making judgments based on previous levels of learning to compare a product of some kind against a designated standard. The main value of the Taxonomy is twofold: (1) it can stimulate teachers to help students acquire skills at all of these various levels, laying the proper foundation for higher levels by first

assuring mastery of lower-level objectives; and (2) it provides a basis for developing measurement strategies to assess student performance at all these levels of learning.

The salient features of metacognitive study has provided educational psychologists with imminent about the cognitive processes involved in learning and what differentiates successful students from their less successful peers. It also holds several implications for instructional interventions, such as teaching students how to be more aware of their learning processes and products.

RESEARCH METHODOLOGY

The study made use of the pre-test – post test quasi-experimental design on the thinking skill of the student and the student reactions to the Metacognitive Facilitation Strategy employed in the classroom. The respondents were given the validated pre-tests on achievement. After the pre-test, they were exposed to the Metacognitive Facilitation Strategy in the lessons identified for the final term in teaching. Post test was administered after the final term. The researcher made test is used to assess the students' academic achievement. The test consists of sixty items on the Facilitating Learning course and evenly distributed the table of specification to the six levels of the original Bloom's Taxonomy of Educational Objective. Then the students pre-test and post test scores are interpreted to the adapted Dreyfus Model of Expertise Development. The Dreyfus model is used fairly widely to endow with a means of assessing and supporting progress in the development of skills or competencies, and to provide a definition of acceptable level for the assessment of competence or capability. The 'expert' level does not signify that development stops, as expert learners need to evaluate their practice and keep up-to-date with new evidence. The students' thinking skills is categorized into five levels. Those learners obtaining the scores of one to twelve is considered as novice, thirteen to twenty-four is classified as advance beginner, twenty-five to thirty-six is regarded as competent, thirty-seven to forty-eight is noted as proficient and forty-nine to sixty scores tagged as expert learners. One hundred thirteen (113) research respondents were the identified students of the Facilitating Learning. Data were collected through the responses of the validated test and evaluation towards the program conducted to the respondents.

The type of evaluation is a quasi-experimental study which aims to determine whether a program or intervention has the intended effect on a study's participants. A pre-post test design involves the data collected on study participants' level of performance before the intervention took place (pre-), and the same data collected after the intervention took place (post-). This study design only looks at one group of individuals who receive the intervention, which is called the treatment group. The pre-post test design allows making inferences on the effect of metacognitive facilitation intervention by looking at the difference in the pre-test and post-test results. The t-test assesses whether the means of two groups are statistically different from each other. This analysis is suitable to compare the paired means. The respondents post test was directed after the final term and evaluated the effects on the application of Metacognitive Facilitation Strategy. The pre-test and post test scores are used in the statistical data of the products of the study.

RESULTS AND DISCUSSIONS

Based on the students' performance in the pre-test and post test, none of the respondents was identified as novice. These education students were highly selected and had undergone screening for they had to qualify the entry qualification and maintain their grades in the College of Teacher Education. There were seventeen students documented as advance beginner, but after the Metacognitive Facilitation Strategy, they improved their level of thinking. Eighty-three students were categorized as competent in their thinking styles before the scheme

and after the implementation of the program it was reduced in fifty-four. There were thirteen respondents regarded as proficient in their assessment and increased in number after the employed strategy of teaching. Finally, one student stands out as expert in facilitating learning. As to the students' thinking skills using Dreyfus Model of Expertise, stage1, novice learners with 1-12 score, stage2, advance beginner with 13- 24 score, stage3, competent learners with 25-36 score, stage4, proficient learners with 37-48 score and stage5 expert learners with the score of 49-60. Hence, there is a statistically significant difference between the students' pre-test and post test thinking skills, that the differences between condition Means are probably due to the Metacognitive Facilitation strategy. It implies that the result was considerable between pre and post-test scores consequently Metacognitive Facilitation strategy did help a lot in improving the students' post test scores. By means of Metacognitive Facilitation Strategy there is an enhancement in the students' achievement. And also it involves the interactive processes that enables the interface among students and their peers in the Facilitating Learning course and shows the ability to elucidate and enhance the lessons prepared by the professor.

CONCLUSION

Metacognitive facilitation strategy is a great help in the students thinking skill headway. Metacognitive thinking can be taught. According to experts, it ought to be part of an expected curriculum. This research also strongly suggests that metacognitive thinking can be taught along with content, without sacrificing the quality of either. The professional education curriculum seems to be the ideal to carry out metacognitive thinking instruction, as inquiry and the quest for knowledge are the basis of education. This research shows an overall increase of students achievement score in terms of cognitive critical thinking ability. These creative strategies give choices to teachers to help them implement the framework of critical thinking instruction in the classroom. While these are not the only strategies that will be used, they are a good overview of strategies. They should be seen as vehicles for delivering the components of the Educational Objectives by Benjamin Bloom that are called for within in developing the students' thinking skills from novice to perk up to the expert stage in the outlined cognitive prowess by Dreyfus Model of Expertise Development.

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HIGH SCHOOL STUDENTS' PERCEPTIONS TOWARD ENVIRONMENTAL ISSUES: A PHENOMOLOGICAL STUDY

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Abstract: The purpose of this study was to explore 10th grade high school students' perceptions towards environmental issues such as air pollution, global warming, greenhouse effects, ozone layer depletion, and acid rains. In the study, phenomenological research design as a qualitative approach was utilized. Five students from a high school participated to this study. Data were collected through semi-structured interviews and analyzed by doing content analysis. Results of the interviews indicated that students confused the global warming, greenhouse effects, ozone layer depletion, and acid rains. In addition, they thought that there were cause effect relationships between greenhouse effect and ozone layer depletion, and between greenhouse effect and acid rains. Moreover, it was revealed that students had some misconceptions towards these issues. Although there was no direct relationship between these issues, they always made connections between them. Based on the results, it was suggested that the awareness of students should be increased with a variety of environmental education. Scientific activities such as conferences, symposiums, and panel should be executed. Moreover, students should be motivated in the courses during primary, secondary and undergraduate education. Finally, the awareness of people about the negative effects of environmental pollution should be raised by using the media.
Keywords: Air pollution, Global warming, Greenhouse effects, Ozone layer depletion, Acid rains Qualitative research,

INTRODUCTION

Environmental issues are an important area of interest around the world and still under discussion. Every day, our world is affected more by environmental problems. Air pollution, global warming, climate change, greenhouse effect, acid rain, and ozone layer depletion constitute some of the major environmental problems (Myers, Boyes, & Stanisstreet, 2004).

Air pollution is defined as the presence of harmful substances in the atmospheric air which damage the ecological balance. The main reasons of air pollution are the energy sources used for various purposes, heating, motor vehicles and industrial facilities. On the other hand, air pollution has many negative effects on human health (Kampa, & Castanas, 2008; Seinfeld, & Pandis, 2012).

The sunlights filtered through the atmosphere are absorbed and warms the Earth's surface. Gases in the atmosphere prevent the earth's heat loss. This property of the atmosphere is called as "greenhouse effect". Regarding this issue, carbon dioxide has the greatest heat retention properties in the air (Seinfeld, & Pandis, 2012). Various industrial processes, fuels used for heating, fossil fuel power plants and exhaust gases pollute the atmosphere, and emit sulfur dioxide (SO_2), nitrogen oxides (NO_x), hydrocarbons and solid particles which are falling back to earth in the form of acid rain (Kampa, & Castanas, 2008; Seinfeld, & Pandis, 2012). Ozone is found in the stratosphere and absorbs ultraviolet (UV) rays which are harmful to living things. Without the ozone layer, the harmful UV rays would reach the Earth's surface and cause serious damage to living things. In case of a reduction of ozone concentrations up to not do its duty, ozone layer depletion occurs, which means a hole in the ozone layer among the people (Seinfeld, & Pandis, 2012).

Examination of students' opinions about environmental issues shed light on their scientific literacy for science educators and researchers. Training scientifically literate individuals is among the main goals of contemporary science education (AAAS, 1993; BouJaoude, 2002; Stern, Powell, & Ardoin, 2008). A scientifically literate person can easily understand basic concepts of science and nature of science, follow scientific developments, and use these concepts appropriately by incorporating scientific process skills. Also, s/he wonder about the events occurs around him/her and correctly interprets relationship between science and the environment (Laugksch, 2000).

Educating individuals with the environmental awareness is important to eliminate and overcome environmental problems. Environmental education is a continuous learning process in which individuals acquire knowledge, skills, values, and experiences in order to improve their perception of the environment, to ensure environment-related values, attitudes and recognition of the concepts related to environment, and generate a healthy and clean environment for future generations (Shobeiri, Omidvar, & Prahallada, 2007; Tilbury, 1995; Vaughan, Gack, Solorazano, & Ray, 2003). Environmental education is important for several points since individuals are aware of some environmental issues. They also produce solutions in order to resolve these issues and develop positive and realistic attitudes about the environment (Davis, 1998; Shobeiri, et al., 2007; Vaughan, et al., 2003). In order to give an effective environmental education to the individuals and improve environmental awareness, it is important to determine their prior knowledge and perception about the environment, and their attitudes toward the environment by conducting research studies in all levels of education (Duvall, & Zint, 2007). However, related literature indicates that studies were mainly at university level (Çabuk & Karacaoglu, 2003; Erdal, Erdal & Yücel, 2013; Khalid, 2001). For instance, Khalid (2001) examined 113 pre-service elementary teachers' misconceptions regarding the greenhouse effect, atmospheric ozone, and acid precipitation. Participants had some misconceptions which are the skin cancer may be occured by the greenhouse effect, ozone depletion may cause global warming, ozone layer have multiple functions, and pollutants evaporate with water, later come down as acid rain. Similarly, Çabuk and Karacaoglu (2003) investigated whether students' personal characteristics such as gender, age, department and class affect their ideas about the environmental sensitivity or not. They found that gender, departments, and class affected students' environmental awareness significantly whereas age did not have significant effect on their ideas about the environmental sensitivity. In addition, students' opinions indicated that most of the students do not pay attention to using public transport and they use harmful substances to the ozone layer like deodorants. They also stated that they occasionally pay attention to ingredients of cleaners whether they include harmful chemicals or not. Moreover, according to the students' opinions, sufficient education on air, water and soil pollution was not given in the formal education. In another study, Erdal, Erdal and Yücel (2013) carried out a study with 253 university students to determine students' levels of environmental awareness. Students' responses indicated that the majority of students had a high level of environmental awareness. The result of the study revealed that students generally acquired information about the environmental problems from television and the internet. Only 44% of them stated that they got enough courses related to environmental education in school up to university. In addition, 75.49% of the students mentioned that their university did not show sensitivity to the environment. They claimed that there were no organizations, seminars or applications.

Research studies carried out at other education levels are limited (Darçın & Çıbık, 2009; Shobeiri, et al., 2007; Yılmaz, Boone & Andersen, 2004). For example, Darçın and Çıbık (2009) examined levels of knowledge of 327 secondary school students about air pollution with respect to their gender, settlement units, educational level of the mother and father, the monthly income of the family, and geographic location. According to the results, although students had relatively more information on sources and negative effects of air pollution, they had insufficient knowledge about the air pollutants and their impacts. Moreover, it was observed that students' knowledge of air pollution was affected by the settlement units in which they study and the education level of their fathers. Similar study was conducted by Yılmaz, Boone and Andersen (2004) in order to identify students' views on environmental issues and to determine how these views differ by gender, grade level, previous science achievement, socio-economic status (SES), and school location. A total of 458 students in grade 4–8 classrooms completed a 51-item Attitude toward Environmental Issues Scale (ATEIS) involving 30 distinct concepts related to environmental issues such as air, water, and soil pollution, public awareness about environmental problems, and environmental protection. Results of the study indicated that high achievement in science courses resulted in more positive attitudes toward environmental issues. In addition, the study revealed that the older female students exhibited more support for environmental issues than did male students. Students with high family income, and those students living in urban areas, displayed more positive attitudes toward environmental issues than students with low family income and those living in suburban areas.

In the literature, there were also some studies conducted with teachers. For example, Yılmaz-Tüzün, Teksöz-Tuncer and Aydemir (2008) investigated 183 primary school teachers' knowledge about air pollution, ozone

layer depletion, acid rain and clean energy sources. The data were analyzed with quantitative methods. The results revealed that 50% of teachers did not have adequate information about these issues. Although the teachers knew basic air pollutants (e.g., carbon dioxide, methane, sulfur dioxide (SO2), and nitrogen oxides (NO_X), they did not have any idea about how these pollutants cause air pollution.

In the related literature, there were many studies aimed to determine the students' perceptions of environment and environmental issues such as air pollution, acid rain, ozone layer depletion, and global warming (e.g. Boyes, Skamp, & Stanisstreet, 2009; Khalid, 2001). However, the related literature indicated that there were a few research studies on these issues at secondary level (e.g. Shobeiri, et al., 2007). Therefore, in the present study, it was aimed to determine high school students' perceptions about these issues.

When related literature was examined, there were many studies on the identification of misconceptions about environmental problems (Arsal, 2010; Dove, 1996; Groves & Pugh, 1999; Papadimitriou, 2004; Summers, Kruger, Childs, & Mant, 2001; Yılmaz, Morgil, Aktuğ, & Göbekli, 2002; Yılmaz-Tüzün et al., 2008). For example, in the study of Arsal (2010) with 171 preservice science and classroom teachers, it was identified that the preservice teachers thought that with the increase of greenhouse effect, more fish deaths would occur in the seas, lakes and rivers and more earthquakes would occur in the world. In addition, most of them believed that increasing acid rain, using more fertilizers in agriculture and too many sun's rays were the causes of the greenhouse effect. Similar results were also found by Groves and Pugh (1999) conducted with 330 college students from the colleges of Education, Pure and Applied Sciences, Pharmacy and Health Sciences, and Liberal Arts. The results of their study indicated that students had incorrect ideas about consequences and causes of greenhouse effect. Students thought that the greenhouse effect increases chance of getting skin cancer and earthquakes. In addition, they incorrectly believed that holes in the ozone layer and too many sun's rays were the cause of greenhouse effect. In another study, Papadimitriou (2004) stated that preservice teachers had misconceptions on ozone depletion and acid rains. They also confused ozone depletion with greenhouse effect.

The present study attempted to determine high school students' perceptions of environmental issues. Examination of students' perceptions of environmental issues also will provide us information about students' scientific literacy, which will facilitate their future life. Therefore, this study will provide valuable contribution to the environmental education literature. The research question of the study is as follow:

What are the 10th grade students' perceptions towards environmental problems such as air pollution, global warming, greenhouse effects, ozone layer depletion, and acid rains?

METHODOLOGY
In this study, qualitative research method was used. In qualitative research studies, any situation is examined in detail and the researcher will try to find answers for why and how questions (Merriam, 2009; Yıldırım & Şimsek, 2013).

Design
Phenomenology argues the perceptions and experiences of individuals. It offers the researcher the ability to examine the facts that we know but do not understand exactly and to get depth information about them. (Patton, 2002; Yıldırım & Şimsek, 2013). In this study, it was aimed to investigate students' perceptions on environmental issues in depth and to determine their level of conceptual learning and misconceptions. Therefore, students' perceptions on environmental issues were demonstrated through phenomenological research design.

Participants
In this study, purposive sampling technique was utilized (Fraenkel & Wallen, 2000). Participants were randomly selected among the students in 10th grade level at a high school during the fall semester of 2013-2014. The high school was selected based on it convenience to be used for the researchers in terms of transportation during the study. In addition, the reason for studying with 10th grade students was that they were taught environmental chemistry in Grade 9 in their chemistry class. Five students participated voluntarily in this study. Three of the participants are female and two are male. Their ages were 15.

Data collection instruments
Interviews provide an information from individuals' own perspective and in their own words (Bogdan & Biklen, 2007). In this study, data were collected through semi-structured interviews to explore students' perceptions of environmental issues. Semi-structured interviews are in-depth interviews and provide the interviewer flexibility to explore details or further responses. A semi-structured interview consists of a pre-determined set of open-ended questions based on the topic areas. Some further questions might also be created during the semi-

structured interviews (Creswell, 2009). In this study, ten interview questions including some probes were prepared after review of the related literature (Aksan & Çelikler, 2013; Aktepe & Girgin, 2009; Boyes et al., 2009; Khalid, 2001; Papadimitriou, 2004). To ensure the content validity of the questions, researchers got expert opinions from two science educators and a chemistry teacher. Moreover, a pilot study was conducted with a 9th grade high school student. Based on the expert opinions and pilot study, the researchers revised the interview questions in terms of clarity of questions, compatibility and content. Before interviews were conducted, the researchers informed students about the purposes of the study and invited them to participate in the study. Each interview took about 25-30 minutes. All interviews were audio-recorded and transcribed verbatim. Sample interview questions were:

1) In your opinion, what may be the possible causes of air pollution?
2) What do you think about the possible changes in the world as a result of global warming?
3) What could be the cause of the depletion of the ozone layer?
4) What do you know about greenhouse gases?

Data analysis
Content analysis provides a systematically scientific method for the interpretation of raw data by using deductive or inductive approaches. With a deductive approach, the researcher examines the data by applying existing codes or categories in the literature. On the other hand, with an inductive approach, the researcher derives codes, themes and categories directly from the data (Marshall & Rossman, 2006). In this study, the data were analyzed via content analysis in order to get depth information about students' perceptions of environmental issues. Firstly, interviews were transcribed and written documents were formed. Then, these written documents were coded, and in this way themes and categories were established, inductively. Table 1 shows the categories and sub-categories (themes). Codes for sub-categories also were presented in the result section. Throughout the study, the names of female students were coded as Selin, Ece, and Oya and those of male students were coded as Okan and Deniz.

Table 1. Distributions of sub-categories according to categories

Categories	Sub-categories (Themes)
Air pollution	Air pollution
	Effects of air pollution on human health
	The most affected people by air pollution
	Causes of air pollution
	Participants own effect on air pollution
	The duties of individuals to prevent air pollution
	The duties of institutions to prevent air pollution
Global warming	Global warming,
	Possible changes in the world
	Precautions must be taken to prevent global warming
	The relationship between global warming and greenhouse effect

Greenhouse effect	Greenhouse effect
	Greenhouse gases
	Impact of greenhouse effect on the world
	Precautions must be taken to prevent greenhouse effect
Acid rains	Causes of acid rains
	Consequences of acid rains
	Precautions must be taken to prevent acid rains
Ozone layer	Causes of ozone layer depletion
	Effect of ozone layer depletion on living things

Validity and reliability

For reliability and validity of qualitative studies, researcher should ensure some criteria such as credibility, transferability and confirmability (Creswell, 2009). To ensure credibility of the results of this study, direct quotations from participants' interviews were provided in the result section by keeping their identities. In addition, this study was conducted with 10th grade students who had taken "environmental chemistry" course in their 9th grade chemistry class in order to discover realistic and accurate results on students' perceptions. Transferability refers to the degree to which the results of qualitative research can be generalized or transferred to other contexts or settings (Yıldırım & Şimşek, 2013). In the current study, the research context of the study was described in details in order to increase the transferability. Furthermore, confirmability refers to the degree to which the results could be confirmed or corroborated by others (Creswell, 2009; Yıldırım & Şimşek, 2013). For this study, two experts in qualitative study were separately analyzed the codes, categories and themes formed by the researchers in terms of eligibility. In addition, a person outside the field compared raw data and the result of the study for ensuring reliability of the study. Finally, another expert examined the data collection, analysis procedures, and results in terms of their appropriateness and coherence in order to enhance confirmability.

RESULTS

In this study, students' responses to the interview questions were analyzed qualitatively and categorized according to the themes (see Table 1). For each theme, codes were created regarding the students responses and their frequency of occurrence were shown in the related tables below.

Air pollution

When we looked at the Table 2, it was seen that participants had different opinions about the air pollution. Two participants (Oya and Deniz) defined air pollution as releasing of harmful things into the air. Regarding this definition, Oya stated that "I think it is release of harmful substances to the air by people". Views of the other participants (Selin, Ece, and Okan) were as follows, respectively: "I think air pollution is directly irresponsibility of people", "Air pollution is an environmental problem occurring due to our use of some substances unconsciously", and "It is dirty smoke coming from the chimney, exhaust fumes of cars etc., all kinds of factors that pollute the air".

Table 2. Students' codes about the air pollution

	Codes			
Participant	Irresponsibility	Unawareness	Harmful substances	Dirty fumes
Selin	X			
Ece		X		
Oya			X	
Okan				X
Deniz			X	

Effects of air pollution on human health

Table 3. Students' responses to the question: "What are the effects of air pollution on human health?"

	Codes	
Participant	Negative effects without an example	Negative effects with an example (e.g., respiratory tract infections, cancer, depression)
Selin		X
Ece	X	
Oya		X
Okan	X	
Deniz		X

Participants thought that air pollution had negative effects on human health. When they were asked to give an example, two participants, Okan and Ece could not give an example. On the contrary, Oya, Deniz, and Selin gave following examples respectively: respiratory tract infections (asthma, bronchitis), cancer, and depression. For instance, Selin expressed her idea as "It looks like a bad weather. People feel upset or depressed".

The most affected people by air pollution

Table 4. Students' responses concerning the question "Who do you think could be most affected by air pollution?"

	Codes	
Participant	People	
	Children	Older people
Selin	X	
Ece	X	
Oya	X	X
Okan		X
Deniz	X	X

All participants thought that air pollution mostly affects people. In fact, Selin, Ece, Oya, and Deniz stated that children are more likely to be affected by air pollution. In addition, Oya, Okan, and Deniz stated that older people are also affected by air pollution. For example, Oya stated that "Children will be affected the most because they are in development age. In addition, the shortage of health care is increasing with age, so I think the elderly are also very affected by air pollution".

Causes of air pollution

Table 5. Students' responses regarding the possible causes of air pollution

	Codes				
Participant	Fuels, Fossil fuels	Fumes from stoves, cars, cigarette and factory chimneys	Natural disasters	The destruction of forests	Nuclear power plants
Selin	X	X	X		
Ece		X		X	
Oya		X			
Okan	X	X		X	
Deniz	X	X			X

Table 5 indicated that students put forward more than one reason about air pollution. For example, Selin stated that fossil fuels are one of the reasons of air pollution and expressed her idea as follow: "The biggest cause of air pollution is irresponsibility and unconsciousness of people. Then fossil fuels and cars". In addition, the students agreed with fumes from stoves, cars, cigarettes and factory chimneys as one of the causes of air pollution. For example, Ece said that "Not afforested surroundings, smoking cigarettes, car exhaust, etc. can be given as examples".

Participants own effect on air pollution

Table 6. Students' responses about the effects of individuals on air pollution?"

	Codes		
Participant	Direct effect	Indirect effect	No effect
Selin		X	
Ece	X		
Oya	X		
Okan			X
Deniz	X		

All participants, except Okan, thought that they had an impact on air pollution. While Ece, Oya, and Deniz thought that they had a direct effect on air pollution, Selin believed that she had an indirect impact on it. For instance, Ece stated that "I have an impact on it. Deodorants that I used can create a cloud of harmful gases in the air. So, I have an impact on the air pollution, of course". On the other hand, Selin expressed her idea as follow:

> I do not use cigarettes, perfumes and drive car. I'm not going to go anywhere by car directly. I'm using the tram on weekends when I'm going somewhere or I prefer to walk. I do not think I have an impact on air pollution directly. But I might affect it indirectly because of my environment or other reasons.

The duties of individuals to prevent air pollution

Table 7. Students' responses about the duties of individuals to prevent air pollution

	Codes			
Participant	Awareness on air pollution	Public transport and electric vehicles	Afforestation	Using environmentally-friendly products
Selin	X			
Ece	X	X	X	
Oya		X		X
Okan		X		X
Deniz	X			

As Table 7 shows most of the participants express more than one opinion about the duties of individuals for preventing air pollution such as awareness on air pollution, using public transportation and environmentally-friendly products, and afforestation. For example, Ece stated that "I think we need to use public transport more actively, plant more trees, and further raise awareness on this issue".

The duties of institutions to prevent air pollution

Table 8. Students' responses regarding the duties of institutions

	Codes	
Participant	Effective control	Public awareness (seminars, posters, etc.)
Selin		X
Ece		X
Oya		X
Okan		X
Deniz	X	

According to Table 8, almost all participants thought that the duty of institutions was to raise the awareness of the public (via seminars, posters, etc.). For example, Ece expressed her idea as follow: "Our school can organize a seminar about it or the labels at the top of the cigarette box indicating the harmful of it could be done on the bottle of the deodorants in order to indicate their harm". Moreover, Deniz mentioned the effective control of furnace filters and the smoke-free areas. He said that "Chimney filters and the application of smoke-free air space must be control regularly".

Global warming

Table 9. Students' responses about the global warming

Participant	The death of the world	Dying polar bears / melting glaciers	Depletion of the ozone layer
Selin	X		
Ece		X	
Oya		X	
Okan			X
Deniz		X	

As Table 9 indicates, while most students described global warming as "Dying polar bears / melting glaciers", two of them expressed it as "The death of our world" or "Depletion of the ozone layer". For example, Okan stated that "I know that depletion of the ozone layer occurs due to the global warming". Ece also said that "Death is actually a direct result of global warming, we kill the world".

Possible changes in the world as a result of global warming

Table 10. Students' responses about the possible changes in the world as a result of global warming

Participant	Water shortages	Air pollution	Climate change
Selin	X	X	
Ece			X
Oya	X		
Okan			X
Deniz			X

Ece, Okan, and Deniz stated that one of the possible changes in the world as a result of global warming was climate change. For example, Ece expressed her idea as follow: "Future weather will not be like today. We may never see snow in the future. The weather will be much warmer". On the other hand, two participants (Selin and Oya) claimed that water shortages would be experienced as the result of global warming. In addition, Selin also stated air pollution would be increased in the future as the result of global warming. An illustrative statement from Selin's interview is below:

> I think water supply will be the biggest problem of the future as a result of global warming. For example after 100 or 200 years, we will be faced with completely run out of water. Thus, the human race will be destroyed gradually. In addition, people will need to use oxygen mask outside since one of the cause of global warming is air pollution. Air pollution will be increased in the future.

Precautions must be taken to prevent global warming

Table 11. Students' responses about how to reduce the effects of global warming?

Participant	Prevention of water pollution	The use of non-destructive gases and fuel	Preventing the establishment of nuclear power plants
Selin	X	X	
Ece		X	
Oya	X		
Okan		X	
Deniz		X	X

Four participants stated that the use of non-destructive gases and fuel reduce the effects of global warming. For instance, Deniz mentioned that "we cannot use the perfume since it damages the atmosphere". Moreover, Selin and Oya considered that people must not pollute the water. In addition, Deniz stated that nuclear power plants should not build in the country.

The relationship between global warming and greenhouse effect

Table 12. Students' views about the relationship between global warming and greenhouse effect

	Codes	
Participant	Yes	I do not know
Selin	X	
Ece	X	
Oya		X
Okan	X	
Deniz	X	

Students were asked the question "*Do you think there is a relationship between global warming and greenhouse effect?*" It was seen that all students, except Oya, answered "Yes" to the question. Oya stated that she did not have any knowledge about this issue. Okan, who believe that the relationship between global warming and greenhouse effect, expressed his idea as follow:

> Of course, there is a relationship. Let's think the world as a greenhouse. The ozone layer covers the world. In other words, if the rays do not go back, temperature of the world increases. Therefore global warming is related to the greenhouse effect.

Greenhouse effect

Table 13. Students' responses to the greenhouse effect

	Codes	
Participant	Harmful gases	Hot air / sunlight
Selin	X	
Ece		X
Oya		X
Okan		X
Deniz		X

According to the Table 13, four participants explained greenhouse effect by associating with hot air or sunlight. For example, Ece stated that *"Gas clouds cover the sky or air. These clouds keep the sun's rays over the world. Hence, these rays cannot reflect back again and hot air forms over the world"*. On the other hand, Selin described greenhouse effect as unpleasant gases. She expressed her idea as follow: "The greenhouse effect is a major problem resulting from global warming. I think it is destruction of the atmosphere by harmful gases released to the earth due to global warming".

Greenhouse gases

Table 14. Students' responses to the following question: "What do you know about greenhouse gases?"

	Codes	
Participant	Harmful gases to the environment (CO_2, O_3)	I do not know
Selin	X	
Ece		X
Oya		X
Okan		X
Deniz		X

Table 14 indicates that most students did not have knowledge about the greenhouse gases. Only Selin explained her idea about the greenhouse gases. She described gases that harm the environment as greenhouse gases. She

explained her idea as follow: "Firstly, carbon dioxide. Then, I think, ozone and other gases harmful to the environment might be greenhouse gases".

Impact of greenhouse effect on the world

Table 15. Students' views to the question "Do you think greenhouse effect have negative or positive impact on our world?"

	Codes	
Participant	Negative	Depending on circumstances
Selin	X	
Ece	X	
Oya	X	
Okan		X
Deniz	X	

As shown in Table 15, while four students thought that greenhouse effect had negative impact on the world, one student (Okan) stated that the impact of greenhouse effect on the world might vary, depending on circumstances. Okan expressed his idea as follow: "That can lead to bad results if its rate increases. It should be neither more nor less".

Precautions must be taken to prevent greenhouse effect

Table 16. Students' responses to the question: "How can we prevent the negative effects of the greenhouse effect?"

	Codes		
Participant	Reduce the use of harmful gases	Raise awareness	I do not know
Selin	X	X	
Ece			X
Oya		X	
Okan	X		
Deniz	X		

Table 16 indicates that students, except Ece, suggested two different precautions to prevent greenhouse effect. Ece answered "I do not know" to the question. Students suggested that use of harmful gases should be reduced and people should be informed about greenhouse effect. For example, Selin expressed her idea as follow:

> I think that perfumes and deodorants have the most negative effective on it. People use them very often. For example, our friends at school use them at every break. This affects both us and the world directly. As result of this, the atmosphere layer becomes thinner. Therefore, awareness of people on this issue should be raised. To do this, people should not be given only lectures on the subject by meeting somewhere. Instead of this, in my opinion, giving examples from around the world in a friendly atmosphere might be more effective to raise awareness.

Deniz also stated that "The use of harmful gases must be reduced as much as possible. There are hundreds of elements. I think, chemists can found something harmless and replace with these harmful gases."

Causes of acid rains

Table 17. Students' responses to the following question: "What would be the factors that lead to acid rain?

	Codes	
Participant	Gases (CO_2, nitrogen, etc.)	Polluted water
Selin	X	
Ece		X
Oya	X	
Okan	X	
Deniz	X	

Table 17 indicates that most of the students thought that some gases such as CO_2 and nitrogen lead to acid rain. One of the participants (Deniz) stated that harmful gases releases due to the use of cheap fuel gases cause acid rains. Moreover, one of the participants (Ece) thought polluted water as a factor that lead to acid rain. She stated that "Polluted water might be reason of acid rain because the clouds are composed of water evaporated from the earth. Therefore, we can be exposed to acid rain because of a dirty air".

Consequences of acid rains

Table 18. Students' responses to the following question: "What do you think about consequences of acid rains?

	Codes		
Participant	Diseases	Erosion of historical monuments and objects	Soil pollution
Selin	X		
Ece	X	X	X
Oya		X	X
Okan	X		
Deniz	X	X	

As seen in the Table 18, students described consequences of acid rains as diseases, erosion of historical monuments and objects, and soil pollution. Most of the students claimed that acid rains lead to diseases. For example, Selin stated that acid rains could cause genetic problems in the future. In addition to impact of acid rain on human health, Ece, Oya and Deniz emphasized effect of it on erosion of historical monuments and objects. For example, Deniz expressed his idea as follow:

> It has a very big impact on our lives. It causes of skin cancer. People are going to getting skin cancer one by one and cancer rate is increasing. It also leads to damage to historical monuments around us and our vehicles, having monetary value for us.

Moreover, Ece and Oya also highlighted the effect of acid rains on soil pollution. An illustrative statement from Oya's interview is below:

> For example, I know that it will be harmful to plants. When people are affected from the acid rain, it is impossible for the plants to avoid the damage of it. Yield will surely reduce. When acid rain falls to earth, it will reduce the yield and I know that it erodes historical monuments.

Precautions must be taken to prevent acid rains

Table 19. Students' responses to the following question: "What can be done to eliminate the negative effects of acid rain?

	Codes		
Participant	Raising awareness	Use of chimney filters	Increasing forest	Precautions for water pollution
Selin			X	
Ece				X
Oya	X			
Okan		X		
Deniz	X			

As shown in the Table 19, students suggested four precautions to prevent acid rains: raising awareness, use of chimney filters, increasing forest, and precautions for water pollution. While two students emphasized public awareness of acid rain, other each precaution was recommended by only one student. For instance, regarding use of filters, Okan stated that "Fuels that we used were harmful. We need to replace them or we should take the precautions if we have to use them. Harmful gases can be cleaned by building filters in chimneys on factories".

Causes of ozone layer depletion

Table 20. Students' responses to the following question: "What could be the cause of the depletion of the ozone layer?

	Codes	
Participant	Harmful/unpleasant gases	Human effect
Selin	X	
Ece	X	
Oya	X	
Okan	X	
Deniz		X

Table 20 indicates that most students pointed out harmful/unpleasant gases (e.g., gases released from burning fuels and chemical weapons) as a reason of the ozone layer depletion. In addition Deniz thought that human also was the cause of it. He stated that "I think the biggest cause is human. If there are no people and only animals live in the world, it would be a much better place than today".

Effect of ozone layer depletion on living things

Table 21. Students' responses to the question: "What do you think about the effect of ozone layer depletion on living things?"

	Codes		
	Harmful effects		
Participant	Shortening of life	Diseases / skin problems	No detailed explanation
Selin	X		
Ece			X
Oya			X
Okan		X	
Deniz		X	

Table 21 indicates that all the participants thought that ozone layer depletion has harmful effects on living things. While two students (Okan and Deniz) stated that ozone layer depletion causes diseases related to skins, another student (Selin) expressed that it causes the shortening of human life. On the other hand, although other two participants thought that it has negative effects on living things, they did not give detailed information about it. For example, one of them (Ece) stated "As a result of depletion of the ozone layer or more sun rays coming to earth, our world will suffer a great harm".

DISCUSSIONS and CONCLUSIONS
The results of the study revealed that air pollution was seen as a major problem. Participants put many reasons on the causes of air pollution. In a similar study conducted with 240 students studying in different parts from different universities, Özdemir and Yapıcı (2010) found that students perceived air pollution as a serious environmental problem. Although participants agreed that air pollution is a serious problem for the environment, they could not give detailed answers to the question: What measures should be taken to prevent air pollution?" They also failed to reveal examples of contaminants that pollute the air. This situation indicates that they had insufficient knowledge about air pollution. This result was supported by the study of Yilmaz-Tüzün et al. (2008). Their study also revealed that most of the participants did not have sufficient knowledge about air pollutants and factors causing air pollution. On the contrary, Darçın and Çıbık's (2009) study indicated that middle school students had relatively more information about sources of air pollution and negative effects of it.

In the study of Yalçınkaya (2013), participants focused on air and water pollutions, and problems with waste. They asserted that the insensitivity of people was the main cause of environmental problems. In addition, her study revealed that environmental awareness campaigns were seen as one of the solutions for the prevention of environmental problems. Similarly, in this study, participants thought that human activity was a major cause of air pollution and emphasized on environmental awareness to prevent it. Moreover, as in the other studies (e.g., Erdal et al., 2013), participants of this study highlighted the necessity of organizations or seminars on environmental problems. They thought that people's awareness was raised through little interesting posters and seminars which everyone could attend to.

Furthermore, participants of this study thought that media has an important role on building environmental awareness. However, they stated that such issues are not addressed sufficiently in the media. For example, Deniz stated that *"There are many issues in the public spotlight, but I have never seen anything about acid rain and air pollution"*. Suggestions of the participants for the prevention of environmental problems was supported by the study of Şenel and Güngör (2009) which found that programs related to global warming published by the media affected students' knowledge on this issue.

Regarding the global warming, research studies indicated that students generally know that global warming causes polar ice caps to melt (e.g. Boyes & Stanisstreet, 1992). Similarly, in this study, when participants were asked what comes to their mind when they hear the word global warming, most of them talked about melting of glaciers. For example, Oya stated that *"Here we know that melting of the glaciers. I read somewhere if it continues to heat up in this way, glaciers will melt more quickly. Even, Holland is going to remain under waters because the world's temperature rose 4 degrees"*.

The related literature indicates that students confuse environmental problems. For example, Khalid (2001) revealed that students confused global warming and ozone layer depletion. They failed to distinguish between the causes and consequences of these environmental problems. Moreover, other research studies revealed that the majority of students considered that the deformation of ozone layer causes to the global warming (Boyes & Stanisstreet 1997; Boyes, Stanisstreet, & Papantoniou, 1999; Koulaidis & Christidou, 1996; Mason & Santi, 1998; Meadows & Wiesenmayer, 1999). In addition to these, Aksan and Çelikler (2013) found that student confused the reason of the greenhouse effect and the precautions that can be taken to reduce it. The findings obtained in this study are similar to aforementioned results in the literature. During the interview, one of the participants of this study said that "You've asked many questions and so many are going to come to the same thing. Therefore, I give same answers to them". This indicates the students' failure to distinguish between the causes and consequences of the environmental problems.

In addition to low level knowledge, research studies indicate that students have misconceptions related to environmental problems (Boyes & Stanisstreet, 1992; Boyes et al. 1999; Bozkurt & Koray Cansüngü, 2002; Dove, 1996; Groves & Pugh, 2002; Koulaidis & Christidou, 1996; Mason & Santi, 1998). The results of this study also supported that some students had misconceptions about greenhouse effect, global warming and depletion of ozone layer. One of the participants (Okan) stated that "I know that global warming occurs due to the depletion of the ozone layer". Similarly, Meadows and Wiesenmayer (1999) found that students tend to establish a causal relationship between depletion of ozone layer and global warming.

In conclusion, this study revealed that students had low level knowledge and perception about environmental problems such as air pollution, greenhouse effect, global warming, acid rain, and depletion of ozone layer although they took a course related to global environmental problems in the their 9th grade class. The reason of their insufficient knowledge and misconceptions might be due to education they received previously in their school as stated by other research studies (e.g. Aksan & Çelikler, 2013). In addition to school environment, family and social environment might be the reason of low level of perception and knowledge. Moreover, having insufficient knowledge and misconception related to air pollution might be due to poor scientific literacy among the students which found in other studies (Chin, 2005).

SUGGESTIONS
In conclusion of the study, following suggestions can be made for environmental education:

- If the people's irresponsibility is thought to be major cause of environmental problems, people's awareness of environmental issues should be raised through a variety of environmental education.
- In schools, the environmental education should be supplied in which students' attention were taken to the environmental problems through various social and educational organizations.
- At all levels of formal and informal education, conferences, symposia, and panels on current environmental issues such as acid rain, depletion of ozone layer, the greenhouse effect and global warming should be organized.
- Not only the schools but also the parents, social communities and the media should support the students with the same sensitivity. Mass media such as TV and newspapers should inform people about the negative effects of environmental pollution.
- Regarding the future research studies, students' perceptions of environmental issues could be investigated at different level of secondary education unlike from this study.
- The effectiveness of environmental course could be explored by comparing perceptions of students taking the course with perceptions of those did not take.

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LIVING ARRANGEMENT PROBLEMS, ACADEMIC PERFORMANCE AND COPING STRATEGIES OF FIRST YEAR COLLEGE STUDENTS

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Abstract: The ability of the first year college students to cope with problems during their first year in college is crucial for their adjustment. Thus, this study essentially investigated the living arrangement problems, academic performance and coping strategies of first year college students. It made use of the descriptive correlational method of research with 975 respondents. The instruments used in the study are self made questionnaire, documentary analysis and Coping Strategies Inventory. Results show that most of them have Satisfactory Academic Performance and always use emotion focused coping strategy specifically positive reinterpretation and growth, acceptance and turning to religion. First year college students are in a time of transition from living with their parents to living on their own. Their coping strategies are important to help them deal with living arrangement problems they encounter.

INTRODUCTION

It has been established that a major developmental task of late adolescence is the formation of a unique adult identity. One manifestation of this process is leaving the family home and establishing a residence of one's own most especially when he enters college. Similarly, the change from the secondary life to college represents a specific life transition that is acknowledged as challenging and potentially stressful life event.

Significantly, first year college students face a difficult decision in determining where they will live during the commencement of their college years. One potential outcome that can result from living arrangements during the college years, especially the first year students is its effect on academic performance. (Sanchez 2012)

Generally, commencing university is accompanied by major lifestyle changes for students who move into new forms of accommodation. Students who live in college dormitories during their first year are more socially prepared for life. One reason for this is that students learn what it is like to live away from home and their parents. They begin to learn self responsibility as well as fiscal responsibility. Students also meet many new people who may be taking similar classes and other students who have the same interests. These are all important social connections to make as a young adult.

Although attending college can be a rewarding experience, it also can be a time of considerable anxiety and stress for students. The combination of many specific demands of college life such as planning for the future, struggling with exams and assignments, meeting the demands of challenging professors, deciding on a major and transitioning into financial and emotional independence, can be an overwhelming experience for many college students. Further, students may wonder whether they will be able to meet their own expectations as well as those of their parents and friends (Dyson and Renk, 2012).

First year college students face academic demands which include grade competition, lack of time and issues relating to time on task management, the need to adapt to new learning environment in terms of increased complexity of the material to be learned and the greater time and effort required to do so, the need to constant self-regulation and to develop better thinking skills. This level in an individual's academic life is considered stage of inside and outside pressures by the world to succeed, goal direction, financial worries, social pressure, concerns about uncertain futures, social problems and opportunities, thus requiring preparation and focused with often conflicting priorities. Thus, much of the success of the adjustment of the freshman depends on their coping patterns. And as the freshman goes into college level, one carries one's own unique coping skills as he gradually makes way to become adept with the variety of problems one will meet in adjusting with the challenges of the life in college. One's ability to overcome difficulties in adjustment during the freshman year will more likely depend on the coping patterns employed as one journeys to the first year of college life.

This is because the first year students are plunged in a new environment and adjustment to academic life is one of their concerns. It is on this context that the researcher embarked on the study.

THE STUDY

College is an experience that some students find the most difficult experience of their lives; therefore it is not hard to see why some students drop out or have significantly low grades. During college, adjustment is a huge factor towards accomplishment. One study (Lapsley, Rice and Fitzgerald, 1990) found that for many adolescents, departure from home is a major transition; it takes its toll on the level of adaptation achieved by the students.

It is important to examine factors that influence successful adjustment to college (Carver, 2011), and the ability to cope with this new experience may be an important variable. The ability to successfully cope in the college environment is a critical skill to acquire. The effects of perceived social support are mixed. Support from the university and outside contributors like family, friends and mentors can make a huge impact on a student's success. Support such as emotional, academic, financial are tremendous factors in the success of a college student.

Stress and academic performance are omnipresent issues in college students' lives. Endler and Parker (1990) argue that people develop distinct styles of coping when responding to stressful situations. Coping style is the typical manner in which an individual will confront a stressful situation. Adjusting to college can be a very challenging time for some students. It is very pertinent that one adjust properly because if they do not, it can lead to changing of schools, or even to failure to pass their classes. (Boulter, 2002)

This study essentially investigated the living arrangement problems, academic performance and coping strategies of first year college students of Cagayan State University Andrews campus. Specifically, it determined the profile of the participants, their living arrangement problems, academic performance, coping strategies, the difference in academic performance and coping strategies.

This study made use of the descriptive correlational method of research. This research design gathers data through the questionnaire technique to elicit information on the living arrangement problems, academic performance and coping strategies of first year students of Cagayan State University Andrews Campus. It looked into the relationship of living arrangement problems and coping strategies of students. There were 975 students who participated in the study. The instruments used in the study are self made questionnaire, documentary analysis and Coping Strategies Inventory. Frequency count, percentage, chi square test of independence, Kruskal Wallis Test and Mann Whitney U test were used in the analysis of the data.

FINDINGS

Results disclose that the mean scores on living arrangement problems along academic and family are 2.66 and 2.71 respectively. Problems along academic include difficulty of the subjects, the bulk of school work and the inability to concentrate. This is because the freshmen students are plunged in a new academic environment where they find the subjects in college more difficult compared to high school. Academic demands include grade competition, lack of time and issues relating to time on task management, the need to adapt to new learning environment in terms of increased complexity of the material to be learned and the greater time and effort required to do so, the need to constant self-regulation and to develop better thinking skills. On the other hand, problems along this area consist of missing the comforts of home and care of parents. The students experience difficulty being separated from their parents. First year college students fail to achieve the maximum of happiness and efficacy in college because they are homesick. Even when there are groups such as clubs, organizations and associations which can provide companionship and psychological support, the emotional security provided by the family can hardly be equaled by any other institution. There is no better for the love and care that parents can give their children which make these students feel homesick.

Along coping strategies, Positive reinterpretation and growth, acceptance and turning to religion are always used by the respondents. This means that the students take a positive outlook on the stressful situation that they are in and become a better person after overcoming difficulties. They have the capacity to turn a negative situation into a positive one and display an optimistic perspective. As a result, they learn something from experience and look for something good in what is happening. Many things in life are out of our control; it is simply not within our power to change them. Worrying and fretting about them will just create chronic stress and undermine our physical and mental health. Acceptance of a situation is experiencing it for what it really is, without defense or distortion, and letting it be. This result is related with positive reinterpretation and growth. When the students have difficulties, they accept the situation and find meaning from the situation which makes them better persons.

Furthermore, results show that academic performance is significantly related with birth order and college. Academic performance varies depending on the order of their birth in the family. This can be attributed to the fact that most of the respondents are first born children in the family. According to Alfred Adler, in general, firstborn children have been found to be responsible, assertive, task-oriented, perfectionist, and supporters of authority. Firstborns often feel pressure to succeed or perform well, either by parents or through their own inner drives. They often are called on to take care of younger siblings or do chores because they are

responsible. Firstborns also feel pressure to be good examples for their siblings. (http://www.healthofchildren.com/B/Birth-Order.html#ixzz3QGuEkllW)

As regards the relationship between living arrangement problems and coping strategies, academic is significantly related to active coping, planning, positive reinterpretation and growth, and acceptance. When students experience academic problems, they concentrate their efforts on doing something about it and take additional action to try to get rid of the problems, come up with a strategy about what to do and think about how they might handle the situation as well learn something from experience and look for something good in what is happening and learn to live with it, and accept the reality of the fact that it happened.

Moreover, family problem is significantly related with turning to religion. This means that if the students encounter problems with their family, they put their trust in God, seek God's help, pray more than usual. The result of the study is confirmed by (Kark et al. 2010) that one of the socially constructed ways to cope with adversity is through religious beliefs. The impact of faith, and of religious observance and that religious observance appears to have mitigated stress and enhances host resistance.

Significantly, financial problem is related with planning. This implies that when financial problem arises, they make a plan of action as well as think about how they might best handle the problem. Likewise, personal problem is related with active coping. This means that when they experience difficulties in their personal life, they do something about it and take actions to solve the problem. On the other hand, personal problem is related with suppression of completing activities. This implies that when they encounter personal problems, they put aside other activities in order to deal with their problem and they prevent other things from interfering with their efforts to deal with their personal problem. Social problem is also related with active coping. This means that when the students experience social problem, they focus their efforts on doing something as well take additional steps to solve the problem.

Also, social problem is related with planning and positive reinterpretation and growth. This means that when they encounter difficulties in their social life, they make a plan of action when it arises as well as think of how they can best handle the problem as well as grow as a person and learn from experience.

CONCLUSIONS

First year college students face stressful situation but it is a necessary part of the learning process. Students living in boarding houses experience difficulty along academic and family areas. This can be attributed to the fact that living away from home requires a lot of adjustments on the part of the students as well as coping with the novelty of subjects learned in college. Also, comforts are given up and one has to face the rigors of living independently. On the other hand, social area is considered as never a problem because students living in a boarding house gain friends along the way as they interact and relate with their board mates.

College students employ both problem- focused and emotion-focused coping strategies since this is ultimately aimed at reducing or managing the distress that is associated with the stressful situation. However, they always utilize emotion-focused coping strategies. This is attributable to the characteristics of adolescents where they are on the process of developing their emotional maturity and tend to do activities that gain approval and acceptance from peers. As a result, adolescents have the greater tendency to expect positive outcomes; optimism is associated with better adjustment.

Moreover, college students are in a time of transition from living with their parents to living on their own. A set of novel responsibilities and roles comes into their lives as the students make a move to a new stage.

Hence, CSU administration through the Office of Students Services and Welfare should strengthen linkages with owners of boarding houses since most of the first college students are living in a boarding house. This is to ensure that the students are safe while away from home. Also, guidance counselors should intensify programs such as formation of affiliation groups composed of first year students to help the college freshmen cope with whatever problems they encounter during the transition period from high school to college. Lastly, other psychological changes in students brought by college education are probable topics for further research.

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MULTIPLE CHOICE TEST RANDOMIZER

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Abstract: Computer Aided Assessment (CAA) has been deployed in higher education to administer examinations in which the responses are electronically recorded, assessed, or both. This study developed and assessed the Multiple Choice Test Randomizer. Specifically, it achieved the following objectives: Identified the preferred delivery method of assessment of the Students; identified the preferred type of test of the Students; identified the procedures of Testing Administration and Scoring; Developed the Multiple Choice Test Randomizer (MCTR); and determined the usability of MCTR.

The study found out that 50.86% of the responses were computer aided, 43.43% were paper and pencil, 4.5% were board work and 1.4% was others; 45.14 of the responses were multiple choice, 22.29% were true or false, 17.14% were essay 14.86% were matching type and .57% were others; Test papers were distributed by the professors to students; Incremental Build Model is used in software development and software was usable.

The researcher concludes that the Students prefer computer-aided; Students prefer multiple choice tests; testing administration is manual; Incremental Build Model is an effective tool in software development HTML, CSS, PHP and MySql were effective tools; and software was evaluated usable.

INTRODUCTION

Computer Aided Assessment (CAA) has been deployed in higher education for the past five decades. Computer software was first created to test the behavior of student's machine-language submissions. CAA is a method of administering examinations in which the responses are electronically recorded, assessed, or both. It offers an easy-to-use environment for preparing questions, conducting exams, and administering results.
CAA makes possible a detailed analysis of test results with minimal effort. This can be used to identify areas within the course where the students have difficulty, as a result alerting professor to the possible need to adapt their teaching. Or maybe it could be used to identify trends and patterns within the student group. Questions which are not successful at discriminating between students can readily be identified and improved for future years.

derby.ac.uk (2014) states that computer assisted assessment is the application of computers to assessment processes, including delivery of tests, capture of responses and marking by either computer or human marker. These tests can be used for both summative and formative assessment with most tools providing a variety of feedback and question options allowing for the inclusion of rich media such as animated diagrams, videos and simulations for added authenticity.

Bull, et al. (2002) summarized the uses of CAA: a.) diagnostic because it is used in ascertaining students' skills levels prior to learning events, b.) formative because it is carried out during a learning event and c.) Summative because it is carried out at the end of the learning event

According to economicsnetwork.ac.uk (2014), CAA may be stand alone and specific to certain machines within a computer laboratory based on a local network (intranet) or as is increasingly common, web-based.

Web-based is software you use over the internet using a web browser. According to Desousa (2008), Web-based application has four core benefits. These are the following: 1) Compatibility. Web-based applications are far more compatible across platforms than traditional installed software like web browsers. 2) Efficiency. Everyone hates to deal with piles of paper unless they do not have any other alternatives. The benefit of web-based solution makes services and information available from any web - facilitated Personal Computer (PC). 3) Security of live data. Normally in more complex systems, data is moved about separate systems and data

sources. In web - based systems, these systems and processes can often be merged by reducing the need to move the data around. Web - based applications also provide an additional security by removing the need for the user to have access to the data and back end servers. 4) Cost Effective. Web - based applications can considerably lower the costs because of reduced support and maintenance, lower requirements on the end user system, and simplified plans

According to economicsnetwork.ac.uk (2014), the Georgia Department of Education (GaDOE) is providing the 2013-2014 release of the Georgia Online Assessment System (OAS). The OAS represents a dedicated resource for schools, districts, classroom teachers, students and parents that allows for ongoing classroom instruction and student learning.

The site allows educators to have access to test items aligned to the state mandated curriculum to develop assessments that inform teaching and learning. It allows students and parents transparency on the expectations placed on students relative to improving student achievement.

The Abra State Institute of Sciences and Technology (ASIST) is the only state college in the province of Abra. It is an agricultural school that offers Bachelor of Science in Agriculture and Bachelor of Science in Forestry. Moreover, it also offers science and technology courses such as Bachelor of Science in Mathematics (BSMath), Bachelor of Science in Biology (BSBIO), Bachelor of Science in Information Technology (BSIT). In addition, it also offers the courses Bachelor of Science in Secondary Education and Bachelor of Science in Elementary Education. Based on the records in the office of the Registrar, there are 1900 students, as of June 2014 who are enrolled in all courses including the high school students. Faculty workload shows that a faculty member handles a maximum class size of fifty students.

Assessment and evaluation are important parts of the teaching and learning process. Professors in the Abra State Institute of Sciences and Technology are required to conduct diverse forms of assessments. However, the administration of assessment is tiresome and cumbersome because the assessment is done manually. Based on observations, students oftentimes tend to talk with their seatmates. This make the professors keep on roaming around the room and try to warn the students and most of the time this would drain their energy.

The researcher sought the opinions of three professors from the IT Department and has this to say, "In lecture class having fifty students, most of the students tend to communicate to each other either by words or by signal in order to send and receive answer(s). If a student caught several times doing it and seems to ignore warnings, he/she is asked to move out of the room and take another form of exam later."

After the examination proper, hardship of the professors is not yet over because it is only the beginning. Individual checking and scoring of examinee's test paper is even harder. It challenges the professor's patience and perseverance to stay awake late at night to finish the task. Errors and inconsistencies in scoring are often times encountered. Delays in checking and scoring due to hard to read penmanship prolongs the distribution of examination result.

In response to the above scenarios, the development of Multiple Choice Test Randomizer (MCTR) concept was born to provide a software solution that the Professors and Students need. MCTR is a web-based application running on PHP, Apache and MySQL.

This study developed the Multiple Choice Test Randomizer. Specifically, it achieved the following objectives: a) Identified the preferred delivery method of assessment of the ICT Students. b) Identified the preferred type of test of the ICT Students. c) Identified the existing procedures of Testing Administration and Scoring. d)Developed the Multiple Choice Test Randomizer (MCTR); and d) Determined the usability of Multiple Choice Test Randomizer in terms of: Usefulness, Ease of use, Ease of learning and Satisfaction.

THE STUDY

The inputs of the study were preferred delivery method of assessment, preferred type of test of the ICT students, procedures of the existing testing practice, and components of multiple choice question. The process box shows the activities of the researcher from determining of respondents, validation of data, constructing of the software until usability testing of the software. Lastly, the output box displays the outcome using the inputs and executed by the processes.

The respondents were two hundred fifty one (251) ICT students and five (5) Faculty members.

The freshmen and the sophomore students of both amalgated (curriculum is synchronized with other state university and colleges in the Cordillera Administrative Region) and ladderized of ICT Department were chosen as the respondents on the preferred type of delivery method of assessment and preferred type of test as they are still to be in the adjustment period in the college way of life while respondents to determine the usability of the developed Multiple Choice Test Randomizer, worthy to be used by the entire college, were the third and fourth year ICT students and ICT faculty members. The third and fourth year ICT students were chosen because they have Software Engineering and Software Analysis and Design subjects wherein software development life cycles are discussed and the fact that they are also required to submit simple application programs and test its usability at the end of the semester. The ICT faculty members, too, were tapped to do usability test of the software because they have the expertise on software development, user interface design, and because they are the direct or hands-on users of the software.

Test paper provides the information on components of Multiple Choice Test (MCT).
The CSIT faculty members also provided the procedures on administration and scoring.
The researcher personally floated and collected the questionnaire to ensure a one hundred percent (100%) retrieval.

Data Instrumentation

For objective 1, the study used a survey questionnaire validated by ten Agriculture and Education students. It was administered to the students to identify the preferred delivery method of assessment.
For objective 2, the study used a survey questionnaire also validated by ten Agriculture and Education students. It was administered to the students to identify the preferred type of test.
For objective 3, the study used interview and observation. It was conducted to the ICT faculty members to determine the procedures on the existing testing administration and scoring. The study also used documentary analysis on test paper having multiple choice test format. It was administered to determine the components of Multiple Choice Test (MCT).
For objective 4, the software was created using the Incremental Build Model. The model consists of four stages Analysis, Design, Code, and Test.

Data Analysis

Data from the respondents were interpreted using frequency count based on the highest number of responses of the preferred delivery method of assessment and type of test of ICT students.
The usability of MCTR was tested with the application of USE questionnaire. Responses from the students and Faculty members were interpreted with the Likert Scale and descriptive ratings as shown in table 2.

Table 2 Lickert Scale

Point of Scale	Mean Rating	Descriptive Equivalent Rating (DER)	Descriptive Interpretation
5	4.20-5.00	Strongly Agree Usable	
4	3.40-4.19	Agree	Usable
3	2.60-3.39	Neutral	Usable
2	1.80-2.59	Disagree	Not Usable
1	1.00-1.79	Strongly Disagree	Not Usable

The variables with responses within the mean range of 2.60 to 5.00 were interpreted as Usable while those variables with responses within the range 1.00 to 2.59 were interpreted as Not Usable.

FINDINGS

50.86% of responses from the ICT students were computer-aided and only 43.4% were Paper and Pencil. This implies that the preferred delivery method of assessment of the students is computer-aided. It is by this reason that the researcher decided to create a computer aided assessment tool such as MCTR.
Yet, this is in contrast with the study of Sheader,et.al (2006) where more students were "confident" about paper-based work as a method of assessment (91%) and only 50% made the same claim for CAA.

On the hand option "others" got the lowest responses. Two respondents indicated "actual or practical testing". This means that the respondents preferred assessments of skills by means of application.

45.14 % of the responses from the ICT students were Multiple Choice. This implies that the preferred type of question of the students is Multiple Choice Test (MCT). This also entails that students tend to like a type of test in which it requires a less of writing especially so when the assessment period is limited. It further implies that students like to perform an assessment which limits error on grammar and spelling. Taking a Multiple Choice Test generally improves students' performance (Carrier &Pashler, 1992)

Like ELE, an online software packages designed to deliver assessment to students of university of Exeter (as.exeter.ac.uk, 2014), the MCTR provides multiple choice among question types. Multiple Choice Test, if done correctly, students can quickly respond to many items, allowing wide sampling and coverage of content (Carrier &Pashler, 1992).

On the other hand option "others" got the lowest responses which is .57 % of the total responses. One respondent indicated enumeration. This means that the respondent is fond of memorizing lessons.

Based on personal interviews with faculty members, observation and personal practice, the administration of testing begins when the Professor formulates and encodes questions. The standard components of Multiple Choice Question are item number, question, options based on the test paper analysis. Printing of the questionnaire is done next. The professor may either reprint or photo copy in order to reproduce the questionnaire.

The testing administration proper is the actual distribution of test paper to the examinees. Afterwards, the test papers are collected by the professor. Individual checking and scoring of test paper is next. It is in this part where professors spend a lot of time. It is also in this part wherein error and inconsistencies of scoring occur. Test result is distributed to the students a week after the exam date.

The software was developed by dividing the whole program into four separate modules. The four modules were: a) formulation and encoding of question, b) registration and validation, c) user log in and validation, d) testing and scoring and e) result.

In encoding questions, It is suggested that user must have to follow the format in Figure 5. First column contains the question, followed by options form a to d. The next column fifth column contains the correct answer . Lastly, the sixth column contains the item number for each question.

After, the encoding of questions. Save the file in csv format by clicking the save as type drop down list, then, select CSV (comma delimited). Type the file name and click Save button.

The Uploading of questions to MCTR begins in typing www.andwesign.org/gui/upload.php. Select the drive where your file is located. Type the complete filename including the .csv file extension. Click upload.

The welcome page is the very first page that MCTR serves to all the computers that request for the service. It displays a text greeting along with the capabilities that it may offer for the user. Multiple users may be served at the same time.

The Registration form and validation is responsible for allowing users to input personal information. It ensures that all the needed user information is present and the information is stored only once. However, it greatly suggested that user a must only use up 6 characters and not to input an email account in the username textbox. Users should also use single name only. When having two names like excel Philip, It is suggested that user must use underscore or dash to make the single word only.

The User login form and validation form is responsible for accepting username and password. It ensures only the authorized users permitted by the Professor to register in the system may take the exam and has not taken the exam yet. Otherwise, the software returns back or displays in the screen the result of the exam.

The testing and scoring is responsible for fetching the all the questions that were encoded by the subject teacher. It systematically randomized the questions so that there will be no same question may be posted on the screen at the same time. This effectively eliminates the issue of cheating among seatmates. It also ensures consistent and reliable scoring and recording.

In addition, another feature of MCTR that is present in this page is the reminder of the user of how many questions are still left to answer. The number of items decreases by one every time the user clicks the submit button.

The result module is responsible for displaying the recorded score. It displays the correct number of items over the total number of items together with the corresponding percentile. The result module shows the number of examinees who took the exam. Moreover, the software also prints the personal details arranged in alphabetical manner, the number of correct items, the total number of times and the corresponding percentile score of all the users.

The MCTR Usability
Table 3.Usability of MCTR in terms of Usefulness

Indicator	Mean	Descriptive Equivalent Rating	Descriptive Interpretation
It helps me be more effective	4.83	Strongly Agree	Usable
It helps me be more productive	4.59	Strongly Agree	Usable
It is useful	4.66	Strongly Agree	Usable
It gives me more control over the activities in my life	4.39	Strongly Agree	Usable
It makes the things I want to accomplish easier to get done	4.68	Strongly Agree	Usable
I saves me time when I use it	4.74	Strongly Agree	Usable
It meets my needs	4.44	Strongly Agree	Usable
I does everything I would expect it to be	4.5	Strongly Agree	Usable
Overall mean	4.6	Strongly Agree	Usable

Table 3 discloses the insights of the respondents as to usefulness of the developed Multiple Choice Randomizer. The respondents strongly agreed with the mean rating of 4.6 described as Usable. This means that users think that the software would help them to be effective and productive and found the software beneficial to them.
This finding was concluded from the individual indicators which were all rated as Strongly Agree. The highest mean rating of 4.83 implies that the users strongly agreed the software helps them to be more effective. However the indicator "It gives me more control over the activities in my life" was rated lowest with the mean rating of 4.39 described as Usable.

Table 4. Usability of MCTR in terms of Ease of Use

Indicator	Mean	Descriptive Equivalent Rating	Descriptive Interpretation
It is easy to use	4.85	Strongly Agree	Usable
It is simple to use	4.84	Strongly Agree	Usable
It is user friendly	4.68	Strongly Agree	Usable
It requires the fewest steps possible to accomplish what I want to do with it	4.53	Strongly Agree	Usable
It is flexible	4.54	Strongly Agree	Usable
Using it is effortless	4.48	Strongly Agree	Usable
I can use it without written instructions	4.5	Strongly Agree	Usable
I don't notice any inconsistencies as I use it	4.31	Strongly Agree	Usable
Both Occasional and regular users would like it	4.36	Strongly Agree	Usable
I can recover from mistakes quickly and easily	4.41	Strongly Agree	Usable
I can use it successfully every time.	4.69	Strongly Agree	Usable
Overall mean	4.56	Strongly Agree	Usable

Table 4 shows the perceptions of the respondents on the software in terms of Ease of Use. The users strongly agreed as verified by the mean rating of 4.56 described as Usable.
Of the 11 indicators under this category the indicator "It is easy use" was rated by the respondents as the highest with the mean rating of 4.85 described as Usable. It means that users find the software straightforward. On the other hand, the indicator "I don't notice any inconsistencies as I use it" was rated lowest with the mean rating of 4.31 described as Usable. This means that users found using the software reliable.

Table 5. Usability of MCTR in terms of Ease of Learning

Indicator	Mean	Descriptive Equivalent Rating	Descriptive Interpretation
I learned to use it quickly	4.76	Strongly Agree	Usable
I easily remember how to use it	4.65	Strongly Agree	Usable
It is easy to learn to use it	4.73	Strongly Agree	Usable
I quickly became skillful with it	4.65	Strongly Agree	Usable
Overall mean	4.7	Strongly Agree	Usable

As to ease of learning, table 5 reveals that the respondents strongly agreed as proven by the mean rating of 4.7 interpreted as Usable.

The indicator "I learned to use it quickly" was evaluated as the highest with the mean rating of 4.76 and described as Usable. This means that the respondents learned to use the software fast. While indicators "I easily remember how use it" and "I quickly became skillful with it" were rated as lowest with the mean rating of 4.65 and described as Usable. This means that users were already "experts" in using the software even in a short span of time. This also means that the users were accustomed to computers that they can easily manipulate software.

Table 6 Usability of MCTR in terms of Satisfaction

Indicator	Mean	Descriptive Equivalent Rating	Descriptive Interpretation
I am satisfied with it	4.76	Strongly Agree	Usable
I would recommend it to a friend	4.75	Strongly Agree	Usable
It is fun to use	4.71	Strongly Agree	Usable
It works the way I want it to work	4.55	Strongly Agree	Usable
It is wonderful	4.74	Strongly Agree	Usable
I feel I need to have it	4.7	Strongly Agree	Usable
It is pleasant to use	4.51	Strongly Agree	Usable
Overall mean	4.44	Strongly Agree	Usable

Table 6 displays the respondents rating on usability of MCTR in terms of Satisfaction. The Indicator "I am satisfied with it" was rated as the highest with the mean rating of 4.76 and described as Usable. This means that the respondents were contented. They are comfortable with the features, graphical user interface, and the user experience.

On the other hand, the indicator "It is pleasant to use" was rated as the lowest with the mean rating of 4.7 and described as Usable. This means that users enjoyed while using the software. This maybe because it was their first time using such type of examination in their school lives.

Table 6 displays the overall rating of usability in terms of satisfaction was 4.44 and described as strongly agree and interpreted as usable. The table further shows that the descriptive equivalent rating of the weighted mean was Strongly Agree. This means that the users were satisfied in using the software.

CONCLUSIONS

The preferred delivery method of assessment of the ICT Students is computer-aided.
The preferred type of test of the ICT Students is on multiple choice tests.
The existing testing administration is manual and paper-based.
Incremental Build Model is effective tool in software development. HTML and CSS are tools that can be used in the design of user interface. PHP and MySQL are tools that can be used to create a computer-aided assessment.
The software was evaluated usable.

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PARENTAL INVOLVEMENT ON PUPILS' PERFORMANCE: EPSTEIN'S FRAMEWORK

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Abstract: Parental connection capitulate pupils enhanced performance in school; thus families must ascertain a supportive home environment for their children as learners. This study surveyed the influences of parent-supported using Epstein's framework on the different parenting styles and on its effect on bridging the gap between parents, pupils and school routine. It also viewed on parents' socioeconomic status and educational attainment to verify if these could affect the parental involvement. The study utilized the naturalistic paradigm along with varied instruments which constituted the qualitative-explanatory approach to cross check the data gathered. The results revealed that parent involvement for high and low performing pupils' on socioeconomic status and parents' educational attainment do not have any bearing on the type of parental involvement. And parenting type has a moderately substantial relationship with higher academic performance. These pointed out to the conclusion that parental involvement has a positive impact on pupils' academic performance. It is suggested that both the nurturing and supportive school and home environment should work mutually in offering successful pupils; consequently, the research output, is the implementation of Parenting Education in the chosen community as extension program in the university.
Keywords: naturalistic paradigm, (PI) parental involvement, Epstein's framework

INTRODUCTION

Parent involvement in schools is more than attending homeroom and PTCA meetings. Learners of all groups and levels yield when their supportive parents are implicated in their education. One facet of parent involvement that has large impact on pupil's achievement is parental expectations. Pupils accomplish more when their parents anticipate more. Learning environment must create an effective partnership by providing an open and communicative milieu with its wider community, bridging the gap between the classroom and the home, and the school and the family.

Both pupils and schools benefit when parents or guardians are concerned in education. Reflect of yourself as the teacher's partner in managing your child's instruction. The parents are the most prominent factors on the lives of the children (Zedan, 2011). Hence it is significantly key in to hit upon out the parents feelings or reactions about school involvement and their perception on their roles in such interaction (Radu, 2011). The parents also play a part in the scheming of all aspects of education hand in hand with the neighborhood. The participation of parents is multi-dimensional, and is composed of an assortment of types of behavior, attitudes, and parental prospect (Toran-Kaplan, 2004). (Rahman, 2001) When parents get caught up with their children's studies, pupils carry out better. While doing research also shows that parental contribution is necessary in the education of the children and leads to academic gains (Wright, 2009). The academic profits for the learners with their parents concerned include advanced grades and examination scores and constructive attitudes about schooling. Learning milieu must do their part to encourage parental involvement in educational undertakings.

Parental attachment is likening to a perception in social sciences which is a charge loaded term parent involvement. It is distinct as having a responsiveness of and interest in learning, understanding of the interface between parenting skills and student sensation in schooling, and a commitment to unswerving communication with educators about student development (Pate and Andrews 2006).
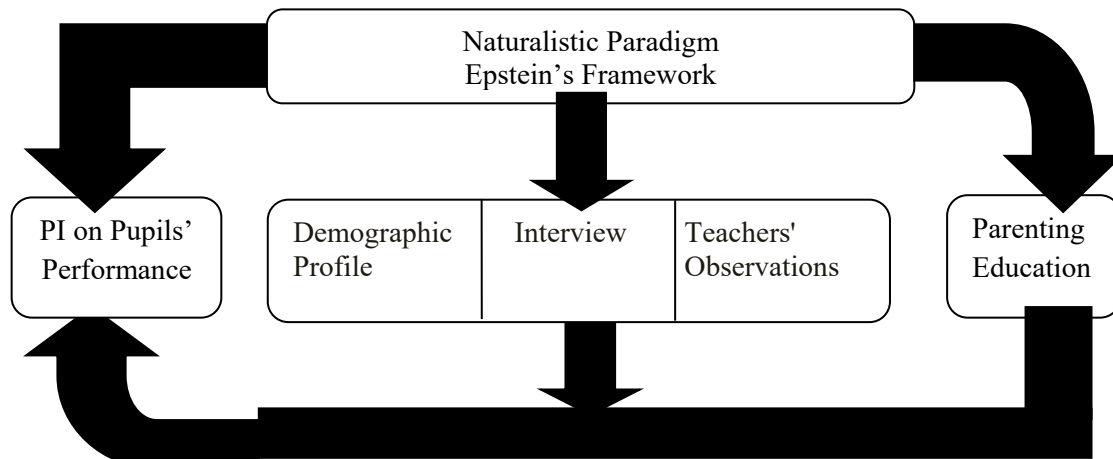
THE STUDY

There are researchers on parent involvement and its positive effects to education for many years. However, the relevance of this cram is catered on strong partnership between educators to the identified parents in the chosen community. The work of Dr. Joyce Epstein has supported the meaning of parent involvement and identified the premise stating that parent involvement should go beyond school and home, inviting a partnership between homes, schools and communities (Wright, 2009). In the six types of Parental Involvement framework, Epstein implied that guardians who were informed and engrossed in their children's trainings can bring sanguinely impact their child's attitude and performance.

The six types of involvement interactions take action as a framework for classifying behaviors, responsibilities, and deeds performed by school personnel and family and community members, working hand in hand to augment involvement and student achievement that activate within the theory of overlapping spheres (Epstein et al., 2002). The six types of involvement are delineated in the chase conduct. First is the Parenting-helping where parents and extended family members are aware and conversant about child maturity, and offering possessions that permit them to ascertain home environments that can enhance learning. Second is Communicating-effective, suitable two-way contact about school events and student academic or personal development and progress, and/or insight within the home environment. Third is Volunteering-organizing and participating in activities initiated by school personnel like parent- teacher and community association or generated by community members aimed at supporting students and school programs, such as service-learning projects, violence reduction assemblies. Fourth is the Learning at home wherein it is providing information to parents and families about school procedures like homework opportunities, grading rubrics in order to help them supplement their children's academic activities. Fifth is the Decision-making in which this includes the parents and family members from all backgrounds as representatives and leaders on school committees agreed upon the educational events. Finally is the Collaborating with the community-identifying and integrating funds, services, and other assets from the community to lend a hand and meet the needs of school personnel, students, and their families.

Parental involvement, from an economist's perspective, can also be defined as direct effort, provided by the parent, in order to increase educational outcomes of their children. This definition implicitly refers to an education production function, and makes parental involvement one of its arguments (Avvisati et. al., 2010). Altschul(2012) cited that according to Sirin (2005),children's academic performance can be predicted by the family's socioeconomic status. Researchers, Goldberger, (1991) and Goldring, (1993) also recognize that there is a strong direct relationship between socioeconomic status and parent involvement (Zedan, 2011). Parents with stable financial status contribute to the schools (Hodtuv, 2001). A positive correspondence between the level of education of the parents and the degree of their participation was established.

High-achieving pupils are set with higher expectations and standards than low-achieving pupils (Michigan Department of Education 2001). Parent-supported students yield better performance in school. If there is a lack of parental involvement, the educational development and success of the performance of the students is affected. The students are struggling if there is no support from parents. (Wanke, 2008). According to Angion (2009), parental involvement connects to the child's cognition, verbal communication, and socio-emotional intensification and increases children's attainment. Georgiou (2010) found out that child's achievement in school is related to the attributing behavior of parents. Desforges with Abouchaar (2003) stated that there would be a high level of achievement if there is parental involvement.

Figure 1. Conceptual Framework of the Study

Learning is complex; it begins at birth and continues throughout life. Parents have a well-built influence on the learning of their children and are labeled as the first teachers and role models for their children. Parental involvement is an accumulation of definitions from a myriad of research, and the many definitions can make researching involvement more challenging (Wright, 2009). Connection implies the bind of resources by parents for the assistance of the child, and the total number of dealings in which the parents assisted in order to add either straightforwardly or in a roundabout way in the learners educational undertakings. While there are varying models of parental involvement, Epstein's is the only one that has undergone extensive review by the research community. Furthermore, according to Wright (2009), Epstein's model provides well defined and useful guidelines for others to follow.

This widely accepted framework has six types of parental involvement mentioned are Parenting, Communicating, Volunteering, Learning at home, Decision- making, Collaborating with the community to identify and integrate resources and services from within the community to improve student learning by strengthening the institutions' programs and family applications and scenarios.

Parental involvement in children's education is a crucial factor for the child's continuing educational development and success in school. If there would be deficient in parental involvement, the educational improvement and accomplishment of the pupils' performance is greatly affected.

Distinguishing the parenting styles and its impact of parental involvement and the rarity at the parent involvement for high and low performing elementary pupils, this paper explored the persuade parental involvement across demographics socioeconomic condition and parents' educational locale, and apt university support of parent involvement project, involving parents in decision making and implementing programs to provide information about parenting skills and community resources.

RESEARCH METHODOLOGY

This research study made use the naturalistic paradigm, a descriptive case-study type that interprets and analyses the response of the purposively chosen respondents. Ten (10) selected parents, of which are five (5) parents of High-Performing (HP) elementary pupils from Science Class and five (5) parents of Low-Performing (LP) elementary pupils from Regular Class as respondents were chosen accordingly. They are the parents of the said pupils studying in Barrio Luz Elementary School located at Archbishop Reyes Avenue, Barrio Luz, Cebu City. The two faction of respondents were chosen in order to see how the facilitation skills of the parenting connections differs. The top five (5) HP pupils were the one identified by the Science Class adviser and the five (5) LP pupils were also identified by the Regular Class adviser based on the pupils' grades and class standing. The researchers utilized discourse analysis which normally identified texts with wide-range of probable information sources including transcripts of documented interviews, teachers' observation documents and in-depth analysis of a few excerpts as the ten parents shared and communicated shift of information. It is the investigation of what lingo does or what their parenting styles do through the parents' accomplishment.

Instruments used in the study were: a) Demographic Profile Questionnaire b) an interview given to the pupils regarding the support given by their parents and c) the teachers' observations on the parental involvement

(PI). The respondents were given formulated guide questions from Epstein's Framework of Parental Involvement which constituted the qualitative-explanatory approach. Parent-Teacher Community Association (PTCA), general and classroom meeting participation of the parents were also asked to the teachers to gain information needed to support on how much the parents are involved in school.

The instruments were personally administered by the researchers to the respective parents. Promising criteria used to evaluate the robustness of naturalistic inquiry such as integrity and responsibility of the respondents. It is naturalistic that the field researchers used inductive reasoning, their line of questioning depending on the respondents parenting styles and his/her response. The respondents were given formulated divergent (open-ended) questions based on Epstein's Framework on Six Types of Parental Involvement. The focus group (FG) constituted their children's feedback and the teachers' observations. The PTCA, general and classroom meeting participation based on the interview given to the teacher advisers and the interview questionnaire given to the pupils served as validations of the PI in school. The socioeconomic status and the parents' educational background were also asked through demographic questionnaires.

To ensure validity and reliability, the same questions raised to parents who have high and low performing children. Revisions on the questioning technique was the change made as the "triangulation state of mind", which allows for vast variety of angles. A major focus is on the observation of the parenting styles of the high and low performing pupils across demographics. For the conformability and totality of guaranteed acceptability athwart paradigms, validating the results and providing the perceptive of the involvement of the parents which affects pupils' performance triangulation has been employed.

RESULTS AND DISCUSSIONS
Personal and Demographic Profile

The academic performance of pupils in rapport to the parental socio-economic background and educational background were not statistically significant. However, the parents of the high-performing pupils' mean income and educational background were observed to be higher compared with the parents of the low-performing pupils. It could generally be inferred that in spite of the none significance of the effect of the two factors being considered in the ongoing discussion, it is apparent that the variables still play slight role in the pupils' academic performance.

The study involved ten (10) parents of Grade V pupils of Bo. Luz Elementary School, five (5) of them were parents of high-performing (HP) pupils from Science class. They were 37 to 53 years old with an average 43 years of age. It is found out on the parents' educational backgrounds, one (1) or 20% of them reached elementary level, two (2) of them or 40% of them were college level, two or 40% of them were degree holders. Three (3) or 60% of them were married and two (2) or 40% of them were never married. Based on the monetary comings and goings One (1) or 20% of them had a monthly revenue of one thousand pesos, five hundred pesos (₱ 1,500), one (1) or 20% of them had a monthly income range of three thousand, one hundred pesos (₱ 3,100) to six thousand pesos (₱ 6,000), one or 20% of them had a monthly income range of six thousand, one hundred (₱ 6,100) to twelve thousand pesos (₱ 12,000), two (2) or 40% of them had a monthly income range of twenty thousand, one hundred pesos (₱ 20,000) to forty thousand pesos (₱ 40,000).

The other five (5) respondents constituted the parents of low-performing (LP) pupils from a Regular Class of the same school. They were 25-53 years old with an average of 40 years of age. Two (2) or 40% of them were elementary graduates, one (1) or twenty percent of them was a high school graduate and two (2) or 40% of them were college level, three (3) or 60% of them were married and two (2) or 40% of them were never married. Two (2) or 40% of them had a monthly income of one thousand, five hundred pesos (₱ 1,500), one (1) or 20% of them had a monthly income range of three thousand, one hundred pesos (₱ 3,100) to six thousand pesos (₱ 6,000), one (1) or 20% of them had a monthly income range of six thousand, one hundred pesos (₱ 6,100) to twelve thousand pesos (₱ 12,000) and one (1) or 20% of them had a monthly income range of twenty thousand, one hundred pesos (₱ 20,100) to forty thousand pesos (₱ 40,000).

The Six Types of Parental Involvement

There is a moderate difference between the responses of the parents of high-performing pupils and those of the low-performing pupils. Findings include that parents of low-performing pupils tend to shift their attention away from school. It is found out that less educated parents feel inadequate to help their children with

homework. This also implies that parents offer support to their children in means and ways that are capable of providing of or what is available to them.

Table1. Comparison of Parental Involvement: Epstein's Framework

PARENTING STYLES	SIMILARITIES	DIFFERENCES
PARENTING	Both provide a conducive and silent environment. They gave encouragements to their children.	Parents of HP pupils have homework strategies whereas the parents of LP pupils don't have.
COMMUNICATING	The two groups approach their child's teachers every time they have problems. They are also informed with regards to PTCA meetings.	Parents of HP pupils take time to attend the meetings while some parents of LP pupils prefer work over attending meetings.
VOLUNTEERING	Parents of PH pupils and parents of LP pupils are informed through PTCA meetings.	The parents of HP pupils are more active in participating to community activities. Parents of LP pupils believe that socioeconomic status cannot affect their kind of help they can give. On the contrary, the parents of HP pupils consider socioeconomic status as a factor that affects their volunteering.
LEARNING AT HOME	The two groups are aware of how they can help or assist their children at home.	The parents of HP pupils induce learning or use the reward system. Whereas the parents of LP pupils gave advices about the importance of education.
DECISION-MAKING	Both parents are not active members of PTCA and other parent organizations.	The parents of LP pupils gave a lesser rating than parents of HP pupils in terms of decision-making of the parents and school.
COLLABORATING WITH THE COMMUNITY	The parents of HP and LP extend their help to the community.	The parents of HP pupils gave their support to the community whereas the parents of LP pupils only gave help when necessary.

As seen in the table, it shows the similarities and differences of how the parents of HP and LP facilitated each type of parental involvement. It is incumbent upon schools and communities to play a role in helping parents to embellish what they were doing and enhance the skill on shaping, nurturing and developing young minds in their educational endeavor in universal. Despite the evidence about the value of parental involvement, far too many parents continue to lack sufficient information about their children's schools. Many educators also fail to understand their students' families and many communities are not closely linked with their local schools. The cost in terms of student outcomes not achieved is incalculable.

PARENTS OF HIGH-PERFORMING PUPILS

In parenting, the parents provide a silent and conducive environment for learning. All parents were expectant their children in doing the teachers' assigned homework. Parents let their children do their task independently and only give assistance when necessary. This evidence is manifested when PH1 said

"I'll let my child to do his homework by himself. In this way, I could encourage independence and it is also a good opportunity to build my son's self-esteem. Moreover, I can find educational resources to help him with his math, science, reading and writing assignments. I will also encourage my son to do time management and be organized in doing his homework."

They regularly check the assigned school task of the child through asking the child and checking their assignment notebook. Most of their partners help their child in their homework. They spend one to two (1-2) hours per day in helping their child with the assignments. Majority of the parents have homework strategies that they use to make their child do their task such as giving rewards and restraining interruptions in home. In Communicating, a greater number of the parents approach their child's teacher when they meet problems regarding their child's behavior and attitude. During the distribution of report cards and PTCA meetings, the parents are informed of their child's progress and are satisfied after the meetings.

A greater part of the parents volunteer help in school activities like participating in the Brigada Eskwela, Coastal Clean Up, Tree Planting activities and contributing financial assistance. A greater number of the parents believed that socioeconomic status can affect their volunteering or the kind of help they give. However, PH1 said

"No, I don't believe that economic status will matter when it comes to giving help. In my case I always volunteer myself in any school activities without spending a peso in my pocket."

The schools organized parent help and support through PTCA meetings. Nearly all of the parents of high performing pupils were aware on how they can assist their child at home. With the use of modern technology such as laptops, other learning gadgets and guidance can help their child to foster learning regardless of the economic status. The community also reached the parents by disseminating information of community programs like clean and green programs and health programs. Nearly all took part in the community programs by joining the livelihood services and check the proper segregation of trashes.

PARENTS OF LOW-PERFORMING PUPILS

The parents of low performing students share the same responses with the parents of the high performing students. Most of them don't have homework strategies but they tried to encourage their children. PL5 said

"Pugsonon, because of his behavior.Dilikalaagog di kabuhat sa homework." ("I force him because of his behavior. He cannot go anywhere if his homework is not yet done.")

Almost all of the parents approach their children's teacher when they meet problems regarding their child. They are aware that there are PTCA meetings through their children's communication notebooks but there are times that they cannot attend meetings because of their work. In knowing their child's progress they check their child's scores in exams and grades. PL3 said

"...human sapag follow-up ug pagpakigestorya sa teachers kon unsay progress sabata. Kinahanglan makahibalo ang bata nga maoni iyang mga accomplishment in school progress." ("…after the follow-up and talking to the teachers about the child's progress. It is important for the child to know his accomplishments in school.")

Few of them take part in the school activities. They help in feeding programs and give financial support for projects. Majority of them think that the economic status does not affect the kind of help they can give. Through PTCA meetings they are provided with the needed information on how they can help and support the school. They have varied ways in inducing learning to their children. Parents observed different strategies in dealing with learning at home. Some of them teach their child about everything in life and importance of education.

Parenting Education

All of the parents were asked on how the community reaches for families and schools. They need Parenting program as an extension project and a service to proffer in the community. The five faculty of the College of Teacher Education had an extension project which is "PARENTING EDUCATION" to answer the need of enlightening the parents in the community. It is a University funded on-going project in the midst of forty parents. The professors made used of Modules to facilitate the extension works and their participation in the community.

CONCLUSION

Learners respond very well to parents participating in their schooling – whether that's presently being aware of their progress and accepting their achievements, or whether it's when parents decide to take a more active role and become engross in the school life. It is consequently concluded that parental involvement has positive effects on pupils' performance. These findings correspond with other research findings that suggest that successful pupils come from a nurturing and supportive home environment. In addition, it does not appear to matter greatly what socioeconomic and educational background the parents have. Both the school and home background should effort mutually in offering successful pupils in their academic activities because education is a vital determinant in country's development. The paper cited three key points to improve the school-home partnership: providing parents with information on the types of parental involvement; giving parents a voice on the views on parent involvement; and encouraging partnerships with schools through the implementation of

extension program - the research output fills the knowledge gaps in step by step, stage by stage – engaging families in the learning process.

RECOMMENDATIONS

It is recommended to have an aid in parental involvement; thus educators in any schools are encouraged to serve and implement extension program akin to Parenting Education in a chosen community as a mission in the institution.

This study have its strengths, however limitations were also met during the study. The research was also solely focused on a certain area of elementary pupils, parents and teachers. For further study, include an in-depth qualitative study to consider the thoughts of teachers and parents of other schools and places. The researchers would also recommend that the programs designed for parent-teacher and parent-community interaction should be more emphasized with the aim of improving the parent and child relationship. It would be very beneficial for the parents, teachers, school and community to have more inputs from each other's insights on how to improve opportunities on parental involvement for all learners.

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PREDICTORS OF MATHEMATICS PERFORMANCE OF THE GRADE VI PUPILS OF CAUAYAN NORTHEAST DISTRICT: BASIS FOR INTERVENTION PROGRAM

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Abstract: This is a descriptive-correlational study. Statistical analyses using frequency and tally percent, mean, standard deviation, Pearson Moment Coefficient of Correlation (r), and ANOVA were used to analyze the data. Findings indicate that pupils have positive attitude towards the subject and majority have high self-confidence and high success orientation but low confidence in defense orientation. Among so many factors affecting the performance of pupils in Mathematics, result revealed that only the Mathematics teacher was found to be significant predictor. Thus, this study proved and strengthens the long-time belief that pupils' success in learning greatly depends on the teacher.

INTRODUCTION

Mathematics is an important part of people's daily lives and that nobody can do away with it. People need Mathematics in counting, computing sales, gains and measuring areas and volume, and many more (Mariano, 2004). The need to enhance students' mathematical skills and at the same time develop in them a positive attitude toward the subject is a dire academic need (Salandanan, 2000; Kurucz, 2014; Mawirat, 2000).

The development of positive attitude can be explained by Attribution and Vector Topological Theories.
The Attribution Theory (Weiner, 1979, 1980, 1984 in Gines, 1998) attempts to describe or explain the world and to determine the cause of an event or behavior. According to Weiner (1984), the essential factor affecting attributions are ability, effort, task difficulty, and luck. The basic principle of attribution theory as it applies to motivation is that a person's own perceptions or attributions for success or failure determine the amount of effort the person will expend on that activity in the future. The theory predicts the behavior of students depending on their responses.

There are factors that affect the transfer of learning such as attitudes of learners toward the subject matter, mental ability, similarities between subject matter, motivation and effort making capacity, method of teaching , facilities and supervision (Ganal & Guiab, 2014, del Castillo, 2010;Aguinaldo, 2001). Ineffective teaching is the cause of low achievement level. Mathematics teachers have inadequate training to use the available materials and for some reasons the school administrators are reluctant to send the teachers to attend in-service education.

Moreover, the Vector Topological Theory of Lewin (in Gines, 1998) emphasized the explanation of human behavior in terms of the forces and tensions that move them to action which is largely determined by the environment and the people they are in association with. The learning environment includes the teachers whom the pupils interact with. How the teachers affect the pupils can be observed or manifested through the latter's attitude and behavior.

Based on the concepts mentioned, the study on predictors of Mathematics performance of pupils was conceived.

THE STUDY

The mathematics performance of Filipino students in national achievement as well as the international achievement has been consistently low and the situation in local levels is similar (Aguinaldo, 2001; Ayap, 2007; Balbalosa, 2010). The result of National Achievement Test Grade VI in 2012-2013 reveals that Cauayan Northeast District had an average percentage score of 66.22 and in 2013 – 2014, an MPS of 75.54. This indicates that there was a minimal increased in Mathematics performance and that the pupils' performances were still in the "moving towards mastery" level.

The descriptive - correlational method (OonSeng Tan, Parsons Richard D., Hinson Stephanie Lewis, Sardo-Brown Deborah, 2003) was used to determine the relationships between and among the selected variables considered in relation to the pupils' academic performance. There are thirteen (13) schools of Cauayan Northeast

District, one (1) primary school and twelve (12) complete elementary composed of monograde and multigrade classes. To identify the schools to be included in the study the researcher used the cluster sampling, grouping them into monograde and multigrade. There were two (2) multigrade schools and four (4) monograde schools. The fishbowl technique was used to identify the respondents the 117 respondents- 105 Grade VI pupils and 12 Mathematics teachers.

FINDINGS

"I feel a define positive reaction to Mathematics because it is enjoyable." Most of the indicators of the pupils' attitudes toward Mathematics were rated as "Positive Attitude" as shown by the overall mean 3. 16. This shows that Mathematics is considered by the pupils as interesting which contradicts the results of their achievement tests in the subject. The pupils' general average was described as "Approaching Proficient" meaning there is a need to increase their performance to level "Advanced"..

Table 1: Relationship between the Variables and Mathematics Performance of Pupils

		Grade	Impression to Teacher	Attitude	Success Orientation	Self-Confidence	Defense Orientation	Math Perception
Grade	R	1	0.29	0.23	0.31	0.39	0.03	0.27
	P		0.00	0.02	0.00	0.00	0.75	0.06
	N	105	105	105	105	105	105	105

Table shows there is a slight significant relationship between impression to Mathematics teacher, attitude, success orientation and self-confidence to Mathematics performance of the pupils while defense orientation and the overall Math self-perception show no significant relationship.

Table 2: Summary Table on Predictors of Mathematics Performance

Model	Unstandardized		Standardized	t	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	65.76	3.81		17.26	.00					
Attitude	.67	.72	.09	.93	.36	.23	.09	.08	.85	1.18
Success orientation	.96	.56	.19	1.71	.09	.31	.17	.15	.60	1.66
Self - confidence	1.18	.66	.21	1.80	.07	.39	.18	.16	.59	1.69
Defense orientation	-.25	.39	-.06	-.65	.52	-.03	-.03	-.06	.84	1.19
Impressions to Math Teacher	1.72	.67	.24	2.58	.01	.29	.29	.23	.90	1.11

The table above reveals that only the predictor *"impression to Math teacher"* was found to be significant. Since the only predictor found to be significant is the impression to Mathematics teacher, there is a need to craft a

possible intervention program that would probably help teachers increase or enhance pupils' impression on them (Du, Wei and Hilario, Robesa R. , 2006) and enable pupils increase academic performance in Mathematics.

Thus, appropriate teacher-student relationship is an important means for preventing discipline problem and fostering professional development, which contributes to the general improvement of learning environment of the pupils (Garcia and Reyes, 2014). This is the reason why there is a need to strengthen the impression of Mathematics teacher through this proposed program.

The Proposed Intervention Program
The proposed intervention program focuses on the different ways on how to develop positive impression to Math teachers. It will foster good rapport and promote positive pupil-teacher relationship (Tiffin, 2007). This intervention program will help teacher to establish a shared environment that teacher must not be overly possessive or need to complete control of the children and environment (Salazar, 2001). It allows pupils both responsibility and freedom within the classroom community and gradually contributes for a relationship of closeness and   acceptance (Salguet, 2000; Villanueva, 2009).
The program also aims to provide professional development to enhance teaching pedagogies, methods of instruction and disciplinary knowledge in Mathematics. The activities are attending trainings, seminar-workshop on strategies in teaching Mathematics; attend conflict and stress management seminar, active involvement in Mathematics education, benchmarking and mentoring, and quarterly school-based meetings or conferences.

CONCLUSIONS
Pupils possess positive attitude towards Mathematics despite low performance in the subject. The predictors' success orientation and self-confidence have a very minimal positive relationship on their performance while defense orientation is not related at all. Mathematics teacher is the only predictor found to be significantly related to the Mathematics performance of the pupils. There is a need to improve impression on Mathematics teachers. Therefore an intervention program must be implemented to address the unique needs of pupils to ensure greater proficiency in Mathematics.

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REFLECTIONS FROM THE ANALYTIC GEOMETRY COURSES BASED ON CONTEXTUAL TEACHING AND LEARNING THROUGH GEOGEBRA SOFTWARE

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Abstract: Contextual teaching and learning can fill the gap between abstract mathematical concepts and real life practices. Analytic geometry is among the courses which constitutes a gap in this regard. Moreover, when the relevant literature is reviewed, it is seen that researches on analytic geometry mainly focus on achievement and comparing the computer-aided software with other methods. In this context, this study aimed to investigate "How elementary preservice mathematics teachers learn cylindrical and spherical coordination in contextual teaching and learning environments, supported by the GeoGebra software". Case study was conducted. Eight preservice mathematics teachers participated in the study. The instruments of the study were composed of worksheets, semi-structured interviews and models, created through the GeoGebra software. As a result of the study; it was revealed that preservice mathematics teachers can learn cylindrical and spherical coordination in a meaningful and permanent way.
Keywords: Analytic geometry, Contextual teaching and learning, GeoGebra dynamic mathematics software, REACT strategy.

INTRODUCTION

Contextual teaching and learning is the most effective way for students to see the connection between what they learn in class and the real world (Scans, 2000). Glynn and Koballa (2005) define it as making use of different situations which students encounter in everyday life, in terms of transferring course contents. According to Choi and Johnson (2005), contextual teaching and learning denotes using learned concepts and relationships as a means of coping with situations or problems encountered in daily life. Constructing a context involves some difficulties, and it was observed that students can infer what they are given when an appropriate context is constructed (Ingram, 2003; Kuhn & Müller, 2014). Hence, as stated by some researchers, contextual teaching and learning environments are effective in enhancing students' learning (Birchinall, 2013; Ingram, 2003; Pierce, 2013; Satriani, Emilia & Gunawan, 2010). In addition, Cord (1998) emphasizes the importance of contextual teaching and learning that the students did not attend in the learning process of mathematics lessons, they did not have efficient experience by relating, and they were not capable of transferring these experiences to different situations.

REACT is the acronym for five essential student engagement strategies: Relating, Experiencing, Applying, Cooperating and Transferring (Crawford, 2001). Relating, the first step of these strategies, involves a student's attempt to contextualize his preliminary information and acquired experiences (Baltaci, 2014; Crawford, 2001; Costu, 2009; Ozerdem, 2007). In this step, in order to take the student's attention, examples are presented from daily life and lessons are tried to be taught in a selected context (Catlioglu, 2010; Ramsden, 1997). Experiencing is the second step in which students learn and discover knowledge by searching, practicing, and living (Crawford, 2001). In the step of applying, students find a chance to apply the experienced knowledge to the problems by the aid of computer (Crawford, 2001; Ultay & Calık, 2011). In the step of cooperating, students probe in the context of a lesson and share this with other students (Crawford, 2001). In transferring, the last step, students can use their existing knowledge in a new context beside a particular scope (Crawford, 2001; Ramsden, 1997).

Contextual teaching and learning is important in terms of filling the gap between abstract mathematical concepts and real life practices (Cord, 1998). Analytic geometry is among the courses which constitute a gap in this regard. Since most of the analytic geometry concepts are abstract, students have trouble in learning those concepts. Thus, it is crucial to introduce those concepts to students with different methods (Riddle, 1996; Schumann, 2003). Studies show that dynamic software is functional in filling the gap during learning and teaching process of abstract analytical geometry concepts in a traditional paper-and-pencil environment (Baltaci & Yildiz, 2014; Pekdemir, 2004; Saha, Ayubb & Tarmizi, 2010; Schumann, 2003). Therefore this research aims to show that using dynamic software in tandem with REACT strategies will lend an impetus with two powers supporting each other.

Among the present mathematic software, GeoGebra is free, open source-coded, with multiple representation (e.g., different windows for algebraic and geometrical input), and it offers individualized language options, interactive commentary and internet options through which the sources can be shared (Hohenwarter, Hohenwarter, Kreis & Lavicza, 2008). Moreover, GeoGebra software contributes to the modelling of everyday life-related problems (Price & Stacey, 2005). In a similar vein, GeoGebra dynamic mathematics software is a versatile tool for visualizing and objectifying mathematical concepts (Hohenwarter & Jones, 2007).

The writers of the study have observed that the elementary preservice mathematics teachers depended on the formerly learned patterns without questioning. Furthermore, the researchers determined to have difficulties in learning analytic geometry concepts. Similarly, it has been found that preservice teachers have difficulty in constructing because of imagining some expressions (Schumann, 2003). Many researchers have stated that dynamic software contributes in eliminating these kinds of adverse conditions (Frank, 2010; Jahn, 2002). Therefore, the writers wonder about reflections from the analytic geometry courses based on contextual teaching and learning through GeoGebra software.

Literature review shows that studies on GeoGebra software falls under four main headings. The first category is composed of some studies in which a lesson, constructed with GeoGebra, and some variables are examined (Dikovic, 2009; Saha, Ayubb & Tarmizi, 2010). The second consists of the studies in which mathematics teachers and pre-service teachers' views are examined (Aktumen, Horzum, Yildiz & Ceylan, 2011; Kutluca & Zengin, 2011). The third category is composed of some studies in which some variables are examined in the problem solving processes with GeoGebra (Yildiz, Baltaci & Aktumen, 2012). The last one is consists of the studies in which a certain geometric locus is discussed (Antohe, 2009). On the other hand, most of the studies about contextual teaching and learning have been published by the Center for Occupational Research and Development (CORD). By these studies, CORD (1998) aimed to connect abstract mathematics concepts and real-world applications. The study of preservice mathematics teachers is the project of contextual teaching and learning in mathematics, developed at Georgia University. In this project, preservice teachers' beliefs and practices have been investigated in order to emphasize the importance of these beliefs and practices on mathematics education (Glynn & Scott, 2003; Ketter & Arnold, 2003; Tippins, 2003). Moreover, it is seen that learning environments are created with the worksheets formed or the problems based on context in the studies with the REACT strategy (Costu, 2009; Ingram, 2003; Pierce, 2013; Satriani, Emilia & Gunawan, 2010; Yu, Fan & Lin, 2014) and theories and models are put forth with the environment created within the frame of the REACT strategy (Catlıoğlu, 2010). Otherwise, studies about analytic geometry mainly focus on achievement (Erus, 2007; Medrich, Calderon & Hoachlander, 2002) or comparing the use of computer-aided software in teaching analytic geometry concepts with the other methods (Gallou-Dumiel, 1989; Hohenwarter, Hohenwarter, Kreis & Lavicza, 2008; Hoyles & Healy, 1997; Isiksal & Askar, 2005). In this context, this research aims to investigate the reflections in learning process designed in line with contextual teaching and learning and REACT strategies. These reflections were limited to the teaching of cylindrical and spherical coordinates due to the nature of the research. In this context, this study aimed to investigate "*How elementary preservice mathematics teachers learn cylindrical and spherical coordination in contextual teaching and learning environments, supported by the GeoGebra software*".

METHOD
Research Method
The authors of this study have experience on teaching analytical geometry classes, and they published several studies about the analytic geometry teaching. In this research, cylindrical-spherical coordinates were taught in a specially designed learning environment. The lessons carried out by a researcher and case study was used to investigate a certain group deeply and to assess the data without any concern of generalization. According to Yin (2003) a case study design should be considered when: (a) the focus of the study is to answer "how" and "why" questions; (b) it is impossible to manipulate the behavior of those involved in the study.

Participants
Research participants were 8 third-grade preservice mathematics teachers in the 2014-2015 academic years. Four of the participants were female and the other four were male. One of these participants was 20 years old, three of them were 21, and four of them were 22.

When taking courses on basic ICT skills in participants' first year at university, the primary preservice mathematics teachers began interacting with GeoGebra in two courses (General Mathematics, Geometry). Second year, in Calculus I course, GeoGebra is used only for presentation by the researcher when needed such as; examining the derivation of function concepts in table, graph and algebra representation, Rieman integral, the method of rectangle, to draw parametric curve etc. They were guided in these courses by a researcher, who had organized various in-service training sessions on using GeoGebra in mathematics education. Thus, all of the participants were trained in studying with GeoGebra and preparing activities in previous years, they already had the skills needed to construct the situations on the worksheets handed out to them. While deciding on the participants in the research, the researchers took into consideration the academic success levels in analytic geometry, general mathematics and geometry courses and chose students with low, medium and high levels of achievement having the skills of self-expression and being volunteer for semi-structured interview. Besides, all the preservice teachers participating in the research were selected out of those who were good at coordinate system and trigonometry as cylindrical spherical coordinates tried to be taught with a particular learning environment in this research require knowing these subjects basically.

Learning environment was designed for the whole class but, four groups (each group includes two preservice mathematics teachers) focused on data collection. In each group, two preservice teachers worked on one computer. When needed, these groups answered authors' questions and the questions in worksheets using the GeoGebra software. Data were collected about each group during their lessons. In this period, the author took the role of a mentor and conducted semi-structured interviews, in which they recorded the participants' voices by using audio devices.

Data Collection
The research data were collected through worksheets, semi-structured interviews and models formed via GeoGebra software. National and international sources of analytic geometry were used to prepare the worksheets. In direction with these opinions, some changes were done in the guidelines beyond understanding, on the worksheets. In this way, more understandable and clear expressions were used in both mathematics and Turkish.

Three worksheets were used in the application during six course hours. The attainment taken into consideration in these worksheets is as follows: "He can define and interpret that each ordered pair corresponds to a point in R^2 and each ordered triple corresponds to a point in R^3; any point in R^3 is on a right cylinder with center O and the radius r is on the curve of the base of x0y plane; any point in R^3 is on a center O and ρ – radius is on a sphere". In this regard, the preservice teachers were asked to determine the coordinate of a key, which was in a closet and a lamp, which was hung on a wall. By doing this, we aimed to understand preservice teachers' ability to associate objects and their coordinates on the plane and space. Later, the preservice teachers were asked how to determine on the location of an object that was standing on a cylindrical water glass.

Data Analysis
The interviews were carried out with pre-service teachers and the responses were recorded. After each lesson, the participants' worksheets were kept together and they were asked to save and hand in what they brought out on the GeoGebra software. The collected data was analyzed using a content analysis methodology. The content analysis process involves compiling the similar data under certain concepts and themes and to comment on these in a more comprehensive way for readers (Yildirim & Simsek, 2005). Therefore, before the analysis process, the interview data and worksheets for their content were checked. When transcribing the audio data, we presented each conversation without any changes in the order of interviewer and interviewee. Next, the themes were separately developed by the researchers and two field experts. Therefore, the related information was given to field experts, too. To put the analysis into final form, the independent series of analysis were brought together and discussed. At the end of discussions, the determined themes were propounded so as to constitute an answer to the research problem. The reliability of the research was ensured in this way. While presenting the data, each preservice teacher was coded. For example, S1 stands for the first preservice teacher. On the other hand, the indicators of the REACT constituents were created by the help of relevant literature and presented with their codes in the table below.

Table 1: Indicators of the REACT constituents to be used in results.

REACT	Code	Indicators
	R1	Defining the relationship between previously structured information and those on the GeoGebra screen
	R2	Interrelating the concepts
R	R3	Remembering and using previously learned expressions after observations on the software
	R4	Making mathematical comments based on everyday life
	E1	Experiencing with physical materials
	E2	Comparing estimates and expressions resulting from modelling
E	E3	Re-experiencing what has been learnt previously, with the software
	E4	Finding an opportunity to observe the instructions on the worksheets by applying them in the GeoGebra environment
	E5	Changing the points, equations or graphics created on the screen and writing them on the worksheets
	A1	Doing mathematical generalizations after the experiences on the GeoGebra software as stated in the instructions
A	A2	Modelling the given expressions in a paper-and-pencil environment or via the software
	A3	Posing and solving a problem and writing down the algebraic expressions
	C1	Exchanging ideas and sharing tasks while effectuating the activities
C	C2	Checking and comparing what has been done on the worksheets with the feedback on the computer screen
	T1	Giving examples from everyday life based on the expressions observed on the software
T	T2	Reusing a newly learned concept or method in a new expression

FINDINGS

Findings were supported by quotations from the semi-structured interviews, some parts from the worksheets and models formed through the GeoGebra dynamic mathematics software. In the first lesson, we asked the preservice teachers to think about the key closet, made of unit squares and used to open the laboratory doors in the Department (Figure 1), and instructed them to use prepared the guideline. In this guideline, we asked to the preservice teachers how they could determine the coordinate of a key, which was located in the closet. All of the preservice teachers' responses were similar to the following response given by S1:

S1: First, I thought the key closet as a matrix. Ultimately, we can define it using columns and rows. For example, the key of this laboratory is located from top to below on the second row and from left to right on the seventh column. Later, my friend and I thought that we may take a starting point and use coordinate axes.

Thus, they were guided to establish a meaningful relation with the coordinate axis in the plane (R4) with the help of the worksheet delivered. In addition, as seen in the above explanation, the preservice teachers considered matrices in determining the location of the key, and later they established relations with coordinate axes (R2).

Figure 1: The picture of the key closet located in the department

Next, we asked to the preservice teachers to determine the coordinate of a lamp, hung from the ceiling. While specifying the position of the lamp, most of the preservice teachers said that determining the position of the lamp would be possible by the help of the steps. With stepping, preservice mathematics teachers established a connection from daily life to mathematics in association with coordinate axes (R4). S6 summarize this process as follows:

> *S6: In order to specify the position of a lamp hanging from the ceiling, we think it is possible to reach that lamp by taking eight steps rightward, four steps leftward and, lastly, raising our hand upward. We associated this with the coordinate system. A line along the x axis and raising our hand along the y axis give a line along the z axis.*

At the same time the preservice teachers made various remarks when they were asked about how to address a key on the key closet and a lamp hanging on the ceiling. They called it a different method and said that they were not accustomed to such kind of addressing and relating in coordinate systems (R4). For example, S3 and S5 expressed his thoughts as follows:

> *S3: As a result of the courses taught in this way, I started to think lots of things mathematically as I look at my environment.*

> *S5: In fact, I can say that thinking about the activities was a bit hard and boring because we had not been familiar to such a practice. I completely attribute this situation to the unorthodox and unexpected nature of it.*

Meanwhile, the preservice teachers took this key as a point using the visually of GeoGebra dynamic mathematics software (Figure 2) and thought over how they could address it on both graphics and algebra screen of the software. (R1; R3) For instance, during this process the group formed by S7 and S8 tried to show the location of the key to be on the letter T.

Figure 2: Preservice teachers using the visual quality of the software while addressing a key on the key closet

Thus all of the preservice teachers succeeded in addressing a key in-plane coordinate systems on the GeoGebra screen. Later, we asked to the preservice teachers how they could determine the location of an object, standing on a cylindrical water glass, for a certain time period. From the discussion of the group members, we observed that most of the preservice teachers indicated their inclination to use the height and radius of the glass (R4; E1). For example, S5 and S6's discussion demonstrated this observation.

> *S5: First of all, we need to use the height because we have to go up in order to reach the object.*
> *S6: Okay. Then, we have to describe the location of the bottom of this height.*
> *S5: What? I did not understand.*
> *S6: I mean, for me, in order to go to the intersection of the height and surface we will need the radius. That is the only way we can describe the location.*
> *S5: Okay.*

Next, the preservice mathematics teachers were enabled to study to form cylindrical and spherical coordinates on the GeoGebra software, and to discuss their expressions in group. Having discussed with their group members, the preservice teachers stated that they could address a point on a right cylinder by using its base and height and they could address a point on a sphere using its radius (E1). Reflections from the worksheet of S1 are as in Figure 3.

Figure 3: S1's addressing with the forms on the worksheet

After, the preservice teachers were asked to form points on a cylinder and a sphere on the GeoGebra screen. For example, the models formed by the group of S1 and S2 and the group of S7 and S8 are as in Figure 4 (E4; E5).

S1 and S2 trying to experience a point on the cylinder

S7 and S8 trying to experience a point on the sphere

Figure 4: Models formed through GeoGebra

As can be seen in Figure 4, when examined the preservice teachers' figures both on the worksheets and GeoGebra software screen, the preservice teachers were seen to have a kind of experience period by trying to decide the cylindrical and spherical coordinates with using both pen and pencil in addition to computer environment (E1; E4; E5). Besides, S1 stated that the GeoGebra software made it possible for him to visualize his previous reflections on the paper (E3). He summarizes the actualization of this process as follows:

> *S1: We observed this situation better on the GeoGebra software. Previously we were only envisaging that point but now we are able to make and see it stroll. This made our acts more rational.*

In addition, S8 said that they were able to experience their estimates thanks to the dynamic characteristics of GeoGebra software (E2).
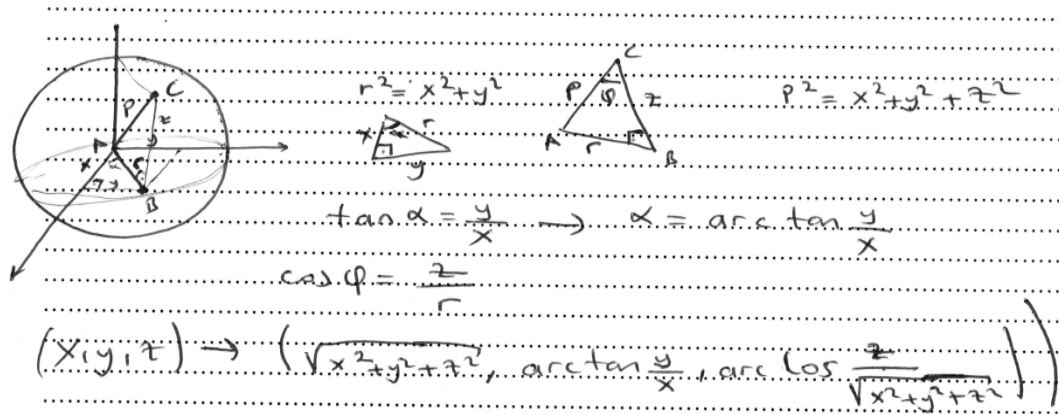
> *S8: We had estimated differently before but, at last, we noticed the wrongness of these estimates thanks to the GeoGebra software.*

Thereafter, the preservice mathematics teachers were asked to answer some questions related to the cylindrical and spherical coordinates and they were enabled to apply the expressions they experienced. They could specify the position of a point on a right cylinder by using its base and height values and the position of a point on a sphere by modelling these in a paper-and-pencil environment (A2).

> *S4: We can model the cylinder like this if we assume it a cylinder with a height on the x,y axis, and say it A(x,y,z). We can specify the point on the sphere so as its radius to be R. These denote the points strolling on the sphere and the cylinder.*

Thanks to the feedbacks from the GeoGebra software, preservice teachers had a chance to correct their errors. For instance, while trying to form the cylinder, S7 and S8 mistakenly wrote the values of focal point and height on the GeoGebra input screen and, upon seeing the 'invalid entry' warning on the software. The preservice teachers corrected their mistakes by cooperating in this way (C2; C1).

Having used the GeoGebra software according to the instructions on their worksheets, most of the preservice teachers were able to interrelate and mathematically generalize the cylindrical and spherical coordinates of a point having Euclid coordinates (x,y,z) (A1). Only one group was unsuccessful at this step. For example, the generalization of spherical coordinates by S5 group is shown in Figure 5 and its view on the GeoGebra screen is in Figure 6.

Figure 5: Generalization on spherical coordinates

Figure 6: Reflections from the GeoGebra screen in the applying process

Next, the preservice teachers were able to find answers to the posed problems. One of the problems was "*to determine both cylindrical and spherical coordinates of the point A (1,1,3) with your group members*". It is thought-provoking that the problems were formed just by changing the numbers (A3). The answer of S1 group on the problem above is shown in Figure 7 and the model formed by the S1 group is as in Figure 8.
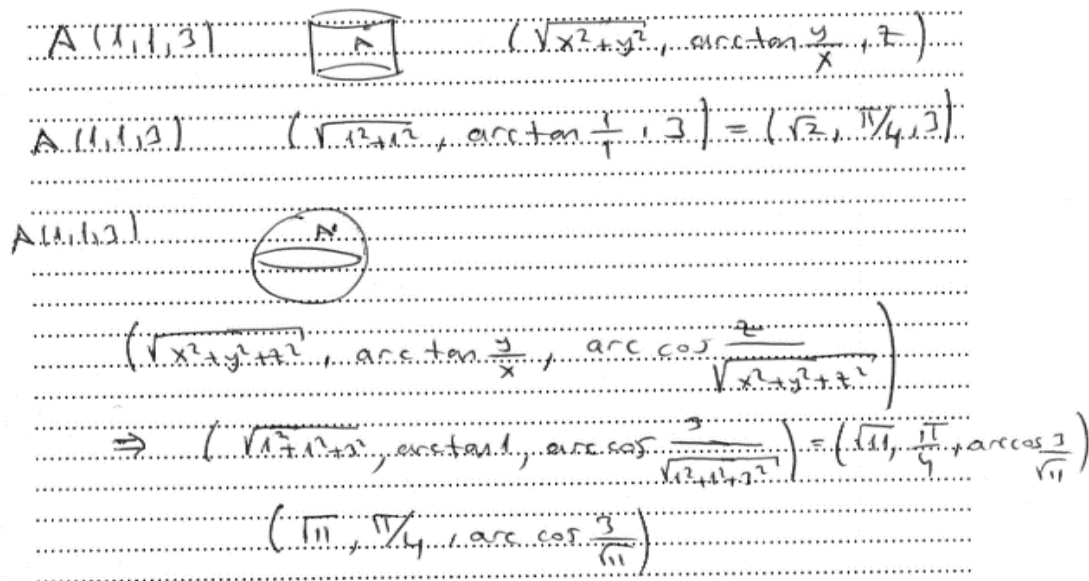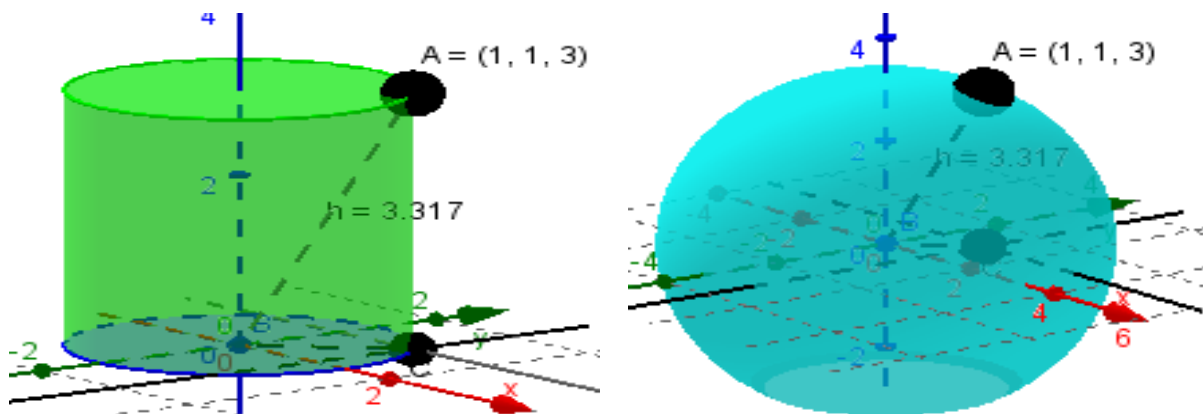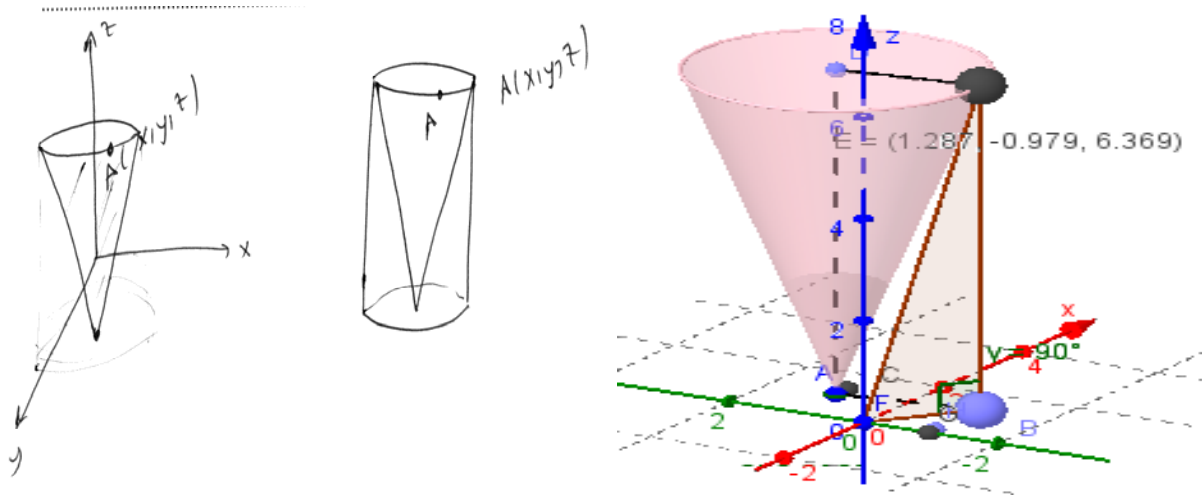

Figure 7: Answer of S1's group about the problem

Figure 8: The model formed by S1's group on software in the applying step

In this process, the preservice teachers used the trigonometric expressions they have learnt before to attain the required results by way of right triangles and angles on the GeoGebra screen (R2; R3). S6 express this process as follows:

> *S6: While forming the cylindrical coordinates, we specified the lengths by drawing perpendicular lines to the axes from the point on the circle. I thought of reverse trigonometric expressions using x, y, and arctangent values.*

Thereafter, the preservice teachers noted that any spatial point can be addressed on a right inverse cone in a similar way to the problem above (T2). The figures formed by S3 on both paper and software relating to this result are presented in Figure 9.

Figure 9: S3 transferring what she knows

In all these activities, the preservice mathematics teachers worked in groups and a well-planned discussion environment was provided so that the cooperating step came to fruition during the course. Also a natural cooperation was provided between the teachers and computer (C1). S7 expressed in the semi-structured interview regarding this finding is as follows:

> S7: During the lesson, I and my friend tried to do what we are asked. We communicated well but sometimes reasoned differently. However. We checked our conflicting opinions and corrected our mistakes together in the end.

When looked at the whole semi-structured interview with the preservice mathematics teachers, they said that they can transfer what they learned to other courses and situations (T1). Statement of S3 and S8 is as follows:

S3: It can be applied to geography courses indeed, for example, be used in fixing a place on the globe.
S8:I think it can be used in astronomical research on positions of stars, and weather forecasts as well.

DISCUSSION
It was seen that the preservice mathematics teachers became aware of what they would deal with when they were asked to address a key and a lamp without knowing the subject matter. As supported in a study by Catlioglu (2010), preservice teachers can interrelate to activities even if they are not informed about the subject matter. On the other hand most of the preservice teachers expressed that they enjoyed this atypical method even though they were unfamiliar to this way of teaching. Ramsden (1997) and Tippins (2003) argue in the same way that courses based on contextual learning are found entertaining by students. According to our research results, the preservice mathematics teachers can be adapted to the new method and efficiently accomplish this learning process.

A majority of the preservice mathematics teachers managed to specify the position of a key and a lamp both in plane and in space through coordinate systems using the GeoGebra software. Hennessy (1993), Murphy (1994) and Ayvaci, Ultay and Mert (2013) also conclude that using meaningful and appropriate contexts in learning and teaching may enhance students' ability to relate. On the other hand, most of the preservice teachers tried to determine the location of an object, standing on a cylindrical water glass with the coordinates on space by using height of the glass and the radius of the base of the same glass. During this process, they changed the water level in the glass in order to observe the height, and by doing this, they entered in a situation where they had some experience. In accordance with the findings of this study, Sowell (1989) stated that using concrete materials might help students' developments in mathematics and geometry. Similarly, Butler, Miller, Crehan, Babbit and Pierce (2003) demonstrated that by using concrete materials, students acquired experiences that increased their level of success. Therefore, during instruction, concrete materials should be used for students to have appropriate experiences where instructors have big responsibilities.

The preservice teachers had a chance to experience coordinate systems and the GeoGebra dynamic mathematics software. As a result, they applied the points on both a cylinder and a sphere, and checked their correctness through the GeoGebra software. As pointed out by Anabousy, Daher, Baya'a and Abu-Naja (2014), Gonzàlez

and Herbst (2009) and Santos-Trigo and Cristóbal-Escalante (2008), students can discover by experiencing through the GeoGebra software.

Having used the GeoGebra software according to the guidelines on their worksheets, most of the preservice mathematics teachers were able to interrelate and mathematically generalize the cylindrical and spherical coordinates of a point having Euclid coordinates (x,y,z). According to Antohe (2009) and Dikovich (2009), preservice teachers do mathematical generalizations when they follow instructions on worksheets prepared on the GeoGebra software. Thereby, we can enhance preservice mathematics teachers to learn in a meaningful and permanent way when they are given an opportunity to apply on the GeoGebra software in courses with abstract concepts.

In cooperating, the preservice mathematics teachers said they had a chance to discuss the concepts together with both their group and classmates. It is observed that they configured those concepts better in cooperation with a computer so that they corrected some of their mistakes. For instance, one of the groups in this study made a mistake when entering the values of the center point, radius, and height of a cylinder to the GeoGebra and the software showed their mistake. This study and other researches indicate that students make contact with each other when they make a mistake and correct their mistakes in cooperation (Baki, Yildiz & Baltaci, 2012; Rincon, 2009; Saha, Ayubb & Tarmizi, 2010).

All of the preservice mathematics teachers said they can transfer what they have learned to other courses and situations. Some preservice teachers noted that any spatial point can be addressed on a right inverse cone in a similar way to the problem above. However, Hoffman (2003) states that transferring skill is marginal in mathematics as a result of presenting abstract information instead of using an everyday life-related context. But GeoGebra dynamic mathematics software is a versatile tool for visualizing and objectifying mathematical concepts (Hohenwarter & Jones, 2007; Hohenwarter, Prenier & Yi, 2007). Therefore, the courses within the scope of this research can provide the preservice teachers with the opportunity to transfer from daily life to mathematics and from mathematics to daily life interchangeably, so that they are also useful for students in transferring skills.

Based on the results, by revealing the potential of the dynamic geometry software like the GeoGebra, teachers should be given professional education on the active usage of it in the learning process. On the other hand, the role of the GeoGebra software on making contextual connections with the other analytical geometry concepts can be investigated for further research. In addition, researchers can also examine relationships among some variables using the experimental methods.

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RISK TAKING BEHAVIOR AND DECISION MAKING STYLES OF CSU COLLEGE DEANS: A CASE OF MANAGERIAL ETHICS

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Abstract: The risk taking behavior and decision making style of Cagayan State University's middle managers (the College Deans) is crucial in the process of its development. Thus, this study investigated the decision making style of the deans and the managerial ethics they employ. It made use of both quantitative and the qualitative methods. Respondents were 15 college deans' and 229 faculty members. Standardized and self made questionnaires as well as interview guide were utilized. Results show that majority of the deans display moderate risk taking behavior and normative decision making style. They display high risk taking behavior in loading and promotion; they utilize thinker decision making style and employ beneficence as managerial ethics. The deans are caught in a dilemma on how to bring organizational results or show loyalty to the top officials who designated them and on the other hand, how to maintain smooth interpersonal relationship with their subordinates.

INTRODUCTION

A manager makes decisions every day that affect their team and their organization. Sinha (2010) stated that decision making plays an important role in all phases of management, ie., planning, organizing, directing, controlling, staffing, etc. Managers often find themselves facing alternative courses of action, out of which they are expected to choose or decide upon a single course of action. Decision making is often associated with risk taking. When a manager decides, he plunges into the unknown.

Like any organization, Cagayan State University undergoes the process of decision making through its middle managers, the college deans who may exhibit varied risk taking behaviors and ethical considerations in formulating decisions. Notably, the deans are the managers and leaders of their respective colleges. They play an important role in catapulting the performance of the college. Much of the expansion and advancement of the college lies on the dean's ability to take a risk as well as to decide. Issues, problems and concerns are threshed out based on the dean's ability to smoothen the rough sailing journey of the college.

As managers, the deans have the responsibility to make decisions to cater to the present dilemma their colleges are experiencing. As the head of the college, it is important to understand one's ethical obligations so that the organization's expectations can be met as well as exemplifying the appropriate behavior for others. Thus, they play a significant role in transforming the university based on their risk taking behavior and decision making styles which is affected by their ethical principles as individuals.

It is on this context that the researcher embarked on this endeavor to look into the risk taking behavior and decision making styles of college deans grounded on their managerial ethics as they perform their roles as managers and leaders in their respective colleges.

THE STUDY

Organizational decision making is complex, multifaceted and multidimensional process which is influenced by numerous factors. This study aimed to look into the risk taking and decision making style of the college deans of Cagayan State University as it relates to their managerial ethics. It determined the risk taking behavior and decision making style of the deans; the risk taking behavior and decision making style of the deans relative to loading, promotion, faculty development, faculty evaluation and curriculum development; the relationship between the respondents' risk taking behavior and decision making style; and the managerial ethics exemplified by the college deans in their decision making style. It made use of both the quantitative and the qualitative methods in data gathering. Permission was granted to administer the questionnaires to the 15 college deans and 229 faculty members as respondents. Faculty members were limited to regular teachers of Cagayan State University. Standardized questionnaires as well as self made questionnaires were the main data gathering instruments. The Decision Making Style of the deans was measured through the Decision Making Style inventory of Pierre Casse's Training for the Multicultural Manager (1982). It consists of twenty items that

determines whether one employs factual, intuitive, analytical or normative decision making style. The Risk Taking Inventory authored by Gene Calvert (2010) of the Highwire Management was used to determine the risk taking behavior of the deans. It is a fifteen item questionnaire that determines the level of risk taking behavior of the deans. A structured interview consisting of five cases each on loading, promotion, faculty development, faculty evaluation and curriculum development was conducted. Frequency count, percentage and chi square test of independence were used in the analysis of the data. The cases were thematically analyzed by determining the recurrent and dominant theme in each of the issues.

The respondents were the college deans of Aparri, Andrews, Carig, and Piat campuses. These are the colleges taken in the study because only the colleges not found in Tuguegarao were considered in other campuses namely: College of Agriculture, College of Arts and Sciences, College of Allied Health Sciences, College of Business, Entrepreneurship and Accountancy, College of Criminology and Justice Administration, College of Teacher Education, College of Engineering, College of Fisheries, College of Hospitality Industry Management, College of Human Kinetics, College of Information and Computer Science, College of Nursing, College of Public Administration, College of Technology and College of Veterinary Medicine. Hence, one of the major limitations of the study is the nature of the sample. This is because only 15 college deans were included as respondents who represented the 15 different colleges in the university.

FINDINGS

The study reveals that majority of the deans display moderate risk taking behavior as consistently assessed by them and by their faculty members. This finding means that the deans moderately take risks in promoting someone with unlimited potential with limited experience and in tolerating ambiguity and unpredictability. These behavioral manifestations also surfaced during the interview when the dean respondents said, *"I believe that real performance of the teacher is based not only on students' evaluation but on how I assess him during classroom visits. I don't entirely rely on the results of student evaluation because at times students are bias in assessing their teachers", "All my teachers should be given equal opportunity to attend seminars. There should be distribution of 'wealth' in the sense that everybody has the chance to attend seminars".* Moreover, they somewhat see that failure is a part to the long road to management success and that through failures, they are capable of discernment in the losses and are able to handle disappointments well. Thus, the deans tend to sensibly take risks by choice, not only by necessity and recognize risk taking as associated with success. As such, they sensibly believe that risk no matter how many times they fail, there will always be another opportunity to risk again and perhaps succeed that time. In short, they have the tendency to adhere to unconventional management practices like promoting someone on the basis of potential based on sound judgment as long as they can maintain their "comfort zones". Therefore, in taking risks, they have the tendency to calculate the recompense of their behavior. This result can be attributed to the sex and age of the respondents, that is, deanship is dominated by females and majority of them are middle-aged.

On the other hand, most of them display normative decision making style. This implies that they tend to be people-oriented and their wants and needs are based around being peaceful and harmonious, to be understood, to be respected, to please others and for approval. As such, they stress the importance of communication, relations, teamwork, expectations, individuals' uniqueness, and understanding. Hence, the deans display normative decision making style because they like harmony so they have difficulty dealing with conflict and tend not to make unpopular decisions. They would prefer decisions which are well-liked by the faculty members to maintain their 'popularity' as leaders. This can be seen in the responses of the deans during interview in the following words, *"A better working relationship exists when faculty members work together with us", "I can sacrifice friendship for the betterment of the college".* Similarly, the deans' normative decision making style is succinctly expressed by faculty respondents on the following words, *"My dean usually gives chance to faculty members to attend seminars by spreading the privilege of professional enrichment", "My dean sacrifices friendship and thinks of the common good of the college".* This finding agrees with the moderate risk taking behavior the deans exemplified. The moderate risk taking behavior they display is in consonance with the normative decision making style they employ. Thus, they would always adhere to what the majority expects them to do. They restrainedly take risk because they are very much focused on the wellbeing of others and on maintaining harmony.

Furthermore, the results show that the deans generally display high risk taking behavior on loading and promotion while manifest moderate risk taking behavior on faculty development and faculty evaluation and demonstrating low risk taking behavior on curriculum development. This implies that the college deans become flexible in the policies of the University relative to loading and promotion to maintain harmonious relationship within the college and may choose risky behaviors which may seem contrary to the realization of the vision, mission, goals and objectives of the University. The risk taking in this area is seen when the deans decide to do these even if they know that they jeopardize quality and effective instruction. This can be noticed on the responses of the deans in the interview such as *"I will give over load to a faculty member who is cooperative of the policies of the college as a way of thanking him. It is a way of rewarding a teacher who supports the*

college's policies and programs", "I will give over load to a faculty who is not giving me a headache" and "I will choose a faculty member who is cooperative to the policies of the college". Principally, the reason why they do this is to maintain the smooth interpersonal relationship within the organization. Thus, policies may be bent a little in order to ensure that harmony prevails in the college as well as the popularity of the dean to the faculty members is maintained. The deans take risks on loading and promotion basically because it is on these areas where their role as deans is felt. Similarly, it is in loading where the deans dip their fingers in matching faculty members with their load and have the options on whom to be given over load as a way of sustaining the support from the faculty. Likewise, it is also within their domain the listing of faculty members to be recommended for promotion. The deans have the last say on whom are to be included in the list of promoted because they are given the blanket authority to recommend faculty for promotion. In the performance of these roles, the deans see to it that majority of the faculty members are benefited from overload and promotion. This finding agrees with the normative decision making style shown by the deans that is, approval of people whom they worked with is important. They could afford to display high risk taking behavior in loading and promotion to make certain that the rapport within the college is maintained.

On the other hand, the deans employ thinker decision making style relative to these functions because these major roles entail high expectations of themselves and others. They are seen as the focal person in these areas and decisions lie on their hands. Hence, they are considered as managers in their respective colleges. That is why they want solutions to be fair and take flaws of process into consideration. It is for this reason that that they enjoy debating the pros and cons of a situation and become irritated by surprises and irregularities. This finding is in contrast to the normative decision making style they employ. Generally, the deans display a behavior which considers more the 'pulse' of the college because they give priority to team work and harmony. .

Finally, the managerial ethics commonly exemplified by the deans in resolving dilemmas in their respective colleges is beneficence. The principle of beneficence guides the ethical theory to do what is good. This priority to "do good" makes an ethical perspective and possible solution to an ethical dilemma acceptable. This finding substantiates the moderate risk taking behavior that they displayed as well as the normative decision making style they used in the execution of their roles as managers in their respective colleges. The upholding of collaboration and accord in the college leads to the practice of beneficence. Hence, the deans consider the gain faculty members can get from their decisions and promote the advancement of the stakeholders in the college. In doing so, they make sure that moderate risk taking behavior is displayed so as not to affront either the administrator or the faculty members. This is evident because of their position as middle managers – bridge between the faculty members and the administrators.

CONCLUSIONS

Considering the findings of the study, it can be deduced that the deanship, just like any middle level position, has limited latitude and breadth of power. This principally explains why the deans in CSU exemplify moderate risk taking behavior. They are caught in a dilemma on how to bring organizational results or even show loyalty to the person who has entrusted him/her the position on one hand, and how to implement policies emanating from the top without much sacrifice of their smooth interpersonal relationship with their subordinates on the other. In short, to be in their position is likened to cooking "bibingka" in the traditional way wherein there is fire (pressure) from the top (key official) and the bottom (subordinates). Thus, how to handle these two great pressures brings them to take moderate risk taking behavior.

However, along areas on which their roles are central to their positions as deans such as on loading and promotion, there is a greater tendency for the deans to display high risk taking behavior since these are the roles where their presence is felt. This is attributed to the fact that these are the key roles they play where they call the "shots" so to speak. As deans, they have the ultimate pronouncement in terms of the subjects assigned and schedule as well as the list of recommended for promotion. In addition, it is on these areas where their authority as middle level leaders is tested. In displaying high risk taking behavior on these areas, they are nonetheless considered situational leaders employing "it depends" style. They take risks on a case to case basis because they have to maintain balance between the demands of higher management and the needs of their faculty members. Consequently, they become flexible in the implementation of the policies of the institution and adhere to popular decisions as well.

Essentially, the deans act as managers in the college where their roles are crucial in the implementation of varied activities and programs that promote advancement in the institution. And in deciding for the college, the deans as thinkers also consider the realization of the university's thrusts, goals and interests. Ideally, their position as middle level managers requires them to perform this as they are expected to continue a tight ship with the higher officials and become a team player in running the affairs of the university. They have to do this so as to maintain themselves in their position and to please the superiors who have placed them in power. This happens because along the way in their decision making, the good of the majority is always given utmost priority as indicated in their managerial ethics. Finally, decision-making and risk taking is context dependent. The context affects the form of decision analysis in many ways and the way decisions are made. In other words, the

structure as well as the culture of organization both influences the risk taking behavior and decision-making processes to a great extent. The deans may show more loyalty to persons (in low or high positions) than to the university as an institution. Primarily, this is attributed to the fact that deanship by its own nature is "by designation only" and hence, there is a need to show loyalty to the one who has bestowed him/her with the trust and confidence and at the same time make popular decisions for the subordinates to ensure his/her acceptance and popularity in the college.

Hence, Human Resource department should design activities and programs that cater to the needs of the deans such as the following: how to harmonize organizational and employees' interests; decision and risk analysis; effective organizational communication; and interpersonal effectiveness.

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SCHOOL LEADERS' PERCEPTIONS ON INTERCULTURAL EDUCATION

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Abstract: The increasing diversity of students in our schools have brought school leaders to realise the importance of investing their time and energy in Intercultural Education. The paper examines the perception of eight successful school leaders in their daily quest of weaving intercultural practices in their schools and highlights the factors which contributed to this success. Interview analysis suggests that school leaders have heightened awareness of need for Intercultural Education and emphasise the benefits to other educational stakeholders. They stressed the need to channel more resources to fund projects that enhance the multicultural environment of their schools and placed strong emphasis on the need to train teachers in culturally responsive pedagogical practices. The paper concludes by suggesting ways to augment research in intercultural education, thus providing a strong knowledge base for future practitioners.

INTRODUCTION

In today's globalised world, many schools are experiencing rapid changes in their demographics due to the influx of multiethnic students permeating the walls of their schools. Children from different socioeconomic statuses, skin colour, religious beliefs, linguistic differences and cognitive abilities form a heterogeneous mix of learners whose common goal is to feel part of an exciting journey called schooling. Catering for such myriad of differences has precipitated an impending need for intercultural classroom practices catering for culturally diverse school populations. These practices have been the subject of intense debates among educators generating a variety of opinions (Gurin, et.al. 2002; Zúñiga, Nagda & Sevig, 2002). Individual perceptions shape how one sees the world around him/her and act in ways which do justice to his/her beliefs as an educator. Research suggests that the perceptions which school leaders hold towards Intercultural Education are key determinants into the success or otherwise of its implementation in schools (Alviar-Martin & Ho, 2011; Sleeter, 2000; Schoorman & Bogotch, 2010). Villegas and Lucas (2007) further emphasise that school leaders' approach to Intercultural Education has an impact on the way students understand and respond to culturally responsive teaching. Hence it is important to study how school leaders perceive the implementation of Intercultural Education in their schools. While research on Intercultural Education has been going on for a number of years few studies have focused on school leaders' perceptions towards its implementation. This study aims to provide scholarship into the perceptions of Maltese school leaders on Intercultural Education and gives an account on how are these perceptions are translated into concrete educational outcomes for both teachers and students. The study also attempts to forge new avenues in positive intercultural school practices.

LITERATURE REVIEW

A salient feature of *The Maltese National Minimum Curriculum* (2012) is the promotion of respect for diversity with the aim of instilling in the learners the values of tolerance, understanding and mutual respect. Several scholars suggest that the cultural diversity of a country is evidenced in school systems (McCray et al., 2004; Nelson & Guerra, 2014; Okoye-Johnson, 2011). In Malta, contrary to popular perception, the majority of ethnic minority students come from Western Europe and only 15% of ethnic minority students come from African countries. Muslim students account for 25% of students belonging to minorities, with the majority being of Christian origin. Such a high influx of multiethnicity in Maltese schools is calling on school leaders to develop the skills necessary to promote cross-cultural education.

INTERCULTURALITY AND INTERCULTURAL EDUCATION

Leading, teaching, and learning are interconnected parts of school improvement. Fullan (2001) pointed out that school leaders constantly experience the challenge of promoting and sustaining "learning under conditions of complex, rapid change. [As such, schools] must become learning organizations or they will fail to survive" (p. xi). Leaders embark on the exciting journey of leading their schools with a mission of responding to changes, generating physical resources, and motivate and inspire teachers (Day, 2004; Fullan, 2002; Hackman & Johnson, 2004). School leaders are the bearers of strong moral principles which are exemplified in their social conscientiousness towards their staff, parents, students and the community (Fullan, 2002). Also, as Day (2004) rightly points out that success for school leaders is heavily dependent on their passion to lead their school with

enthusiasm and strive for achievement in an atmosphere of collaboration, care, cooperation, commitment, inclusivity and trust.

Fullan (2002) also suggests that "the single factor common to successful change is that relationships improve" (p. 18). Positive relationships, therefore, provide the necessary fabric upon cooperative learning, mutual collaboration, critical reflection and knowledge sharing take place. Mulford and Silins (2005) also stress that for any significant change to take place "the context for leadership and school reform must be taken more into account" (p. 150).

School leadership and pedagogical practices are interrelated. Pedagogical vision stems out from the way the leader leads and the manner in which the teacher accepts and translates such leadership into everyday practice. During communicative processes between school leaders and teachers culturally responsive practices are discussed. It is the responsibility of school leaders to promote culturally inclusive pedagogies which embrace diversity, as reflected in both school climate and the classroom learning environment.

Interculturality refers to a dynamic concept dealing with relations between cultural groups. It has been defined as "the existence and equitable interaction of diverse cultures and the possibility of generating shared cultural expressions through dialogue and mutual respect" (UNESCO, 2005). Intercultural education encourages the understanding of different people and cultures. It promotes teachings that acknowledge and values the normality of diversity in all areas of life. It strives to inculcate in learners the notion that we all develop differently and require different needs. Whilst promoting equal opportunities for all, intercultural education works to achieve individual and societal transformations which go beyond passive coexistence. It aims to develop a sustainable way of living together in pluricultural societies through the creation of understanding, respect for and communication between different cultural entities. Hence Intercultural Education lies beyond simple tolerance and moves towards embracing and celebrating the cultural wealth inherent within each individual.

Maltese education policies promote has high expectations for *all* learners and purport equitable educational experiences tailor made at reaching individual needs. It also aims to develop learners' aptitudes, knowledge and skills, to enable them to forge effective pathways in their educational journey. The challenges posed on school leaders by the increasing diversity of students are by no means unproblematic. In a study on leadership in multicultural schools, Aamodt (2004) found that most school leaders in primary schools lack training in intercultural education. The perceptions which school leaders have on how to manage and implement Intercultural Education heavily influences their decisions related to issues and events concerning the provision of education for ethnically diverse minorities. School leaders inherently engage in reflective processes and prioritize issues on interculturality and behave in manners which shape how they should be understood (Diamond et al., 2007).

School leaders must be vigilant on educational practices which sideline individuals and groups of learners. School leaders should also contribute to construct and develop practices aimed towards influencing the school's content, direction, and practice. There is no simple formula for best leadership practices within a culturally diverse school context. It is the role of school leaders to reflect on their school context and create environments that promote teaching and learning, as well as forging positive relationships between various ethnic groups. The increasing multiethnic diversity urges school leaders to direct efforts into catering for the educational needs of minority students (Dimmock & Walker, 2005). Dale (2008. p.8) argues that leading a culturally diverse school needs to be seen as a "normal state, and not a state of emergency" -a practice in which the principle of adapted education is understood to include all students in academic learning processes.

Ryan (2006) theorises that inclusive leadership involves the strengthening of relationships between school members, the careful distribution roles and responsibilities, and the sharing of purposes and goals within the organization. Ryan (2006) affirms the challenges school leaders face in multiethnic schools and stresses the need to examine the manner in which goals, responsibilities, and relationships promote or hinder inclusive practices. School leadership is therefore seen as a collective process where team members are influenced or influence others. Leadership is therefore a tool which catalysis team efforts into positive group outcomes outcome of, inclusive leadership. Inclusive leadership (Ryan, 2006) is therefore an unswerving and steady commitment towards the principles of equity and social justice. It purports to develop schools' curricula, policies, and teaching practices in such manner as it equips all students with the knowledge, aptitudes and skills required to ensure their participation, both at school and in the wider community.

School leaders, therefore, uphold inclusion and ensure that both students and teachers broaden their knowledge about cultural diversity, ensuring that teaching methods cater for all students irrespective of cultural diversity and that decisions are taken in full respect of, and reflecting the cultural 'weight' of teaching staff and students.

Inclusive Leadership is not only preventive but proactive in that it strives for change in school policies and practices that may be exclusive. It also attempts to generate knowledge by participating in local and international fora, thus increasing critical cultural awareness. An open and supportive school culture is necessary in order to establish a healthy critical dialogue where exclusionary practices are detected, recognized and challenged (Riehl, 2000). Stirring a school's cultures and practices towards inclusionary philosophies will not succeed unless school leaders, staff, parents and students partake and invest their time and energy into stimulating positive change. School leaders, however, are not always cognizant on the latent manner in which the school's practices inadvertently privileges some students and marginalize others (Riehl, 2000).

RESEARCH QUESTIONS
The study examines the perception of Maltese school leaders into creating meaning from the term 'Intercultural Education' and elicits from them the outcomes of implementing Intercultural Education. These perceptions characterise, influence and direct the interpretation of issues surrounding the school milieu (Ryan & Wignall, 1996; Diamond et al., 2002). The meanings they construct are shaped by the interaction of values, background, and personal and professional experiences, all of which have an impact on what they prioritize, emphasize, or disregard (Evans, 2007). Meanings are then translated into actions and outcomes. Such an enterprise is by no means easy and certainly challenging for school leaders. From this challenge three research questions stem out:

1. What are the perceptions of Maltese School Leaders about Intercultural Education in their schools?
2. How are these perceptions translated into concrete educational outcomes?
3. What is the way forward towards implementing Intercultural Education principles arising from these perceptions?

METHODOLOGY
The research study was conducted using a qualitative method of investigation. Denzin and Lincoln (1994) define qualitative research as a multi-method in focus, involving an interpretive, naturalistic approach to its subject matter. Qualitative research is an ideal method to uncover trends in thought and opinions and delve deeply into issues of concern. Qualitative research allows researchers to study phenomena in their natural settings, while attempting to create meaning and interpret them in terms suggested by participants. As with any small-scale research a critical issue was the choice of schools participating the study and also the selected pieces of data chosen to form the basis of analysis. It must be stated that schools were purposefully selected, based on their known cultural composition, disposition of school leader and student achievement. Eight school leaders, 6 females and two males, aged between 40 and 60 years, and purposefully selected on the basis of their known abilty to provide great information about the research in question. The data gathering instruments used in this study were open-ended semi-structured interviews lasting around forty-five minutes each. Interviews were recorded and data was transcribed verbatim on a wordprocessing application and coded for emerging themes with the aid of CAQDAS (Computer Assisted Qualitative Data Analysis Software). Validity of data was ensured by returning the final transcript back to the participants and soliciting them to check accuracy in transcription (Creswell, 2008).

ANALYSIS
The purpose of the research was to analyse the perceptions of Maltese school leaders educators about intercultural education and to discuss its implementation arising from these perceptions. Findings from the interviews were categorized into four themes.
These were: 1) More awareness on intercultural education, 2) Increase resources for implementing Intercultural Education, 3) Benefits of intercultural education, 4) Training of teachers into fostering a culturally responsive pedagogy.

1) More awareness on Intercultural Education
The school leaders interviewed stressed on the importance of speaking warmly and respectfully across all cultures present at school. Fostering mutual respect and trust demonstrates a keen awareness on the importance of working in a multicultural environment. "More tolerance", "mutual respect", "caring attitudes", "increased cooperation" and "need for more awareness" were statements words which came out often. A particular interviewee stated that she took particular measures in her school to promote intercultural awareness. In particular she communicated to teachers her intentions to include intercultural awareness as integral part of the School Development Plan (SDP).

Another school leader stated that each child has the right to receive education, irrespective of his/her (dis)abilities, socioeconomic status or cultural background. He also connected the religious saying taken from the Bible which says "Let the little children come to me", commenting that Jesus did not specify who the children were but included all children. This school leader associated cultural awareness with his religious and moral imperatives. Another school leader emphasised the importance of cultural awareness as tool towards the reduction of stereotypical behaviour and prejudices in schools. This would be the "gaining greater self-awareness and forming new friendships and relationships with others". Also "...by developing intercultural awareness helps teachers, students and parents to develop better interpersonal skills and equips all educational stakeholders to be better equipped in today's multicultural world"(excerpts taken from interviews).

2) Increase resources for Implementing Intercultural Education
All school leaders interviewed stressed about the need for more resources. Six out of eight respondents urged the education division to allocate funds specifically dedicated to the sponsorship of intercultural education. They also suggested the publication of books, leaflets and brochures which promote intercultural activities. DVDs may be used during professional development to assist teachers into planning for diversity in their classroom. Four school leaders emphasised the important role of parents into urging their children to socialise with children of different nationalities within the school environment. This would help students appreciating the pluralistic nature of our world and engage in an exchange of values with the cultures they meet. Libraries constitute an invaluable tool for educational stakeholders to promote intercultural competencies. School and classroom libraries should contain books by authors from different countries. Four school leaders also stated that the teaching of school subjects in different languages is virtually nonexistent and that initiatives need to be directed towards this aim.

Three school leaders advocated for the use of academic literature as an important source for awareness in intercultural education. Academic journals dive deeper into the subject and provide challenging and reflective reading for all stakeholders. Lesson planning which is
inclusive and reflective of the multicultural weight present in the classroom needs to be encouraged and supported. Besides there has to be lesson plans which specifically target the exploration of topics like race, socioeconomic disparities, ethnic diversities, gender differences and sexual orientations. These resources provide insights into approaching race and gender equality issues, empathy, and bullying prevention during class.

Five school leaders out of the eight interviewed perceived the library as an important resource for intercultural education to flourish in schools. One of the school leaders eloquently stated that despite the ever increasing numbers in students from multiethnic origin, there seems to be no awareness of the need to provide human resources which would partnership with existing teaching teams into providing an education which is inclusive of all cultures. One school leader stressed that the Ministry of Education needs to be providing more specialised resources which would help the integration of students from minor ethnic communities. Making use of human resources especially parents to make interesting presentations, targeting specific cultural aspects from various countries may prove beneficial in the classroom.

Two of the interviewees indicated that there needs specific support such as Arabic Language Teachers, Islamic Language Teachers, Russian Language teachers, Cultural Mediators and others. They argued that many a time parents need to fork out extra money to teach their children their language of origin. This is due to the lack of funds from the educational directorate. All school leaders interviewed mentioned that "language of instruction" will remain a major debatable issue in intercultural education and that a lot of resources are needed to educate ethnic minorities in their language of origin. These issues were regarded by school leaders as essential prerequisites towards the implementation of intercultural awareness in the classrooms.

3) Benefits of Intercultural Education
Three out of eight school leaders stated that diversity is an asset for educators and societies and that efforts should be geared at tapping this rich resource for the benefit of the entire Maltese community. One of the school leaders interviewed cited Kofi Annan, (Former Secretary-General of the *United Nations*) who said that "Tolerance, inter-cultural dialogue and respect for diversity are more essential than ever in a world where people are becoming more and more closely interconnected"(United Nations, 2004).

An effective school system views diversity as a springboard for potential growth rather than an unsurmountable barrier to student performance. Diversity provides flexibility to teachers and allows them to elicit hidden potential from their students. During the interview one school leader eloquently stated that her school is a model for intercultural education. She refered to her initiatives as 'effective, enjoyable and well worth the effort' and her leadership 'has never been so incisive and successful'. Hence, for Intercultural education to be effective in a

school, it needs not be promoted as an "add on" to the regular curriculum but as another skill incorporated in daily practice. It needs to form an integral part of the learning process permeating all aspects of school life, policy making processes, school development planning, professional development sessions, curriculum development, teaching methodology, student interactions, and learning resources. This can be achieved through continuous discourse and the inclusion of multiple perspectives and voices. This would benefit the development of inclusive curricula highlighting the important contributions which various colonizing powers had on our island (Malta).

According to the National Association for Multicultural Education (NAME, 2016), students studying within a culturally diverse environment develop a positive self-esteem, an increase in self-worth and develop multiple ways of thinking which ultimately have a positive effect on the whole community. Furthermore the American Association for the Advancement of Sciences (AAAS, 2016) points out that intercultural education benefits the development of problem-solving skills and promote constructive relationships with students, decreases stereotypes and supports cognitive and moral growth. Rather than letting themselves being constrained by their own cultures, these school leaders thrive upon multiperspectivity and influence students into affirmative identification with other cultures.

4) Train Teachers in Culturally Responsive Pedagogical Practices
Four of the eight school leaders interviewed iterated that although there exists no prescribed strategy as to what works best in the implementation of intercultural education, training into the basic principles of teaching for diversity needs to be enacted. Teachers need to be educated into the concepts underlying intercultural issues and into creating an evidence base to guide policy makers. They emphasised the importance of Culturally Responsive Pedagogical Practices preservice and inservice teachers. One school leader placed special emphasis on urging teachers to specialize in intercultural education as part of their professional development. He cited various examples on how teachers are trained in intercultural competencies and how these competencies are enacted in the classroom context. The issue of training teachers in intercultural competencies must be addressed urgently. One school leader argued that "teachers need to be able switch between multiple ways of seeing, thinking and solve difficulties arising from cultural incongruencies". Another school leader pointed out that teachers must first and foremost be critically conscious of their background and how this influences their planning in their classroom. Another school leader placed emphasis on developing skills to detect biases in textbooks, software, multimedia and other educational materials.

Three school leaders equated intercultural education with Culturally Responsive Pedagogy which "skilfully reaches all minorities present in the classroom". Equity pedagogy urges educators to cultivate a thorough understanding of the different learning styles students develop from their own cultural upbringing and use those learning styles to develop alternative instructional strategies aimed at helping all students learn subject content, notions and interpretations in the various content areas and academic disciplines. For such an enterprise to be possible educators will need to develop pedagogical aptitude, knowledge, skills, and dispositions that allows them to reach teaching objectives using differential teaching methods. Equity pedagogy advocates for the attainment of the highest of standards in academic quality for all students. Within the context of equity pedagogy classroom climates need to be redefined to include the academic success of all students, irrespective of their cultural background. Educational stakeholders who profess equity and social justice education would require knowledge about the historical heritage students and its contribution to their overall background, a genuine desire up reshape aptitudes and a commitment towards the development of social action skills. It would also mean debunking of myths on Intercultural education by raising awareness on the short and long term consequences of individual and institutional discriminations, racist and stereotypical attitudes, sexism, socio-economic differences, and other forms of discrimination emphasising basic human commonalities. As one school leader put it "we need to be the frontliners of this change ... we have a responsibility to stimulate change with valour and without fear and with a predisposition to continue learning".

CONCLUSION, RECOMMENDATIONS AND WAY FORWARD.
Due to the small sample, results cannot be generalised on the entire Maltese school population. Also, as in any qualitative study, findings cannot be generalised to wider populations. Unlike quantitative studies, findings of the research are not tested to discover whether they are statistically significant or not. Another limitation was that participants knew beforehand that the researcher was an activist in intercultural education and hence they could have felt compelled to provide the researcher with answers he was looking for.

Maltese Educational leaders are advocating for scholarship on culturally relevant pedagogies and skills in intercultural educational practices which will better serve the diverse student body found in our schools. Results from interviews have shown that the need for culturally relevant pedagogies is ever more powerful. Pedagogies which reflect the cultural composition of the classroom is beneficial for all students as is the insurgent need to

discuss issues of race and ethnicity without implementing "colourblind" practices. The need to promote more intercultural approaches in our schools is clear. How this need is met within the Maltese education system is rather complex question but the discussion demonstrates that this need is growing and requires immediate attention. The school leaders interviewed in this study have offered a wide and profound set of changes within their schools. Not only are they aware of the impending need for intercultural education but have embarked on a personal journey to promote opportunities together with their teachers and students. Fostering intercultural dialogue in schools became a self-professed goal. They transformed themselves into 'self-trained cultural brokers', aware of their ethnic background and how this is influencing their daily decisions. They are aware of their cultural heritage, are not dictated by it but carefully weigh conceptions and interpretations. They actively sought to broaden the curriculum and advocate cultural knowledge as a tool towards the implementation of Intercultural Education principles. They recognised that intercultural learning is the major driving force behind global coexistence, collaboration and successful leadership. They used the principles of intercultural learning as a tool to develop in their students the skills and abilities which will equip them in the future.

The impact of intercultural education on cooperative learning, prejudices reduction and stereotypical behaviours has been very well documented, as have been studies on social justice equity pedagogy. However, the relationship between leadership practices and intercultural education needs to be augmented. More systematic research, perhaps including the effects on parental participation would add values to such studies. Studies using the quantitative research approach, demonstrating the influence of intercultural educational practices on discrete measures of students' achievements (eg student grades, school attendance; participation in informal learning; success at postsecondary education, graduation rates and others) need to be developed. This would provide educational stakeholders with the necessary platform on which to further develop their roles and contribute effectively to the increasing challenging enterprise of educating across cultures.

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STUDENT INTERACTION IN A TRADITIONAL COLLEGE CLASSROOM AND INTERACTIVE LEANING SPACE

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Abstract: This study examines the extent to which classroom structure helps create opportunity for discussion, interaction, engagement, and effective use of instructional technology. Prior research indicates that discussion and interaction are central elements in fostering meaningful exposure to coursework as well as helping students in the course access knowledge and contemplate issues. The research presented here compares a 'traditional classroom' with a designed 'instructional learning space'. Data was collected at the end of the semester through online scaled-questioner surveys and reveals significant differences among the two classrooms in students' reported interaction and engagement with more slight variation in the effectiveness of instructional technology.

INTRODUCTION

The study from which this paper developed is a broad examination of the classroom structures and factors that affect learning in meaningful ways. By creating a dynamic and interactive environment -allowing for connection among learners in the classroom as well as with content matter– instructors may enhance the learning process in significant ways. In examining classroom structure (physical environmental factors), this study highlights the ability of students to engage fully in learning activities, small group activities, guided discussion, etc. the efficacy of such activities in meaningful learning and contemplation/reflection.

Discussion and interaction are central to fostering meaningful exposure to college coursework and in assisting students in the course access knowledge about the multiple aspects underlying coursework – encouraging contemplation of the issues students are facing in their prospective fields. The basis for this paper is situated in current research on the effectiveness of content presentation (i.e. guided peer discussion, engagement with content) and classroom structure on perceived levels of interaction, engagement, and effectiveness of instructional technology. The study is based on the idea that this type of classroom structuring can help college students more effectively engage with content, other students, and the instructor. In addition, this study might encourage other college instructors to contemplate how their classroom structure affects learning and how it can help their pedagogic development.

BACKGROUND

The effects of classroom structure on teaching and learning is of interest to instructors and administrators. Over the past 25 years, a vast amount of research has addressed the influence of classroom environment on student learning (Ames, 1992). Although there is some research on classroom environment, this literature has been dominated by the effects of class-size, and much has been limited in the extent to which classroom learning is connected to motivation (Meece, Anderman, & Anderman, 2006). However, more recent research has begun to look at the impact of classroom environment on how students process information and their metacognitive associations regarding their performance (Guardino & Fullerton, 2010). Classroom environment and its relationship with student behavior and academic achievement has begun to pique the interest of researchers looking at motivation, engagement, and performance in the classroom. As Guardino and Fullerton (2010) note, "[a] well-organized classroom permits more positive interactions…" and "environmental modifications are a preventive, whole-class approach" to assist in reaching all learners (p. 9). Allowing for maximal interaction with content and among learners may be key factors to effectively increase students' motivation through modifying classroom environment to maximize such interactions.

Designing learning environments centered around student interaction can be a challenging task (Tanner, 2013). Accommodating multiple learning styles and individuals appears a daunting task; however, as Tanner finds, 'classroom equity' and structure may go hand-in-hand. This 'classroom equity' or "teaching *all* the students in one's classroom, not just those who are already engaged, participating, and ready to absorb what is being taught" entails engaging all students in opportunities for interaction with others as well as content (Tanner, 2013, p. 322). In modifying classroom environment, attention to details of environment – spatial structure – assists in the additive effects of creating a successful classroom.

The college instructor's approach to teaching requires arranging the classroom spatial structure in a way that maximizes student learning and encourages student involvement in the development of learning strategies (Tanner, 2013). Environments should be developed so that students consider personal connection to the content. Classroom environment should maximize student opportunities to work together and collaborate. Additionally, students need to have ample opportunities to work in cooperative learning situations; engaging with content as they engage with others and meaningfully connect with issues prevalent in practice (Ediger, 2009). As Helfrich (2014) suggests the 21st century learner may be attuned to flexible learning spaces, given current trends in collaborative learning and subject matter engagement. This type of learning environment supports various modes of learning and instruction such as collaboration, small-group discussion, guided inquiry, etc. in a way that easily and effectively alters as needed.

Meece, Anderman, and Anderman (2006) emphasized the "influence of classroom environments not only on students' academic engagement and achievement, but also on their motivation and their self-perceptions" (p. 488). Classroom environment includes aspects of the physical environment as well as structured practices, and these factors can create "different goal structures in the classroom and influence student outcome measures" (Meece, Anderman, & Anderman, 2006, p. 489). Classroom environment is also shown to influence cognitive strategies. Classroom environments that are structured toward different goals allow students to adjust cognitive strategies to match their perceptions of what the environment requires (Church, Elliot, & Gable, 2001; Lyke & Kelaher Young, 2006; Meece, anderman, & Anderman, 2006).

Students' perceptions of a classroom environment can affect student cognitive strategies and influence their goal orientations. Goal orientations, perceived classroom structure, and cognitive strategies are interrelated, creating a dynamic framework. Furthermore, student motivation and performance has shown to be the result of multiple influences, including contextual factors such as classroom environment (Lyke & Kelaher Young, 2006).

CLASSROOM STRUCTURE AND STUDENT INTERACTION

Classroom environment can also have an impact on behavior (Guardino & Fullerton, 2010). It's important to know, for example, that the physical environment of the classroom can improve learning, and prevent problem behaviors (Ediger, 2009; Guardino & Fullerton, 2010). Problem behaviors are minimized in classrooms where students are more fully engaged. In addition, classroom ethos as well as student achievement is enhanced through well-structured and organized environments that allow for interaction. In addition to behavior and academic performance, recent research indicates the positive effects of classroom structure on effective and meaningful collaborative learning and student interaction.

Over the last 20 years, with the increasing emphasis on collaborative learning, problem-solving, guided (and independent) inquiry, and critical analysis of content, classroom structure and environment have become issues of import to educational researchers (Ames, 1992; Church, Elliot, & Gable, 2001; Tanner, 2013). Research has shown that classroom environment affects not only achievement and academic engagement, but also student motivation and self-perception. This has led certain researchers to claim that classroom environment plays a critical role in all aspects of academic development (Ediger, 2009; Helfrich, 2014). The extent to which the environment plays a role in learning is not fully known. However, we now have enough research to know that the environment does impact learning in a variety of ways. For example, the more positive and productive environments emphasize learning, understanding, skill development, and knowledge. In addition, a more positive classroom environment is focused on providing opportunities for the demonstration of collaborative ability and experiences that foster self-efficacy and academic performance (Helfrich, 2014).

Students in different environments will have a different experience in class, and different learning outcomes depending upon the emphasis of the course. For example, the memorization of course content provides a different experience for students than the use of graphic organizers, or activities that seek to make connections between new information and prior knowledge (Lyke & Kellehar Young, 2006). Interaction and meaningful connection with content may enhance the strategies employed by students of differing learning styles within a dynamic environment that encourages collaborative activities and structure (Helfrich, 2014). Such structures allow students to develop effective strategies of learning that are deep, meaningful, and personally relevant.

Researchers define deep strategies as those which help with the organization of knowledge. These strategies can be helpful when integrating new information with prior knowledge. These are also known as elaboration strategies and include activities such as paraphrasing, identifying important points, analogies, generalizations, connections, and expanding on material already presented (Lyke & Kellehar Young, 2006). Organizational strategies can include conceptual maps, projects, papers, and authentic assessment strategies. Although these types of activities

play a role in knowledge development, this paper is based on the idea that classroom seating and structure plays a role in fostering deep strategies and elaboration strategies and can enhance organizational strategies. Finally, the classroom environment can also influence students' goal orientations (Lyke & Kelaher Young, 2006). Classroom environment can impact achievement goals, enhance engagement with content, and lead to effective strategy development for students with varied learning styles and goal orientations (Church, Elliot, & Gable, 2001; Ediger, 2009; Guardino & Fullerton, 2010; Tanner, 2013).

THE STUDY

The study examined two identical courses (two sections of the same course) taught by the same instructor in two different classrooms. One of the classrooms was a modified environment referred to in this research as the 'interactive learning space,' the other is referred to as a 'traditional classroom.' The traditional classroom has linear seating arrangements with stationary chairs. The interactive learning space has mobile Node™ chairs – a self-contained student 'desk' with built-in storage in the base, personal work surface, swivel seats, and casters. Ideally, the Node™ chair makes maximum use of the classroom space and allows for flexible grouping and seating arrangements. According to the manufacturer, *"a classroom can flex from lecture mode to groups, and back again, without interruption. Node™ can take passive space and make it active, supporting active and team-based learning, even when student density is important"* (Steelcase, Inc., 2015).

A number of schools have started using flexible instructional spaces including this with shares that provide the option of developing collective work spaces. (Helfrich, 2014). As Helfrich notes, "[i]f working at a project table seems too confining, students may opt for a more mobile option. With a swivel work surface to support books or devices and casters to move freely, Node chairs allow for instantaneous collaboration" (p. 77). These dynamic formations allow students to transfer easily between group work and individual work. The belief is that these educational environments influence students' learning and attitudes (Park & Choi, 2014). As posited by many researchers, spatial environments that offer ease of transition between tasks and encourage interaction help students connect with content and develop effective learning strategies (Church, Elliot, & Gable, 2001; Ediger, 2009; Guardino & Fullerton, 2010; Tanner, 2013).

In additional to seating arrangement, the interactive learning space seeks to foster learner engagement through the use of interactive whiteboards and smaller, portable whiteboards placed throughout the spaces to be used for notation of ideas as well as projection from various sources (i.e. instructor and student laptops) for viewing by the entire class. In addition, the interactive learning space is equipped with Apple TV allowing instructors and students to project from their iPads and/or iPhones. Replacing the traditional rows of desks with a variety of configuration possibilities in seating allows students to see each other, augmenting peer-to-peer interaction. The instructor podium is placed within the space and reduced in size to support a facilitator, rather than lecturer, role. Both spaces support a maximum enrollment of 24 students to allow for extended personal interaction.

The aim of the research presented here is a comparison of the modified classroom with a traditional classroom to see if the adapted space creates a more positive experience for students, thus improving learning and student retention in college-level courses. With the body of literature pointing toward the positive effects of interactive learning environments, with their dynamic seating arrangement and extended interaction, the study provided data that appears to show the beneficial effects of a dynamic interactive learning space with physical characteristics conducive to engagement with others and meaningful connection with content.

METHODOLOGY

A total of 98 students participated in the study. The students, enrolled in a Foundations of Education course, attended a face-to-face class in one of two types of classrooms – traditional and interactive learning space. In the program, classes are conducted in lecture format, but are supported by weekly discussion groups. Each section of the course allows for approximately 25 students, meaning 50 participants per semester for two semesters for a total of 100 students eligible for participation. Of this 100 eligible, 98 participants completed the surveys.

Data was collected at the end of each of the two semesters through online scaled-questioner surveys. Announced by an email distributed after final grades were entered, participants voluntarily completed questions on a 4-point Likert scale and included personal responses on open-ended questions, if they desired. The study utilized Qualtrics™ survey software to assure anonymity of participants and integrity of data.

Data was analyzed with a simple frequency analysis and comparisons/contrasts made between the different sections of the course. Histograms were made detailing the responses to each of the questions, broken up by section.
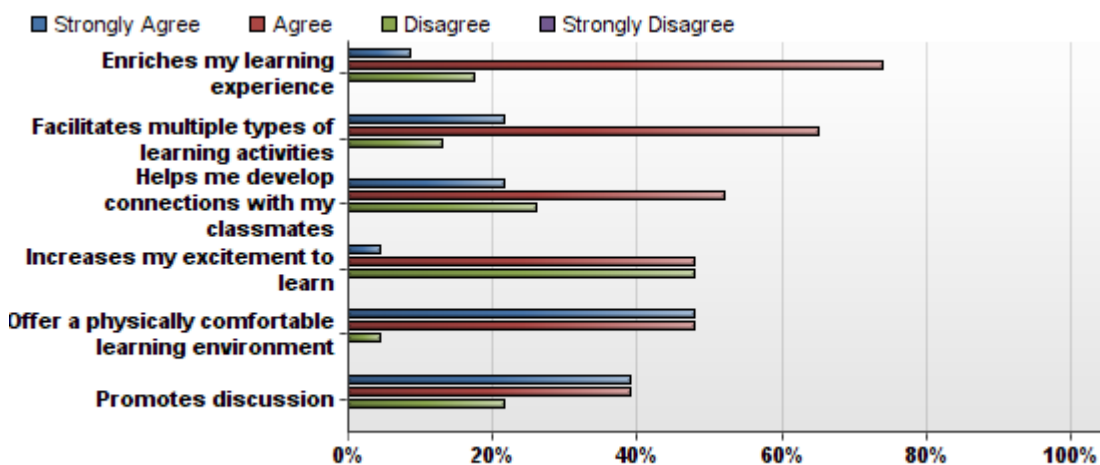
DISCUSSION OF RESULTS

Although there was some similarities in the reactions to the interactive learning space and the traditional learning environment, in many areas there are significant differences. Participants reported specific feelings or impressions about the classroom structure and the ways in which they believed it affected the learning environment and/or learners. First, I discuss the interactive learning space results and then move on to the traditional classroom reports; finally, discussion of differences in the two classrooms is offered and future directions suggested.

INTERACTIVE LEARNING SPACE

Because the interactive learning classroom in question is utilized for a variety of specialty courses, it is possible that a few students had prior experience of such a space. In fact, 5% of students indicated they had taken a course in a similar classroom – leaving 95% reporting no familiarity with this particular classroom environment before taking this course.

The following table depicts the surveyed results of the interactive learning space classroom students. For brevity in reporting results, the categories 'Agree' and 'Strongly Agree' (and conversely, 'Disagree' and 'Strongly Disagree') are aggregated and reported as total statistics.
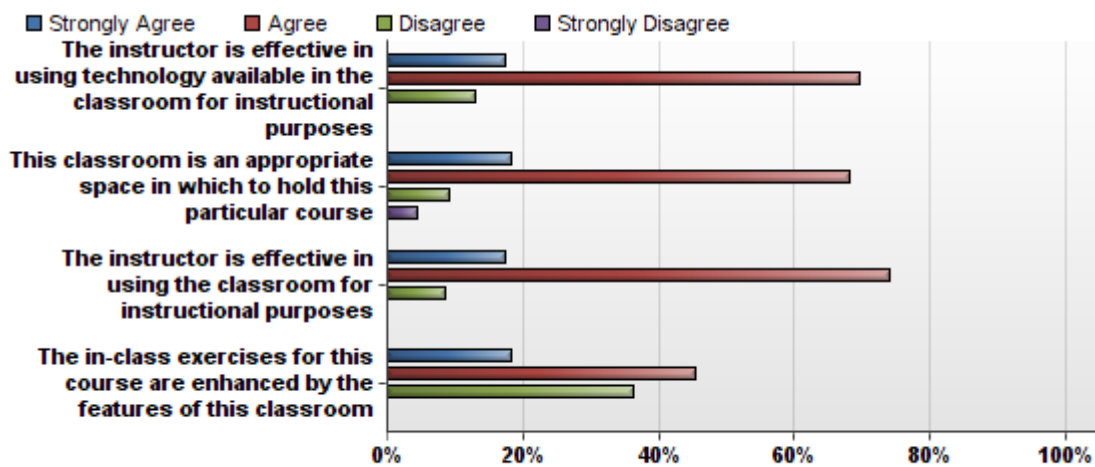

In the interactive learning space, a slight majority of students felt that the classroom increased their excitement and interest in learning. Specifically, 52% of students agreed or strongly agreed the classroom increased their
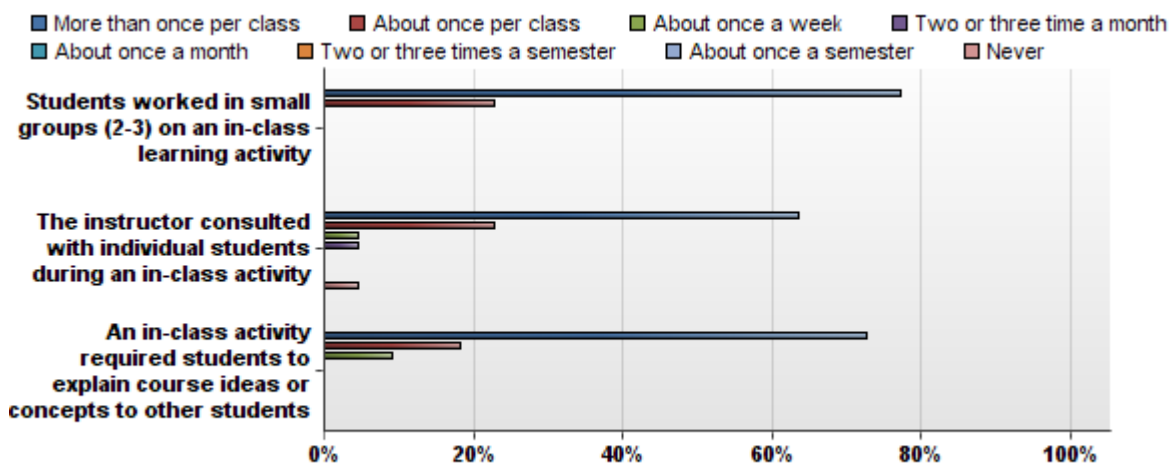
interest in learning. However, a vast majority of the students felt the classroom enhanced the type of learning activities available, and enhanced their learning experience. In fact, 87% of students felt the classroom enriched their learning experience while 78% of students indicated that the classroom promoted discussion and __% thought it helped develop connections with classmates, and 96% felt the classroom offered a physically comfortable learning environment. Finally, 82% of participants believed that the classroom nurtured a variety of learning styles.

Interestingly, less than half of the students (roughly 41%) felt that the classroom helped them develop a connection with their instructor. One suggestion for this finding is that the majority of students felt the classroom was a less significant factor in getting to know their instructor than other, more personal factors or interactions.

In the interactive learning environment students overwhelmingly agreed that technology was easily accessible for instructional purposes, the classroom is an appropriate place for the course, that the instructor was effective in using technology, and that in-class activities were enhanced by the structure of learning environment. The graph below represents student feedback related to these questions.

Results from questions concerning frequency of interaction and in-class activities are shown below. An overwhelming majority of students reported that in-class activities occurred at least once per class and that engagement with course content often necessitated during these interactions. Although fewer students reported frequent interaction between instructor and individual students, that may be a matter of time constraints rather than any other significant factors.

In addition to survey data, the researcher asked participants to give personal feedback some on the learning environment. The following excerpts are taken from this feedback; provided in their own words:

I like the individual chairs. The chairs do move (for group discussions they could be clustered together). I liked the use of multiple screens for viewing the PowerPoint presentations. The circle made it easy to see who was talking.

It's easy to talk in groups in this space. The rows make it nice to break up discussion into smaller pieces that we can talk about in small groups and still share with the class.

It is a bigger space so it is easier to move around if we need to work with groups. Partner discussion, it is easy to turn and talk to a partner in the classroom to discuss the content

The room is great for group discussions in the way the desks are arranged.

The central focus is on the teacher and board. The classroom set up makes it easy for me to read and take notes from the professors PowerPoint. The small groups worked well because it allowed us to share and communicate ideas with our fellow students.
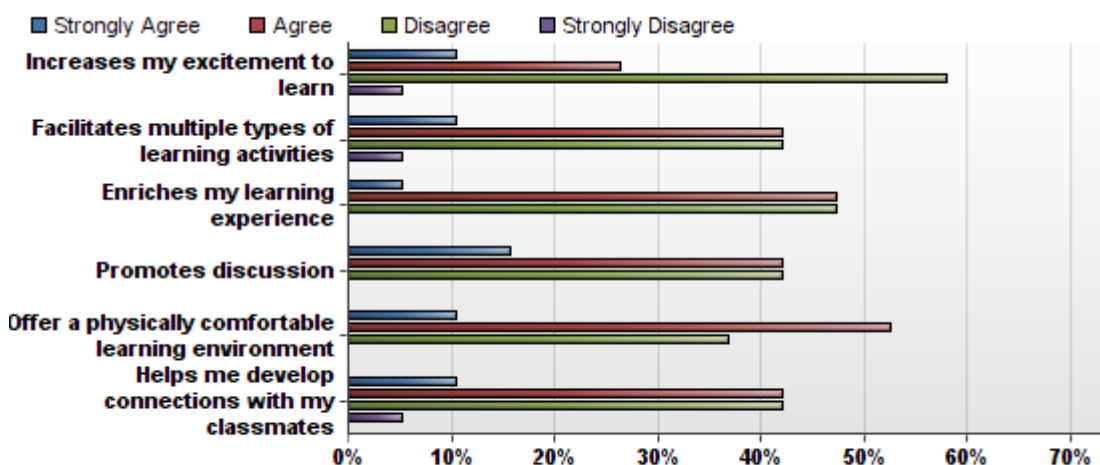
Any time we would have group discussion it was easy to hear other classmates and it was easy to ask the instructor questions because he was able to walk around the room. Also, the room was small enough so that you could ask him questions really wherever he was in the room.

The comments for the interactive learning environment were positive, and tended to focus on the flexibility in the arrangement of the classroom, the extent to which it provided opportunities for engagement and interaction (particularly discussion), and the extent to which the classroom environment allowed students to access the instructional technology.
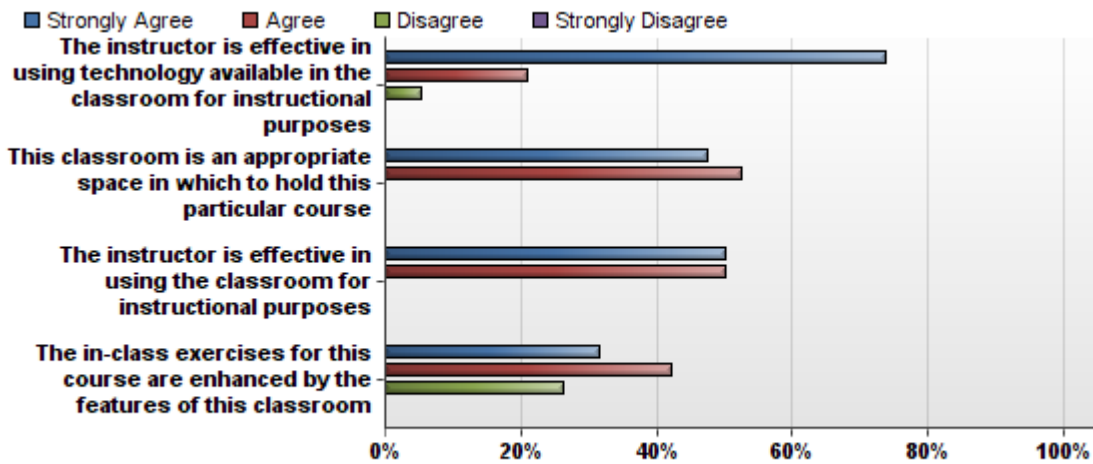
TRADITIONAL CLASSROOM
In contrast to the interactive learning space, 72% of the students in the traditional classroom indicated that they had taken a course in a similar classroom. Given the commonality of this traditional classroom structure, it is no surprise that the majority of students have experience with this environment. This also makes it easy to understand why a majority indicated that the traditional classroom offered a physically comfortable learning environment – familiarity may sustain a certain comfort level for individuals.
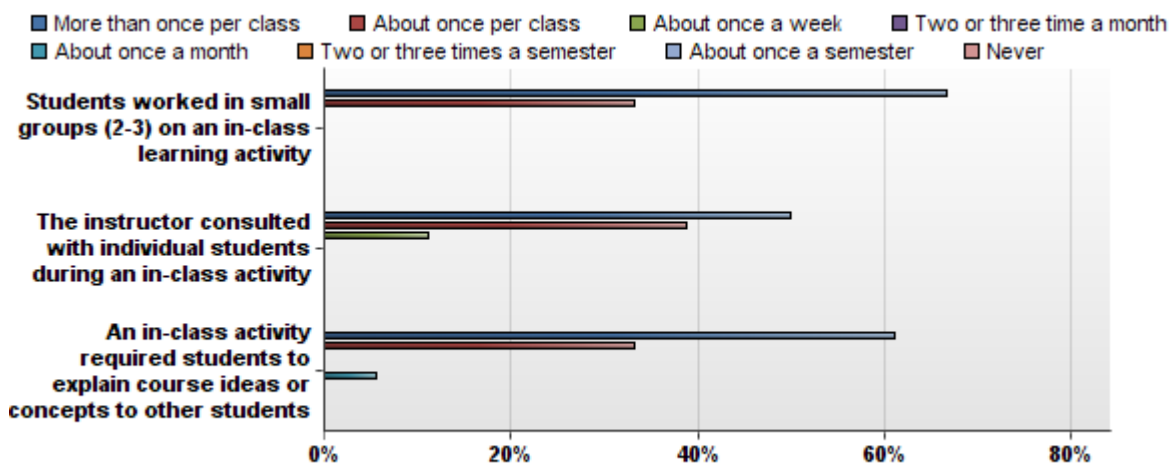
In the traditional classroom the majority of students indicated that the classroom did not enhance their interest or excitement in learning. In fact, 63% disagreed/strongly disagreed that the classroom increased interest in learning. The traditional classroom students were almost evenly divided on whether or not the classroom helped them develop connections with their classmates. Likewise, just a slight majority (52%) agreed/strongly agreed that the traditional classroom enriched their learning experience. Also, a mere 52% majority felt this classroom facilitated multiple types of learning activities.

All of the students in the traditional classroom agreed that it was an appriopriate environment for the course. In addition, all of the students agreed/strongly agreed that the instructor was effective in using the classroom for instructional purposes. A vast majority of the students felt the instructor was effective in using available technology for instuction. However, the percentage of students who felt the classroom features enhanced in-class exercises was not quite as significant. This may be attributed to the less dynamic environment of the traditional classroom with its relative difficulty in rearranging seating for these activities.

Both sections of this course are taught in roughly the same manner, with the same video clips, images, and powerpoint pesentations. In-class activities and discussion groups are utilized in both sections. All students in the traditional classroom reported working in small groups on in-class activities at least once per class. The majority of students felt the instuctor consulted with individual students at least once per class and in-class activities required engagement with content.

Students in the traditional classroom environment also provided personal comments in addition to the survey questions.In the traditional classroom, comments varied but tended toward the negative regarding spatial arrangement. The following are excerpts from these comments:

The classroom is visually unappealing, so I have a hard time focusing and staying engaged in the lessons.

The classroom works well with lecture dominate course but discussion based courses such as this they are better suited elsewhere.

Large group discussion is difficult because we are all sitting in rows. It's difficult to see anyone and so your comfort level in the room is rather low making it difficult to share any thoughts.

Doing group work, it is hard to form groups in the classroom because you may not always have room to disperse and when listening to other groups talk, you cannot see everyone in the room so it is hard to pay attention to who is talking if I can't see them.

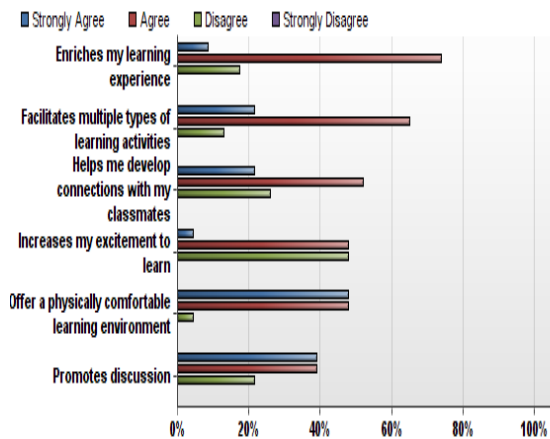*There could be more space to move around or see the screen.*

I wish it had windows. Sometimes I feel like I'm in a cinderblock cell.

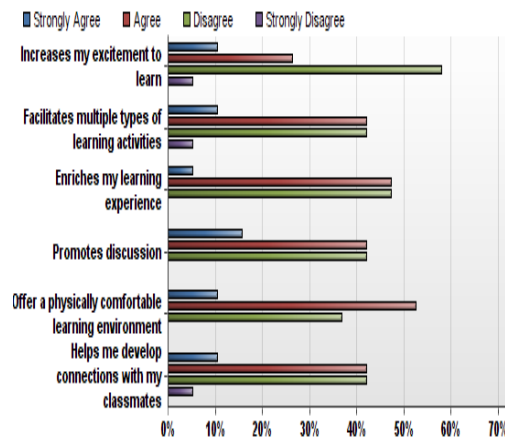*The room does not facilitate cooperation and communication among students*

It is a standard classroom...not much to report!

A SIDE-BY-SIDE COMPARISON OF THE RESULTS

Interactive learning environment   Tradidional Classroom

When we compare the above histograms side-by-side, we can see that on the question of enhancing the learning experience, the perceptions of students in the interactive classroom are more positive. Namely, the vast majority of students in the interactive learning environment felt that the classroom enhanced their learning whereas only about half of the traditional classroom students agreed/strongly agreed with this statement. Similarly, facilitation of multiple types of learning activities shows disparities in perceptions of students in the different classrooms, with over 80% agreed/strongly agreed in the interactive learning space while just over half agreed/strongly agreed for the traditional classroom environment.

Perhaps the most telling of these differences is in the development of connections with others. Just over 50% of the students in the traditional classroom felt the environment helped develop connections with others while over 70% agreed/strongly agreed the interactive learning promoted such interactions. With the significance this paper has placed in the efficacy of interaction, personal connection to others, and meaningful learning experiences, the differences noted between these classroom environments is highlighted and detailed in the belief that effective learning environments should be constantly evaluated and adjusted as needed. Interactive, dynamic environments such as the one studied here may well provide multiple benefits for varied learners, multiple learning styles, various content areas, etc.

CONCLUSION
This study revealed clear differences in perspective regarding engagement, interaction, and environmental effects on the impact of instructional technology. The interactive learning environment enhanced interaction between students and instructor, as well as enhancing interaction between students in the classroom in small group discussion and overall classroom participation. Students had a very strong belief that the interactive learning

environment enhanced their learning. Further studies would be helpful in better determining the actual impact of the interactive learning environment on student learning outcomes.

One surprising of the study was finding out that students in the interactive learning environment had higher expectations regarding the use of instructional technology. Future studies might help clarify more effective uses of technology and instructional strategies for using technology in interactive learning environments as opposed to traditional classroom.

Another clear indication of this study is that more research is needed on interactive learning environments to better understand their potential and effective use in teaching college students in the university setting.

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STUDENT TEACHERS' REASONS FOR CHOOSING A TEACHER EDUCATION PROGRAM AT ONE PUBLIC UNIVERSITY IN INDONESIA AND POLICY IMPLICATIONS

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Abstract: this paper was to report some of findings from a larger study with more than 800 participants that explored the altruistic, intrinsic, and extrinsic reasons of student teachers to become a teacher by choosing teacher education programs at one public university in Jambi, Indonesia. Particularly, this paper was to present the survey findings of the 65 male student teachers from all cohorts in one English education program. The data of this study were collected through demographic backgrounds and a questionnaire on student teachers' reasons in choosing English study program. The data indicated that a variety of reasons influencing student teachers to choose the English study program. It was found that male student teachers were influenced more first by the intrinsic reasons, followed by the extrinsic, and then the altruistic reasons. The paper also discusses the implications of the findings and draws conclusions which may be supportive to teacher education providers and policy makers on measures to recruit prospective students to initial teacher education.
Keywords: altruistic, intrinsic, extrinsic reasons, student teachers

1. INTRODUCTION

The relationship between teacher quantity and quality issues is clearly undeniable since students' academic, social success, and development are very much dependent on teacher factor than any other factors (Organization for Economic Co-Operation and Development, [OECD], 2005; Mukminin, Haryanto, Makmur, Failasfoh, Fajaryani, Thabran, & Suyadi, 2013; Sulistiyo, Mukminin, & Yanto, 2016). As a result, "interest in teacher education policy is growing as educators and policymakers recognize the deep connection between excellent teaching and student achievement" (Earley, Imig, & Michelli, 2011, p. 1). Additionally, teaching is an important profession and teachers are keys to success in education in this world (Lortie, 1975; OECD, 2005; Earley, Imig, & Michelli, 2011). According to Lortie (1975), teachers are commonly said as the agent of changes. Teacher can also be said as a facilitator in improving young generations' knowledge, character, and behavior.

However, the report from the Organization for Economic Co-Operation and Development (OECD, 2005) indicates that one of the major concerns related to teacher profession around the globe is "There are widespread concerns about long-term trends in the composition of the teaching workforce, *e.g.* fewer "high achievers" and "fewer males" (p. 10). This phenomenon is also happening in Indonesia, particularly at one public university in Jambi, Indonesia. fewer male students enter education programs. The decreasing number of male students attending teacher training institutions in Indonesia is an interesting phenomenon as previous studies have indicated a variety of reasons or motives for student teachers to choose teaching as their future career (e.g., Yong, 1995; Watt & Richardson, 2006 & 2007). Based on the previous studies, there are several categories that may influence young people to choose teaching as a future career: (1) task return (e.g. social status and salary), (2) task demand (e.g. expertise and difficulty), (3) personal utility values (e.g. job security, time for family, and transferability), (4) social utility values (e.g. shaping children's future), (5) self-perception (e.g. perceived teaching abilities) and (6) fallback career. Additionally, other previous studies (e.g. Chuene et al., 1999; Kyriacou & Coulthard, 2000; Low, Lim, Ch'ng, & Goh, 2011) found that the reasons why people chose teaching fall into three categories (1) altruistic reasons (reasons deal with seeing teaching as a socially worthwhile and important job), (2) intrinsic reasons (reasons cover aspects of the job activity itself), and (3) extrinsic reasons (cover aspects of the job which are not inherent in the work itself).

Understanding student teachers' initial reasons to become a teacher by entering a teacher education program is essential as a foundation to develop teacher education policies. In Indonesian contexts, understanding student teachers' reasons to become a teacher has been considered important to provide some explanations why the number of male student teachers attending teacher training institutions has been decreasing in Indonesia. Additionally, although there have been several recent studies examining teachers or students teachers' motives or reasons in other countries such as England and Norway (Kyriacou, Hultgren, & Stephens, 1999), Singapore (Low, Lim, Ch'ng, & Goh, 2011), Australia (Richardson & Watt, 2006), Dutch (Bruinsma & Canrinus, 2012),

Brunei Darussalam (Yong, 1995), US and China (Lin, Shi, Wang, Zhang & Hui, 2012), research on student teachers' motives or reasons in Indonesia is still comparatively rare. Resulting from the above phenomenon, this research paper was to present the survey findings on the 65 male student teachers from all cohorts in one English study program at one public university in Jambi.

2. THE CONCEPTUAL FRAMEWORK: ALTRUISTIC, INTRINSIC, AND EXTRINSIC REASONS

Altruistic reasons, according to Moran et al. (2001) and Low, Lim, Ch'ng, and Goh (2011), are going beyond any tangible benefits that the teaching profession have to offer. Those are also associated with the view that teaching is an important profession contributing to the betterment of society (Uwin, 1990; Young, 1995; Lin, Shi, Wang, Zhang, & Hui, 2012). People who choose altruistic reasons in influencing them in choosing teacher education program absolutely have a deep passion for teaching and see teaching as a socially worthwhile and important job, such as love to work with children, desire to help children succeed, shape future of children, enhance social equity, a desire to contribute to society, a socially worthwhile job, to fulfill a mission, and to answer a calling.

Meanwhile, Moran et al. (2001) and Low, Lim, Ch'ng, and Goh (2011) described that intrinsic reasons can be understood as job-related factors including the nature and conditions surrounding the job. While Manuel and Hughes (2006, p.6) defined it "as motivation for an individual's inner personal fulfillment 'bound up with a sense of the inner life, the self and the quest for fulfillment and purpose" such as interest in teaching activity, interest in using their subject matter/ enjoy the subject they will teach, job factor/fit, job opportunities or lead to another job in the future, inspired by role models, and opportunities for my academic development.

Extrinsic reasons are reasons cover aspects of the job which are not inherent in the work itself (Chuene et al., 1999; Kyriacou & Coulthard, 2000). Extrinsic reasons are included the benefit and perks offered, Moran et al. (2001) and Low, Lim, Ch'ng, and Goh (2011). There are many extrinsic reasons which can attract people in becoming a teacher, such as financial reasons/salary, long holidays, time for family, teaching as a stepping stone, a social status, job security and have no other choice.
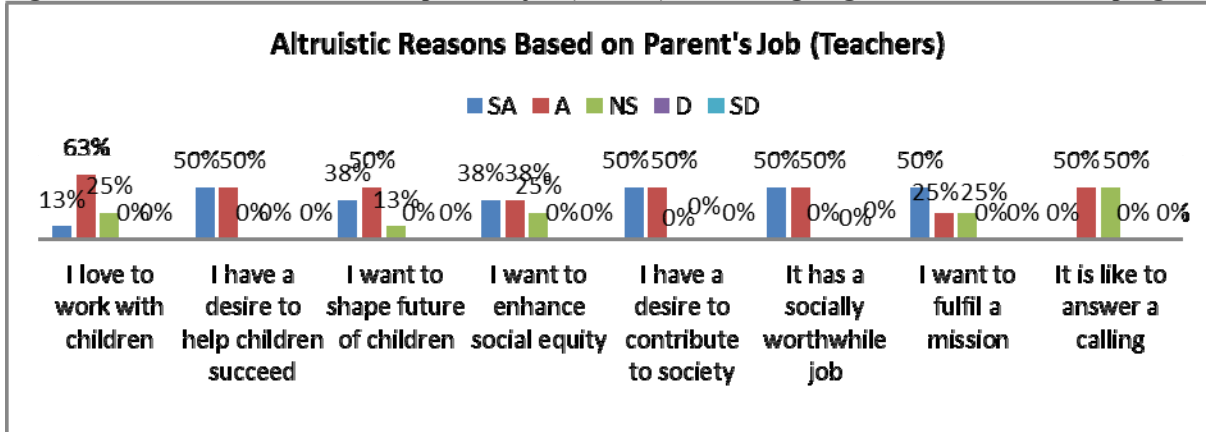
3. METHODS

A sample of year 2, 3, and 4 student teachers who between 19-21 years old and were enrolled at an English teacher education program at one public university in Jambi, Sumatra, Indonesia was investigated. This program prepares student teachers for teaching English for primary and secondary schools. From all cohorts, 65 male student teachers were available to be participants. Data were collected through a questionnaire. A questionnaire was designed with two sections. Section 1 requested demographic information about the student teachers while section 2 was used to explore the reasons of all cohorts of male student teachers to become a teacher by choosing English teacher education program.

In analyzing the data gotten from the questionnaire, the researcher interpreted the data by using descriptive statistics. Cozby and Bates (2012, p. 245), "descriptive statistics allow researchers to make precise statements about the data". By using descriptive statistics, the goal was to describe, summarize and make sense of a particular set of data (Johnson & Christensen, 2008). The researcher also considered about a think – aloud technique in the reliability while conducting this research. According to Johnson and Chritensen (2008), in this technique, the participants were allowed and asked to verbalize their thought and perception about the questionnaire and the researcher wrote down every single thing about participant's opinion. This technique helped us to determine if the participants got the same interpretation about the items in the questionnaire with us.
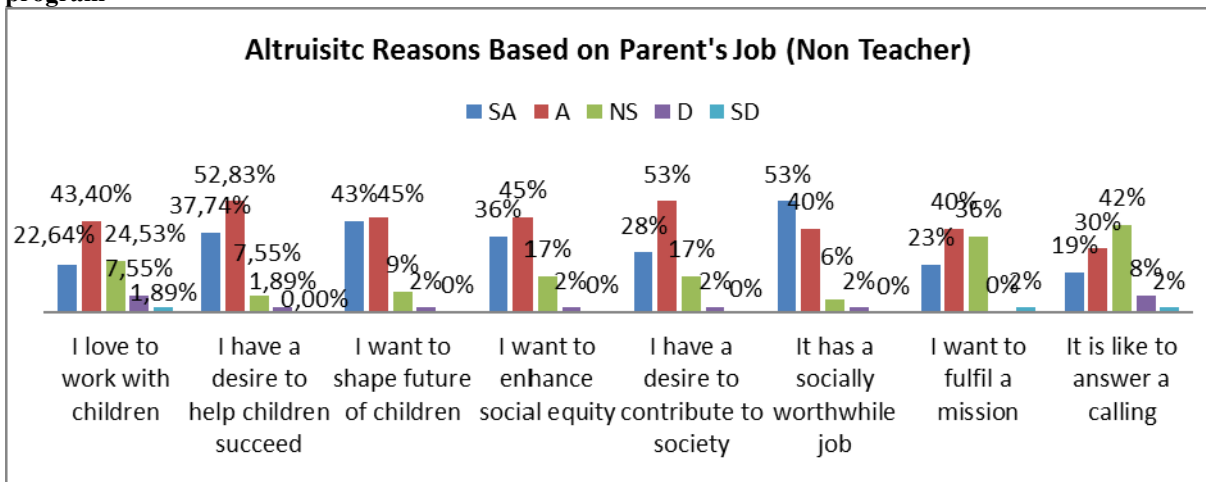
4. RESULTS

In this part, we analyzed the differences of male student teachers' reasons in choosing English teacher education program among student teachers whose parents had a profession as teachers and non-teachers based on altruistic, intrinsic and extrinsic reasons. There were 8 participants whose parents had a profession as a teacher, 53 participants whose parents had professions as non-teachers (farmers, entrepreneur, civil servants 'non-teacher', labor, and etc.), and 4 participants did not fill about parent's job. In this report, we did not analyze participants who did not state their parent's job. So, the total participants that we analyzed were 61 participants.

Figure1. Altruistic reasons based on parent's job (teacher) in choosing English teacher education program
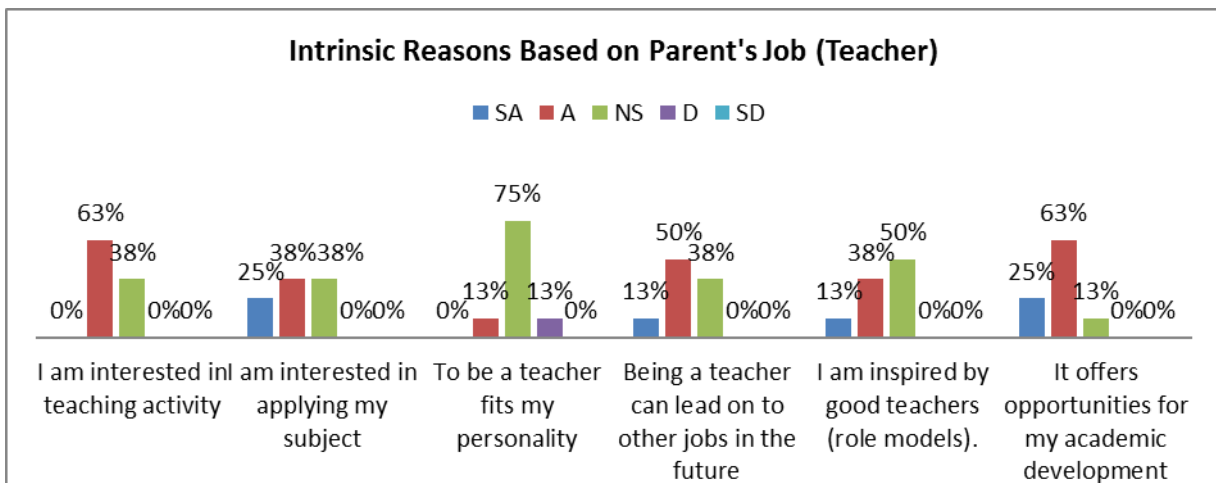

Figure 2. Altruistic reasons based on parent's job (non-teacher) in choosing English teacher education program
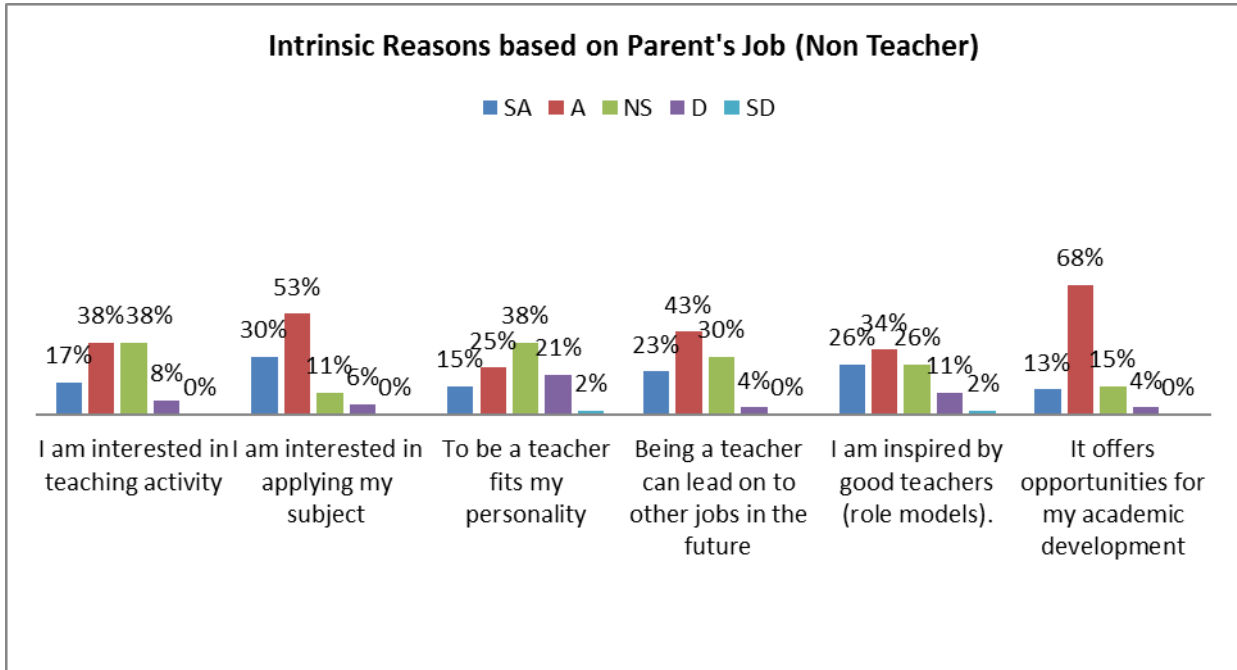

From the summary of responses presented in figure 1 and 2, the highest rank of altruistic reasons for participants whose parents worked as a teacher in choosing English teacher education program was "I love to work with children" with 5 participants (62, 50%) who chose "Agree", while for participants whose parents worked as a non-teacher was "I have a desire to contribute to society" with 28 participants (53%) who chose "Agree" and "It has a socially worthwhile job" with 28 participants (53%) who chose "Strongly Agree".

Figure 3. Intrinsic reasons based on parent's job (teacher) in choosing English teacher education program
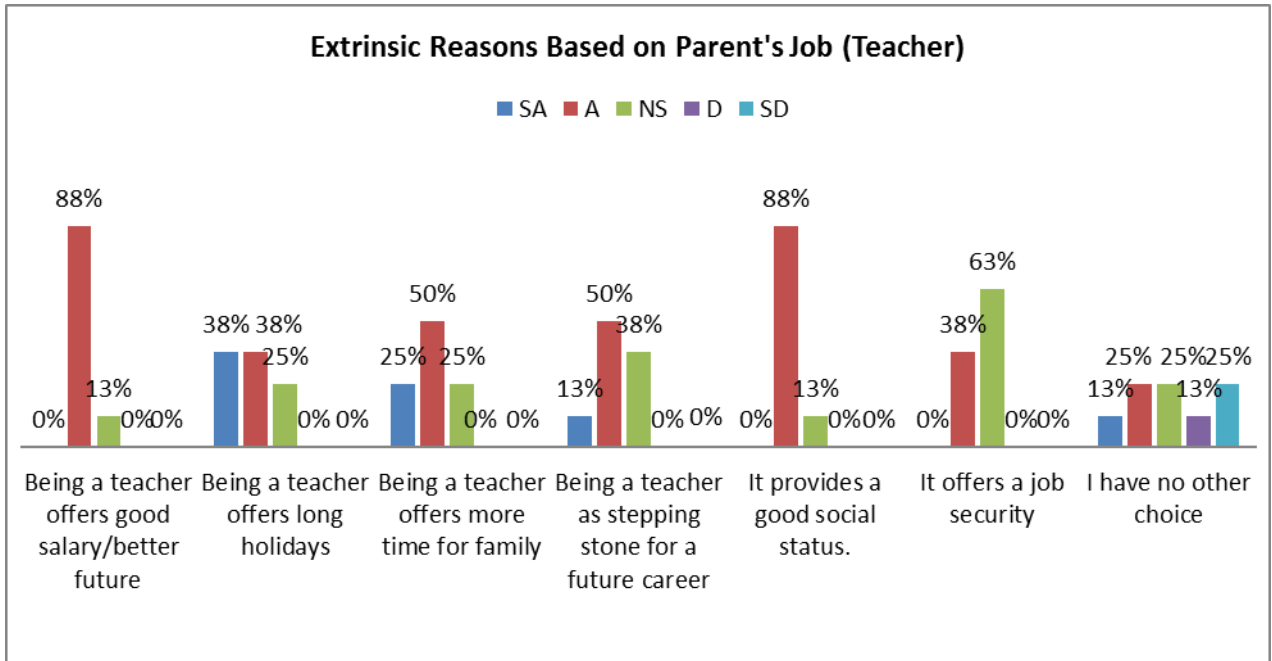
Figure 4. Intrinsic reasons based on parent's job (non-teacher) in choosing English teacher education program

Figure title: Intrinsic Reasons based on Parent's Job (Non Teacher)

The summary of the participants' responses presented in figure 3 and 4 indicates that under the intrinsic reason, the highest rank of intrinsic reasons for participants whose parents worked as a teacher in choosing English teacher education program was "To be a teachers fits my personality" with 6 participants (75%) who chose "Not Sure", while for participants whose s work as a non-teacher was "It offers opportunity for my academic development" with 36 participants (68%) who chose "Agree".

Figure 5. Extrinsic reasons based on parent's job (teacher) in choosing English teacher education program

Figure title: Extrinsic Reasons Based on Parent's Job (Teacher)

Figure 6. Extrinsic reasons based on parent's job (non-teacher) in choosing English teacher education program

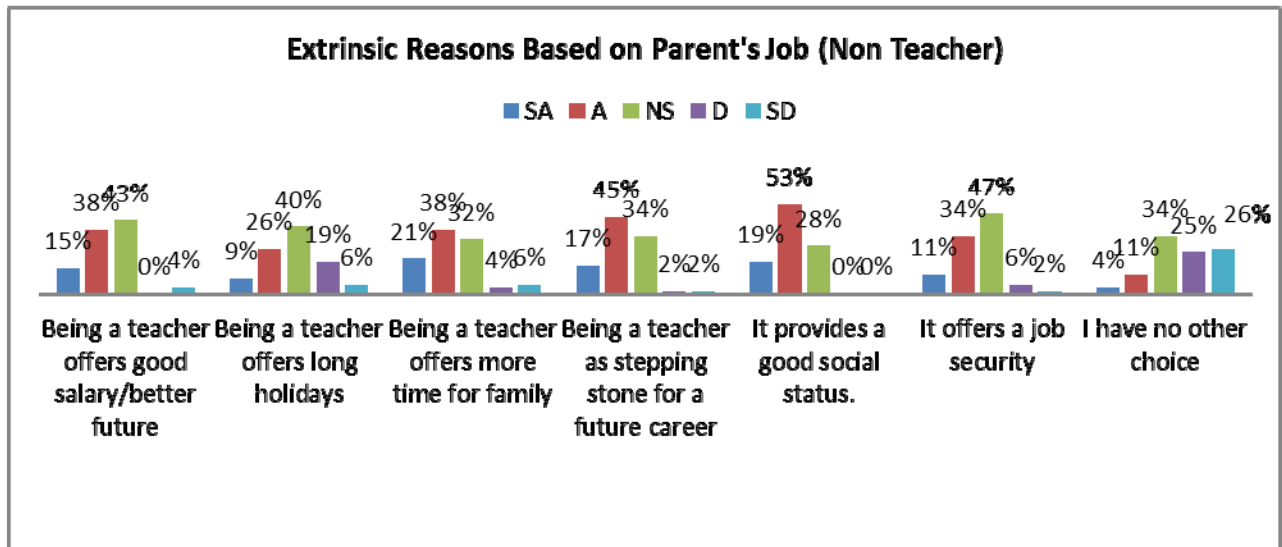Based on the responses of the participants in figure 5 and 6, the highest rank of extrinsic reasons for participants whose parents worked as a teacher in choosing English teacher education program was "Being a teacher offers good salary/ better future" with 7 participants (88%) who preferred "Agree" and "It provides a good social status" with 7 participants (88%) who preferred "Agree", while for participants whose parents worked as a non-teacher was "It provides a good social status", with 28 participants (53%) who chose "Agree".

5. DISCUSSION

The quality of teacher education will influence the success in educating student teachers to be a future teacher who will contribute to student achievement (Sulistiyo, Mukminin, & Yanto, 2016; Mukminin, Ali, & Ashari, 2015). One of the ways to look at the future teachers is to see who are the entrants to the teaching profession and what reasons motivate them to enter or choose teacher education programs. The success of improving the quality of education starts from the success of recruiting high quality and motivated student teachers as the entrants to the teacher education programs. This paper was to report some of findings from a larger study that explored the altruistic, intrinsic, and extrinsic reasons of student teachers to become a teacher by choosing teacher education programs at one public university in Jambi, Indonesia. Particularly, this paper was to present the survey findings on the 65 male student teachers from all cohorts in one English education program.

Our findings shed light on our understanding of the reasons among Indonesian student teachers in choosing English education program in order to be a future teacher. However, it is not easy to determine what reasons caused Indonesian student teachers to choose English teacher education program and which reasons took part in a greater role than others as all of the reasons seemed to be involvedly intertwined.

In our study, in terms of *altruistic reasons*, we found that the statement of "I have a desire to contribute to society" became the most selected reasons among others with 53, 85% of participants chose "Agree" for the statement. It means that more than a half of participants agreed that they had a desire to contribute to society. They were eager to teach or become a teacher because they wanted to give something to society in order to make a better society which enabled them to 'give back' to society. Our finding was in line with a study done by King (1993) who found that 86% for male participants chose the statement of "teaching contributes to the betterment of society." For the statement of "I have a desire to help children succeed," 52, 31% of participants chose "Agree," suggesting that participants in this study wanted their profession to be able to contribute to others, particularly their students. This finding is consistent with what Kyriacou, Hultgren, and Stephens (1999) stated that some people tend to help others in order they can feel better. Additionally, 50, 77% of participants chose "Strongly Agree" for the statement of "It has socially worthwhile job," 46, 15% of participants chose "Agree" "I want to enhance social equity," and indicating that they knew the value of becoming a teacher which is not only related to money, but also related to social values as Manuel and Hughes (2006) stated that people chose this reason because they did not consider about money in doing their job as a teacher. It also means that these participants felt that they had a responsibility to enhance social equity although in a study done by Bruinsma and Canrinus (2012), "enhance social equity" had a score in the below mid-point. For "I love to work with children

and "I want to shape future of children"," 46, 15% of participants chose "Agree," indicating that participants chose this reason because they love doing their jobs around children, love to have interaction with children, and feel happy seeing children. In our study, we found that 41, 54% of participants chose the statement of "It is like to answer a calling" in their reason for choosing English teacher education. A study done by Low, Lim, Ch'ng, and Goh (2011) also found that 19 participants (1, 8%) chose "it is like to answer a calling" in becoming a teacher. However, 38, 46% of participants chose "Agree" for "I want to fulfill a mission," suggesting that this statement was not one of the major reasons for student teachers to be a teacher by entering English teacher education program.

In terms of *intrinsic reasons,* for the statement of "It offers opportunities for my academic development," 67, 69% of participants chose "Agree." "I am interested in applying my subject," 50, 77% of participants chose "Agree," suggesting that the interest of becoming a teacher coming from the inner side because they like the subject. A study done by Ellis (2003) found that there was a high percentage for love of the subject (74, 6%) and a study done by King (1993) found that male participants gave 57% this statement. 46, 15% of participants chose "Agree" for the statement of "Being a teacher can lead to other jobs in the future". This finding is consistent with the finding of a study done by Snyder, Doerr, and Pastor (1995) who found that 12 frequencies among about 3000 participants chose teaching because teacher could lead to other jobs in the future. However, our study revealed that 41, 54% of participants chose "Not Sure," for "To be a teacher fits my personality," meaning that they did not really feel suitable for its job. It could be because they feel that teaching is not a challenging job, want a dynamic career, and offer life-long learning opportunities. Additionally, 41, 54% of participants chose "Agree" for "I am interested in teaching activity." For the statement of "I am inspired by a good teacher (role models), our finding indicated that 33, 85% of participants chose "agree," suggesting that 22 participants was inspired by the their role models (e.g. school teachers, parents, or friends) to be a teacher by entering English teacher education program

In terms of *extrinsic reasons*, we found that for the statement of "It provides a good social status" became the paramount percentage among other statements with 58, 46% of participants who chose "Agree." In Asian countries, teachers have a great position among the society, for example in China and Taiwan. In China, teachers are respected and seen as the authority of knowledge (Lin, Shi, Wang, Zhang, & Hui, 2012) while in US, people see teaching as a profession with a low social status (Lortie, 1975). In Indonesia, teachers are called as a hero. We also found that 49, 32% of participants felt "Not Sure" that teaching gave a job security, but 43, 08% of participants chose "Agree" for the "Being a teacher offers good salary/ better future." Several studies indicated that male student teachers were more attracted by extrinsic reasons than other reasons, especially about salary (financial incentives) (Johnston et al., 1999; Hobson et al., 2004). Interestingly, 44, 62% of participants agreed with the statement of "Being a teacher as the stepping stone for a future career," indicating that they realized that becoming a teacher could help them to develop their future career either in education or in other fields. Our study also indicated that 41, 54% of participants agreed that "being a teacher offers more time for family" was one of the reasons why they chose English teacher education program, suggesting that teaching hours fit with their responsibilities of having time for family and part time teaching (Low, Lim, Ch'ng, & Goh, 2011). Additionally, 38, 46% of participants were "Not Sure" that "Being a teacher offers long holidays" was one of the reasons they came to English teacher education program. They might not know that teaching profession provided them with more holidays or they rarely considered long holiday as one of the reasons in choosing English teacher education program. One of the interesting findings in our study was that 32, 31% of participants were not sure that "I have no others choice" was one of the reasons they chose English teacher education program.

6. CONCLUSION AND POLICY IMPLICATIONS

Quality teacher education has been a topic of major cross-national comparative inquiry and has been a major concern to governments, development economists, policymakers, politicians, educators, parents, sociologists, and researchers. Teacher education is a place to process teacher candidates or student teachers to be a quality teacher in order to to provide students with basic cognitive skills (writing, reading, and mathematics); to transfer particular or specific knowledge such as history, sciences, and literature; and to provide students with higher order thinking skills ranging from knowledge, comprehension, analysis, evaluation, and synthesis (Sadovnik, 2007). Additionally, quality (student) teachers inevitably function to help the governments to (1) instill faithfulness, loyalty, and commitment to the current political order, of training students who later will get involved in the political order, and of teaching them the basic laws of the society (Sadovnik, 2007), (2) to socialize students "into various roles, behaviors, and values of the society "(Sadovnik, 2007, p. 4), (3) to prepare students for their jobs in future and to train and distribute individuals into various levels of jobs in society, and

(4) to provide students with skills, attitudes, knowledge, beliefs, values, perceptions needed to participate "within their ethnic cultures, within the mainstream cultures, and within and across other ethnic cultures" (Banks, 2002, p. 40). Utilizing the altruistic, intrinsic, and extrinsic perspectives to look at the student teachers' reasons to become a teacher by choosing teacher education programs at one public university in Jambi, Indonesia, the findings of this study offer insights into what reasons influenced Indonesian male student teachers to enter English teacher education program. Among the three categories of reasons why male student teachers chose English teacher/ teaching education program, the findings of our study indicated that male student teachers were more influenced by the intrinsic reasons (e.g., "It offers opportunities for my academic development" chosen by 67, 69% of participants), followed by the extrinsic ones (e.g., "It provides a good social status" chosen by 58, 46% of participants), and then by altruistic reasons (e.g., "I have a desire to contribute to society" chosen by 53, 85% of participants). These findings indicated that more than half of male student teachers had a desire to be a teacher because of their inner sides, suggesting that they had a strong motivation to be a teacher.

However, the findings of this study should be considered in the view of some limitations. In spite of the fact this study will potentially contribute the sort of evidence necessary for looking at the reasons of student teachers to come to English teacher education program, there may be differences of reasons between male student teachers from one university to other universities or from one program to other programs. Regardless of its limitations, the findings from this study contribute to our understanding of a variety of student teachers' reasons to become a teacher by choosing English teacher education program.

Looking at the variety of male student teachers' reason to become a teacher by choosing English teacher education program, the implications for teacher education management and policies, particularly practices, and programs can be drawn from the findings of this. Policymakers at university and faculty/college level should change the selection of recruitment processes. First, candidates should be selected based on matriculation test results, the results of school diploma, and relevant records of non-school achievement. Second, candidates of student teachers should be tested on assigned pedagogical books. They are required to read pedagogical books and are tested on their understandings. Finally, selected candidates should be interviewed and asked to give details why they have decided to become teachers. Based on these phases of selection, top candidates are sent to colleges of education at any government universities at government expense.

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STUDY ON DEVELOPING THE ASSISTING PROGRAM FOR CUSTOMIZED HOUSING DESIGN FOR THE ELDERLY

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Abstract: This study aims to develop an assistance program for the customized housing design for the elderly, which is based on the rapid growth of the elderly and the increasing needs for better residential environment aroused by economic development and growth in income level.

Today we are facing various problems resulted from rapid increase in worldwide the elderly. In 2026, Korea will enter a super-aged society, which means 20% of population will be the elderly. Aging phenomenon affects various industries quite a lot. It is also making big change in the elderly housing market too. The elderly are not simply weak and in financial need any more. Now they have high marketability and new value. The elderly users tend to participate actively in designing the house.

In designing housing, bidirectional communication between users and architect is essential. For this, users must have certain amount of knowledge in architecture and need to express their requirements clearly. However, there are communication problems resulted from the lack of architectural knowledge.

Therefore, this study sets its goal to develop the assisting program for customized housing design for the elderly through harmonious communication with the elderly, the future key users in the industry. For this, literature review related to the elderly, interview, and user survey were conducted. Additionally, in-depth interview targeting the elderly and architects was conducted to compensate the defect.

Based on this research, for the basic knowledge of architecture of the elderly users, a learning model needs to be developed considering physical, psychological, and social characteristics of the elderly, and a learning model suitable to the characteristics of the groups needs to be proceeded. Also, the methods of participation and communication need to be developed through proper combination of "design" and "selection for menu and option". In conclusion, this study suggests the direction of future research for developing assisting program by the combination of the way of learning and communication.

Through this study, it is possible to increase the quality of the elderly housing. Also harmonious communication with architects through the assisting program will raise the user satisfaction. In the future, the assisting program proposed in this study will be developed to be applied to real users.

Keywords: the elderly, assisting program, customized housing, education, communication

INTRODUCTION

Our society is facing diverse problems in varying degrees owing to rapid increase in the elderly. Problems deriving from such demographic change had constantly been placed at the center of discussion since the 20th century, and Korea is no exception, with the elderly taking up 13.1% of the national population in 2015. This figure directly implies that Korean society has entered Aging society; being the 2nd fastest pace towards such tendency in the world. At this rate, Korean society will have stepped into what we call 'super-aging society', with the elderly rate rising to 20% of the entire demographic (Asia-Pacific economic status report-adapting to the changing world). This social phenomenon is presenting itself with a huge influence in various industries, which can be most observed in developed countries. It is influencing growth in health, education, finance, real-estate loan, leisure, telecommunication, and petroleum chemistry industry. Thus, it is required to change the conventional views on the elderly as weak and helpless, and adopt a new perspective to consider them as social

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group with remarkable marketability, and new values. With such change in aspect, various studies about the elderly have been conducted.

According to Lee and Lee (2015), changes in behavioral/life pattern has been observed since Korea's entrance into aging society, and the elderly presents themselves with more economic/physical independency with stronger sense of autonomy. Another study by Lee and all (2001), with continuous economic development and growth in income level, the desire for improvement of living quality has increased, and the users select the sites actively and participate in housing design to realize their desires. The elderly, however, in architectural design, requires more attention due to their unique psychological, physical, and social characteristics when designing their living spaces. In planning a living space that would precisely meet the user's needs, mutual communication is imperative method that is not sufficiently met with the elderly due to their lack of knowledge in architecture and physical difficulties. Therefore, for residential design for the elderly, it is required that the users themselves to be equipped with certain degree of architectural knowledge and education in order to deliver their needs to the architects.

SCOPE AND METHODS

This study intends to develop an assistance program for customized housing design for the elderly, which will be done by attaining an in-depth understanding of particularities of physical, psychological, social characteristics of the elderly by reviewing advanced researches regarding the elderly, selecting pedagogical & communicational methods that would best serve in developing architectural knowledge for the elderly, and reinforcing theoretical background by interviews with both architects and the elderly.

Designing a customized housing for the elderly requires adequate communication tools and methods between the residents and the architect, and a learning model through reviewing the characteristics of the elderly.
The detailed procedure of the study is as follows:
First, through literature review, selection of learning method & communication method based on the analysis of the characteristics of the elderly is conducted.
Second, preferred communication method and learning method is analyzed through user survey and interview with the elderly and the architects.
Third, adequate architectural learning model and communications method and tools are selected by classifying the characteristics of the elderly based on literary review, interview and survey.
Forth, a direction for an assistance program for customized housing design for the elderly are suggested based on the results above.

LITERATURE REVIEW

Defining the elderly and analysis of its pedagogical characteristics

Kang(1990) defines the elderly by 'those individuals who are comparatively incapable of leading a normal life due to apparent aging in both psychological and physical aspects, though the degree might differ amongst individuals'. Also, advanced studies state that they do present a set of distinguished characteristics that separates them from other demographical groups in terms of physical, psychological and social perspective; all of which are generally perceived as to be 'inferior'. Physical wise, they have limitations of movement, longtime education due to their declining height, weight, bones, muscle, intestines and respiratory capacity. Psychology wise, they suffer from loss of urge for learning new things, declined active problem solving capacity, loss of confidence and passion, and depression due to sentiment, attachment, reminiscence, dependency, emotional rigidity and introverted personality. Also, in social aspect, their changes in social status and roles, declined economic and intellectual capacity, change in lifestyle, relocation of habitat, they face related outcomes such as decreased chance of information acquisition, declined radius of activity and increased leisure time, and changes in interacting social classes.

Shin(2007) claims that it is not enough that we base the education of our the elderly on demographical statistics and socioeconomic traits, and will have to take into account their value, consumption, leisure and other in-depth understanding of their subjective and cultural tastes, along with a pedagogical method that differs from other demographical groups. In Korea, education for the elderly are conducted at class for the elderly, the elderly welfare center, life-long educational centers with university affiliation and religious centers; however, current status is hard to get a grasp with not even accurate statistics regarding the issue is provided(Lee, 2015)
There exists however a social bias that is represented simply by the phrase 'old dogs can't learn new tricks', saying that the elderlies are incapable of learning or adopting new skills or knowledge. Such bias derives from other set of prejudices that in the process of aging they are thought to lose their creativity, learning capacity and intelligence; however, such prejudices have proven time and again by advanced studies to have been a socially

constructed bias.

Hwang(2009) suggests that increase of the elderly with high educational background means that we could assume that the elderlies now possess capacities to develop professional knowledge in diverse fields. This implies that the elderly could attain professional knowledge on architecture. The growing level of educational attainment of the elderlies along with the rise of income level stated by Lee ad all(2001), and changes in behavioral patterns to a rather more active and autonomous one pointed out by Lee(2015)-all these changes leads to the elderly's tendency to actively trying to improve the quality of their living condition.

Studies regarding the learning capacity of the elderly mostly reach to an agreement at one point; that the interpretation of conclusion of respective studies are to be carefully done, for it requires great level of sophistication to attribute one's learning capacity to one's age. Here it is important that we distinguish 'learning capacity' from 'academic achievement'. Single most important factor in the education of the elderly is time, since it requires a certain amount of time for them to effectively absorb the materials and concepts they have learned, rather than short time memorization-and-exercise. Though the elderly might do poorly in terms of academic achievement when put to learning at latter situation, their outcome (information recall) is shown to be far better when given a rather long length of time. Thus, we could observe that in discussing the learning capacity of the elderly, the point is not whether they have successfully stored the information, but the condition of recalling the already stored information. Time has great impact on successful call-back of information, and for the elderly, it is absolutely vital that they are given enough time to fully search, regenerate, replay, react to the information they had just stored; when this is done, education for the elderly would face less difficulties. Thus we must recognize that changing the educational conditions and environment is the vital task that lies ahead of us, and that we should provide other types of teaching methods or environments than we do to students from other demographic backgrounds. Also, we must encourage the elderly students to form their own educational environment and conditions.
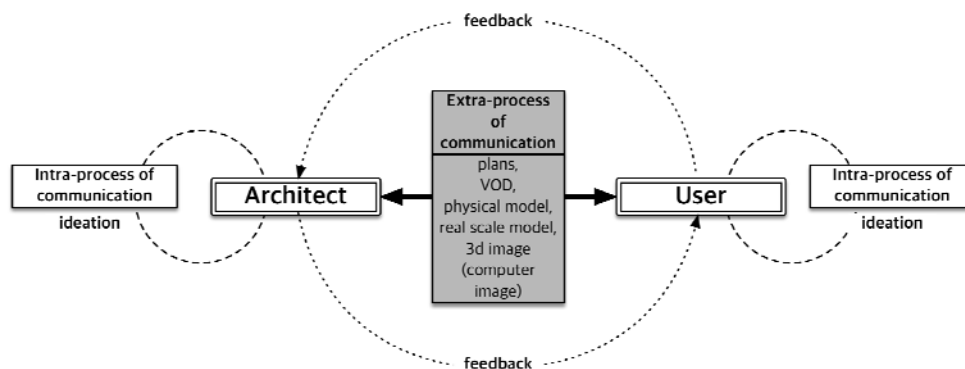
Analysis of communication model for designing customized detached residences

A construction project is usually order-made, which begins with order from user or proprietor, and involves participation of user, resident, designer, constructor, in varying degrees (Cho and all, 2006).

In case of detached residences, contrary to the supplier-oriented, multi-unit residences, the resident takes part in the designing process with great enthusiasm in order to fulfill his/her needs and desires (Lee and all, 1999). Therefore, in this case, the resident' role and his/her architectural knowledge are important, and the communication with the architect has greater impacts.

Joost van Andel(1997) emphasizes the importance of user-oriented designs for a new building or remodeling of the crucial parts. This means that during the design process by an architect, it is vital that the future residents, the users, express their demands as detailed as possible. In addition, Kim(2006) also points out that the users should fulfill their role to ensure the project to end successfully. It is general, however, that the users face difficulties in playing their part due to the lack of architectural knowledge.

Designing a detached residence is usually composed of composition/width/deployment of chambers, section and level component (Heo, 2015); the user is not necessarily required to be aware of all these procedures to a professional level, and would suffice to be equipped with adequate level of knowledge that would be required for a smooth communication with the architect. Also, the architect needs to understand the user's characteristics and reflect it to the design in order to design a residential space (ibid). For accomplishing such task, the architect utilizes his/her own knowledge to interpret the general characteristics of the user to design space, or reflect the demands and needs of the user through interview or letter.

Figure 1. Communication(User-Architect)

Kalay(2004) defined 'communication' as the process by which the provider of the information transmits the information to the receiver. She distinguished the types of communications into intra-process of communication and extra-process of communication.

Intra-process of communication(IPC), also known as "ideation", refers to the process by which the architect makes descriptions through media(ex: sketch), based on which the design will be developed.

Extra-process of communication(EPC) refers to the process where the idea is shared with the user via media(plan, model, 3D image), where opinions are adjusted. In the case of EPC, it is the other party who interprets the results expressed through the media. Therefore, it is common that the result is misled, or not be interpreted at all. Design communication is even more limited when the end-result is expressed through a more simplified form (Hong and Yoo, 2014).

Cuff(1996) suggested that most of the users or users fail to fully comprehend the architect's sketch or model, and arbitrarily interprets the suggested media descriptions based on their experiences or knowledge. Hong and Yoo(2014) also pointed out that in a cooperation design between different professional parties, use of rendering images or blueprints have apparent limitations in delivering user's complex actions that takes place in 3 dimensional space, and that design ideas can successfully developed only through active mutual communications<figure 1>.

FINDINGS

Learning based on characteristics of the elderly

According to the aforementioned analysis, the elderly has some distinguishing characteristics that separate them from other demographic groups. This study have classified those characteristics into physical, psychological, social characteristics, and analyzed their impact on learning capabilities.

Physical characteristics change as height/weight and BSA declines, and as respiratory system, kidney, blood circulation, digestion system, and nervous system starts to fail, with changes in postures as well. Also, decrease in learning capacity and cognitive ability is observed in nervous system that has to greatest impact on learning capability. Therefore, alternative method of learning is demanded for education for the elderly, such as online-education or visiting-education that does not require the elderlies to leave their residence due to their limitations in movement, or short-time learning composition due to limitations in course duration time caused by decreased cognitive ability & learning capability

In psychological aspect, changes in their emotions show loss of passion and liveliness, confidence. Depression commonly takes place as well. Attachments to familiar object   increase, while refusing new lifestyle patterns, which again leads to dependency and introverted personality. Therefore, individual goals for leaning are important for continuous progress and advancement. In the case of online-education however, it is rejected by the elderlies who are born usually around '50-'60, who has difficulties adapting themselves to smartphones and computers.

Socially, they are usually met with loss of social status, decreased role in the family hood, changes in the social classes they interact with, loss of spouse. Loss of economic capacity, decrease in range of activity, increased leisure time, migration due to decrease of family member is also common; of which changes in interacting social classes, increase of leisure time and weakened economic capacity would have impact on the learning aspect. Therefore, online-education that is economically less-burdening could be selected as the adequate education method. There is however a study that suggests a classic-learning method would turn out to be more adequate in case when they devote much of his/her time for aged-communities; thus it is important that we select learning model that would fit individual traits<table 1>.

Table 1. The elderly classification results

Type	Item & Factor scores	Cronbach's α
pursuit of happiness through self-development	4-0.888, 24-0.853, 17-0.853, 11-0.809, 8-0.715, 21-0.676, 15-0.668, 29-0.625, 28-0.606, 26-0.511	0.943
future oriented lifestyle	10-0.850, 23-0.771, 27-0.669, 30-0.666, 16-0.645, 3-0.582	0.847
anachronistic	5-9.829, 25-0.825, 12-0.770, 2-0.513, 32-0.401	0.768
knowledge pursuing	14-0.841, 31-0.732, 13-0.632, 1-0.598	0.743
socially active	7-0.752, 19-0.602, 6-0.550, 9-0.481	0.642

In conclusion, a survey had been conducted in order to classify the elderly into different groups in accordance to their specific traits; a modified version of VALS test was put to use as a way to classify the characteristics of the elderly. VALS stands for Value and LifeStyle, is a model developed at SRI International, California for defining co-relationships between consumer characteristics in the 70' U.S. Using this model provides the researchers with consumer types and traits, by assessment of demographic characteristics and the result of the survey, which takes place before the assessment procedure. This study had modified the VALS model in accordance to particularities observed in Korea, and conducted with 32 questions.

Distribution of the survey was done via a web-service called the Survey Monkey, and had surveyed the elderlies over 60; 85 questionnaire had been used for analysis, which were randomly distributed through email and internet communities with high average age. Coding was conducted after verifying the adequateness of the collected data, which was done using SPSS for Window 18.0. Factor Analysis was used for the analysis method, which lead to 5 groups and factor loading.<table 1>.

Group 1 turned out to prefer trying out something new, challenging, pursuing exotic and new things, and to have high desire to lead a happy life. Also, the cronbach's α is 0.943, explaining 21% of the entire variance. Hence in this study we will name them as 'pursuit of happiness through self-development' type. This group had high desire for learning in general, preferred a conventional type of learning to an online lecture, and was willing to actively reflect their opinions and voices in designing their residence.

In the case of group 2, we were able to observe that they enjoy making things for themselves, and are interested in hardware and machines. The cronbach's α is 0.847, which explains 10% of the variance. Hence in the study we shall name them as 'future oriented lifestyle' group. This group is capable of using computers, prefers online lecture, and is willing to actively engage in residence designing as did group 1.

Group 3 are particularly religious, and think that the television these days have too much sexual contents. Cronbach's α is 0.768, explaining 9% of the entire variance. The study will classify them as 'anachronistic' group. This group had less interest in education, and showed far less engagement when designing their residence.

Group 4 is intellectually active, who are interested in theoretical discussions and consider themselves as to be intellectual. Cronbach's α was 0.743, which explained 7% of the entire variance. The study have classified them as 'knowledge pursuing' group. This group had the highest desire for education. But their preference between two types of classes were hard to distinguish, and were passive in making plans for their resident.

Group 5 liked being the head of a group, and had tendency to trying to lead others. Cronbach's α was 0.642, which explained 5% of the entire variance. This study named group 5 as 'socially active' group. They showed similar patterns regarding education with group 1, but preferred conventional method of education to its online counterpart.

Communication for designing a customized housing

There would be various ways for describing a space, but the point is that they are for communication regarding spatial information. Especially, in communication process that arises between an architect and a user, space description realizes in concrete form what only exists in the architect's imagination through conceptual and cognitive ways. There exist many preventive methods that aim to minimize the loss of information during the process. Text, plan, section, concept, diagram, table, charts are methods that belongs to conceptual description, whereas model, real-scale-model, computer image, VOD(video on display) belongs to cognitive description method.

During the interview with the elderly and architects, the elderly had low level of space comprehension with conceptual description methods; whereas with real-scale-model showed the highest level of understanding, followed by VOD. We could also observe how the elderly have tendency to describe a space in accordance to their experiences, and requires comparison with already-existing experience to fully comprehend a new space.

The following chart shows the pros and cons of respective participation methods.<table 2>.

Table 2. respective participation methods

Methods	strengths	weaknesses
Design method	Customized designing enabled in accordance to the characteristics and traits of the resident	Communication between the architect and the user is vital, which requires the user to be equipped with certain degree of architectural knowledge
Selection method for menu and option	Residential space that would correspond to the characteristics of the resident could be selected based on statistics and architectural planning	Less customizable compared to design method, and has limitations in selection due to limited number of options
DIY method	The space could be designed fully for the resident due to his/her active participation in design process	Requires high-level of architectural knowledge and skills, with high rate of faults due to construction by un-skilled labor
Variable module method	The space is open to modification due to its initial openness to variables	Cannot fully reflect the residents needs in detail due to limitation in modification

User participation in residence design aims to reflect the main demands of the users to designing procedure. There are several ways by which this is done; Cooperative method where the user takes part in every procedure of the design and construction, from planning to management, Design method where the structure is designed by the architect whereas the interior is mainly designed by or cooperation of the user, Selection method for menu and option where the user selects from several blueprints, or selects composition, finish or part of the facility, DIY method where the user takes over from the construction phase, and the Variable module method where the user takes part in a certain degree in construction and utilization phase.

Unlike other demographic groups, in designing detached residence, the elderly have difficulties actual participation due to their characteristics which are usually limitations of various sorts. Therefore, the participation method for the elderly in designing a customized detached residence for the elderly, will have to be composed of design method, Selection for menu and option and variable module method.

Therefore, in selecting the necessary communication method for developing a user participation method that is aforementioned, we have conducted an interview of 5 the elderly and 3 architects. The former, are composed of those who are willing to construct a detached residential space for preparing their later-life. The interview was oriented in a way that it would give us an idea if they are aware of how they would deliver their requirements to the architects or if they have any architectural knowledge at all. The latter party are experienced group of architects who have accomplished numerous building projects and are still active(Seongjin-Baek, Mija-Lee, Jinkyu-Park). We have asked in detail of the communication method between the user and the architect, means used for communication, and their emphasis when they design a customized detached residence for the elderly.

The result of the interview revealed the following: the elderly prefer design method, but selected Selection method for menu and option considering their economic and timely aspect. Also, in the process of communication, they had tendency to make a spatial description in based on their experience when they visibly confirm a space, and had low understanding of sketch, 3D rendering image and blueprints.

As for the architects, they assume that the selection for menu and option would be much more convenient for both the user and themselves, and that design method comparatively requires more time and economic resources. They stated however, that through design method they would be able to reflect the characteristics of the users more than any other methods, and that the end-result would be closer to what we would call 'customized'. In cases when the user lacks in architectural knowledge, the communication between both parties are more opt to suffer difficulties, which would result in unclear delivery of the requirements of the users to the architect and to dissatisfaction on the end-result.

Furthermore, it is difficult for an architect to understand the user's demands when smooth communication fails. Therefore, architects usually explain the project with their portfolios, and depend on their intuitions to understand the characteristics and requirements of their users.

In conclusion, we have induced the following during the process of our interview: the communication method for customized detached residence for the elderlies is to allow indirect experience of space-composition of the residence via video or scaled-down models, by combining design method, selection for menu and option. Also, grasping the characteristics of the user should be supported by a more quantitative frame or a program, instead of current practice of relying on the architects intuitions.
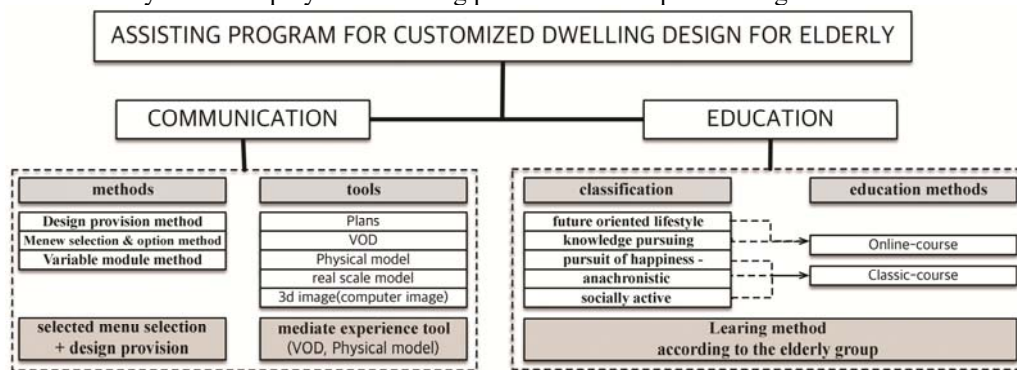
CONCLUSIONS

This study aims to develop an assistance program for the design of the customized residential for the elderly, which is based on the rapid growth of the elderly, and the increasing needs for better residential environment aroused by economic development and growth in income level.

This study found that the elderly require special methods of communication and education in comparison to other demographic groups. Also, according to the survey and interviews with the elderly and the architects, the more trouble with the communication between the two parties, the lesser the user satisfaction turned out to be. This results from the lack of architectural knowledge of the users, and of the efficient means of communication.

This study was conducted through the literature review, user survey, and interviews. Then, the elderly were classified into 5 groups in accordance to their physical, psychological, and social characteristics, and the educational models corresponding to each group were illustrated. Also, the communication method and tool for residential design for the elderly were selected. Therefore, the assistance program for designing customized housing for the elderly would employ the following procedure & components<figure 2>.
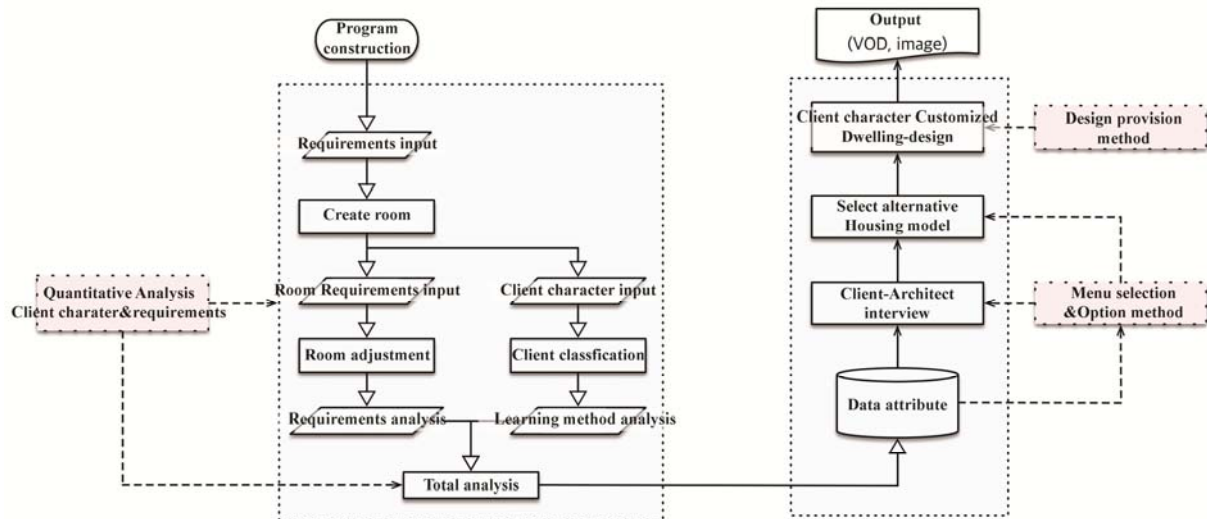

Figure 2. Construction of assisting program for customized housing design for the elderly

Lastly, the following conclusion can be drawn out to develop an assistance program for the customized housing design for the elderly.

1) Communication method is to be formed by the combination of design method and selection method for menu and option. First, the user should be able to choose the designed residential space via selection for menu and option, and it should be provided after re-design by the architect.

2) Communication tool is to maximize the utilization of the VOD in order to provide indirect experience of the residential space. It has been shown that elderlies are incapable of sufficiently recognizing and understanding a space with mere 2D images. Therefore, use of VOD is necessary to ensure that they have a rich understanding of the space via indirect experience; using physical model alongside with the VOD would make the whole process even more efficient.

3) In composing a learning method for the elderly, it is vital that we have understanding of individual characteristics of the elderlies, and select the corresponding learning method. Therefore, this study classified the elder people into 5 groups, and assigned them with online-course/classic-course.

4) Lastly, for a customized residence design for the elderly, it is imperative that the user's needs be reflected in the project by quantifying their requirements. Therefore, a program that is able to grasp one's characteristics in statistical, psychological aspect should be used, and user's requirements are to be able to be chosen or composed by the program as well.

The following <figure. 3> shows the overall results of the above, which configures the assisting program as the flow chart..

Figure 2. Assisting program flow chart for customized housing design for the elderly

It is expected that such a research process would be able to support a smooth communication between the users and the architect in development of the customized housing for the elderly. Also, the user satisfaction of the residential space would be improved drastically if the user themselves acquire a certain degree of architectural knowledge and actively engage in the designing process.

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TEACHER EDUCATION IN CHINA: TRAINING TEACHERS FOR THE 21ST CENTURY

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Abstract: The study explored the extent to which 21st first century skills are integrated in the Chinese teacher education programme. This qualitative study was done at a comprehensive normal university in China. Participants were the pre-service teachers and professors from the teacher education programme. Results show that some 21st century skills are fully integrated while other skills are partially integrated. It was also established that there are challenges to the integration of 21st century skills. The study recommends the extension of the practicum period and the abandonment of the old lecture method in favor of new collaborative, team centered methods.

Key words: *Teacher education, intercultural skills, practicum*

INTRODUCTION

Teachers are considered to be the back bone of any education system and to a large extent they determine the quality of an education system. In some parts of developing countries a teacher could be the only education resource available for the learner. It is also an established fact that many countries globally face the problem of shortage of teachers to meet the requirements of their education systems (Santina, 2014). Due to such shortages, many countries emphasize on expanding teacher education to increase output without much consideration about the necessary critical skills required for these teachers to be effective in the 21st century. The 21st century has brought its own changes and challenges which demand that teachers be properly prepared, trained and equipped with the right skills which will help them to deal with such challenges in their profession. The effect of globalization and other pressures and challenges such as the rapid technological advancements, changing patterns of work, explosion in information access and use have brought in certain demands on education (Stewart, 2014) such that the inculcation of 21st century skills has become a necessity. In this 21st century, the emphasis on massive training of teachers without integrating the much required skills would therefore mean wastage of resources. Nonetheless, it appears that these skills are not adequately integrated in the teacher programmes. This is evidenced by the 2009 conference titled '21st Century Leading and Learning' held in USA where leaders among other things saw a mismatch between teacher preparation programs and the changing learning environment (http://21stcenturylearning). The leaders expressed a need for 21st century students to not only be prepared for the technology of the changing world, but to still acquire other skills needed in the workforce, such as problem solving and leadership skills. Therefore for students to be well equipped with the necessary skills, they are supposed to be taught by teachers who have good command of those skills and are able to impart the skills to the students.

21ST CENTURY SKILLS

Barnett Bery, founder and CEO of Center for Teaching Quality, defines 21st century learning as learning that enables students to master content while producing, synthesizing and evaluating information from a wide variety of subjects and sources with an understanding of and respect for diverse culture (How do you define 21st century learning, 2010). Powerful learning of this nature requires well prepared teachers who draw on advances in cognitive sciences and are strategically organized with respect to 21st century skills (How do you define 21st century learning, 2010). The term 21st century skills is generally used to refer to certain core competencies such as collaboration, digital literacy, critical thinking and problem solving that schools need to teach to help students thrive in today's world (Pacific Policy Research Center, 2010; Saavedra & Opfer 2012). For this purpose Fidel and Trilling (as cited in Romero, Usart and Ott 2015) defines 21st century skills as the new set of skills required to succeed in learning, working and living.

According to the Partnership for 21st century skills (2010), the 21st century curriculum should cover four broad areas, namely; 1. Life and career skills such as flexibility and adaptability, self initiative and self direction, time management and goals, independence, team work, intercultural skills, and leadership skills. 2. Learning and innovative skills such as; creativity, critical thinking, innovative thinking, problem solving, communication and collaboration. 3. Integration of global awareness, financial, economic, business and entrepreneurial literacy, and civic, health and environmental literacy within the academic content of core subjects. 4. Information and media technology skills with a focus on accessing information efficiently and effectively, evaluating it critically and competently, and using the information accessed accurately and creatively to solve problems. The above skills are also highlighted by different writers who put them into four groups which generally address similar issues (Binkley, Erstad, Herman, Raizen, Ripley, Miller-Ricci & Rumble 2011; Saavedra & Opfer 2012; Pacific Policy Research Center, 2010; Kay & Greenhill, 2010) Most of these issues focus on complex thinking, learning and communication skills and all are more demanding to teach and learn than memorization and other types of rote skills (Saavedra & Opfer, 2012).

21ST CENTURY SKILLS AND LEARNING IN CHINA

With the largest population in the world, one could also argue that China has the largest education system in the world which entails that it trains the largest number of teachers to take up teaching positions in schools. It is estimated that in 2007 China had a total of approximately 11 million teachers for its education system (Song, 2007). It is also recognized that education is the driving force behind economic growth of any country (Yizengaw, 2008). Therefore Song argues that the sustainability of the rapid economic growth that China is experiencing could be highly dependent on how well its vast teacher education positions itself in relation to equipping its teachers with the much needed skills for the 21st century.

As Zhou and Zhu (2007) note, although very high numbers of teachers in China have attained required educational level, some of them still lack certain critical skills including those required for the 21st century. Zhou and Zhu (2007) further state that as many as 554,100 school teachers have not yet reached the required educational attainment in China. Zhou argues that for rural schools there remain a serious shortage of qualified teachers, and most of the in-service teachers urgently need on-site school-based continuing training to get professionally ready for curriculum changes. Young, Grant, Mounbriand and Terriault (2001) contend that teachers in China need to be experts in one or more specific subjects so that they can effectively handle the challenges of a growing diverse population of students with a variety of multicultural, multi-linguistic and multi-ability needs.

Young, et al, (2001) emphasize on the importance of balance between what is required of teachers and what is offered to them by way of equipping them with the necessary knowledge and skills. This has significant impact on the quality of their teaching and their capacity to implement effective literacy instruction. The belief is that pre-service teacher-education programs play a significant role in the preparation of highly qualified teaching work force which is necessary to support the development of a complex 21st century society. However Guo, (as cited in Song, 2008) notes that graduates from teacher training programs feel fairly competent at teaching for tests while they face increasing challenges from ever-faster changes that are taking place both inside and outside the classroom.

On a more similar note, Song (2008) argues that students at elementary and secondary schools are very different from those of a couple of decades ago. Unlike their parents, today's students at elementary and secondary schools are much more influenced by the external factors, whether positive or negative. These influences to a large extent are characterized by the increasing interconnectedness due to the popularization of information technology. Changes are also reflected in the improved educational technology available at Chinese schools. Due to rapid development of information technology, more and more elementary and secondary schools in China are equipped with advanced educational technology, including computers and internet services. Student accessibility to technology requires that teachers too are not left behind; they must be competent in using these technological tools. This calls for proper skills for teachers to align with the demand and tenets of the 21st century learner.

With rapid developments in science and technology, the nature of occupations in the world of work is under frequent change as well (Song 2008; Adeosun 2008). As a result, Li and Chen, (as cited in Song, 2008) note that employers in China are adjusting their hiring criteria; instead of hiring people merely with a firm mastery of knowledge accumulated from the textbooks, employers nowadays are looking for potential employees full of creativity and originality, that is, with skills of creative thinking, problem solving, and decision making. In line

with this, Chen (cited in Song, 2008) argues that it is also regarded essential that today's students be internationally prepared with international knowledge, strong training in languages, and deeper cultural understanding. Among many others, lack of international education constitutes one of the greatest challenges faced by schools in China (Chen, as cited in Song, 2008). To this end, countries should direct their attention to developing the 21st century skills and competencies for all students. The goal of education should no longer be to simply provide basic literacy skills (Stewart 2014). However, the starting point should be the skills that the teachers acquire in their training programmes. The aim of this paper therefore is to explore the extent to which Chinese teacher training programmes integrate the 21st century skills. It further looks at the challenges facing the integration of the 21st century skills in the Chinese teacher education as well as the opportunities that exist for the integration of these skills.

METHODOLOGY

The study used the case study design under the qualitative approach. According to Karamustafaoglu, (2009) a qualitative approach allows the researcher to deeply understand the phenomenon under study. Convenience sampling technique was used to select participants from the population. Respondents however, were chosen on the basis of the program; in this case teacher education programme. Face to face interviews were used to solicit data from pre-service teacher trainees and the staff members from the institute of teacher education at a university in Beijing. Interviews are considered to be one of the most powerful ways of collecting data. This is mainly because they give respondents an opportunity to talk about an issue from their own perspective and they also help the researcher to seek clarification on issues which seem unclear in the course of the interview. Interviews also allow the researcher to have a deeper understanding of the phenomenon under investigation through probing. Two sets of interview guides were developed; one for the teacher trainers and the other one for the teacher trainees. The guides had both open ended and closed ended questions.

In any teaching and learning process, students are an important component and no education system can exist without students. Elassy (2013) emphasizes the importance of students in an education system by arguing that they are both the input and output of the teaching and learning process. Therefore it was decided that teacher trainees be part of this study because they are the ones at the heart of the teaching and learning process and therefore were considered to be well positioned to provide in-depth information about their experiences in relation to the 21st century skills in their training programme. On the other hand, teachers have the responsibility to decide which type of knowledge and skills to impart on the students. This is based on the usefulness of the different types of knowledge and skills to the teacher trainees as future teachers. Therefore it was decided that members of staff be interviewed to understand the views of the faculty in relation to 21st century learning and the role they play as educators in teaching the skills. In total, 17 interviews were conducted (five members of staff and twelve students). Interviews with the student teachers were conducted in venues of their choice away from any form of distraction and for the purposes of confidentiality, the researchers anonymised the student teachers. The members of staff were interviewed in their offices for reasons of privacy. Of the total respondents that were interviewed 11 were female and 6 were males. Each interview lasted for not more than one hour. With permission from the research participants, all the interviews were audio recorded so that the researchers could listen to them carefully for more insights.

The researchers also accessed and reviewed some official documents such as curriculum for the teacher training programme. According to Creswell (2003) document review has advantages over other data collection methods mainly because the researcher can access the documents at his or her convenient time. Additionally, the information in the documents is considered dependable and credible because such documents are compiled with great care and accuracy. On the other hand document review can be frustrating in cases where the institutions are not willing to release certain documents because of the nature of information they contain or for other reasons. However, in the case of the present study, the necessary documents were accessed without any problem. Document review was used to further investigate the skills that are required and advanced in the 21st century China. The researchers reviewed the curriculum documents together, made notes on them and discussed some issues to come up with a general understanding of the documents in relation to the 21st century skills. The collection of data from different sources and using different methods was considered necessary for purposes of triangulation which helps to enhance the credibility of a study.

The researchers listened to the interview recordings several times to have a clear understanding of the information after which data analysis started with the verbatim transcription of the interviews. Notes from the document analysis were also organized and transcripts were produced from them. The researchers then read through all the transcripts and made notes on them. These notes were compared to make sure that there was a uniform understanding of the data by the researchers. Based on the main research question, main themes were extracted from the transcripts. Further scrutiny of the transcripts helped to identify other useful information

under the different themes. Results were discussed in reference to previous literatures in order to establish consistencies and inconsistencies with previous studies.

FINDINGS AND DISCUSSIONS

The study found that the Chinese pre-service teacher training programme at the study university has managed to fully integrate some of the 21st century skills into the programme. However there are some skills which the student respondents felt that they have not been fully integrated. This section discusses the skills that have been fully and partially integrated, challenges that are faced in integrating some skills and opportunities that could be used to help in the integration of those skills which have not been fully integrated into the teacher training programme.

INTEGRATED SKILLS

The researchers explained the 21st century skills to the research participants for them to have a clear understanding of the skills. The skills included critical thinking, problem solving, knowledge application, creativity, flexibility, communication, interpersonal, collaboration, leadership and, global and cross cultural awareness. After explanation, participants were asked whether they learn these skills. Where possible, participants were asked to provide examples of how they learn those particular skills. The majority of the participants indicated that most of the skills outlined above have been integrated into the programme in one way or the other. It was found that some of the skills are acquired through class activities such as group work which involves collaboration among the learners. For example the participants noted that at times they could be given a group or individual task which could involve critical thinking. The way teacher trainers teach teacher trainees has a very profound effect on what type of teachers the trainees would become. That is why Darling-Hammond (2006) proposes the type of teaching that will make the teacher trainee to be adaptive to different situations. This adaptation could only be possible if the trainees develop different skills. The teacher trainees also indicated that they learn and develop other skills as they participate in the learning activities. These skills include evaluation skills and vocational management skills. The acquisition of such skills would enable the teacher trainees to be able to deal with the ever changing terrain of the contemporary teaching profession (Msiska & Salik, 2016).

PARTIALLY INTEGRATED SKILLS

While it was found that some 21st century skills were fully integrated, participants noted that some skills such as computer skills were not fully integrated. They were however quick to note that computer skills are very important in today's world and especially that China is rapidly advancing technologically. One respondent argued, "…..Yes, I think computer skills especially how to use internet is very important in the 21st century China, so we can make full use of the abundant information and resources on the internet to improve our teaching". The respondents felt that learning how to use internet is very important in the 21st century China where information explosion is very high. Using the right information is what matters. However it was noted that internet and related information technology is not adequately taught. This seems to contradict the Chinese government argument that it is committed to integrating information technology in the curriculum. In 2000 for example, the Ministry of Education (2000) issued a policy document for information technology curriculum guide in primary and secondary schools. The policy stipulates that primary and secondary schools should offer information technology courses to students. One would think that by integrating technology in primary and secondary schools, pre-service teachers would be adequately prepared in ICT skills for the challenges lying ahead.

Participants also noted that skills such as global and cross cultural awareness and interpersonal skills are not effectively learnt. It was particularly emphasized that interpersonal skills are very important in the Chinese societies because of one child policy. Participants seemed to suggest that as prospective teachers, they need to learn how to relate with others because they are brought in an environment of seclusion where mother and father are the only people they look up to. One of the participants seemed to ask, "…if we are in the field how are we going to relate with other teachers as well as students?" For this reason, participants seemed to suggest that interpersonal skills should be emphasized in the curriculum. In their perspective however, in China some 21st century skills have not reached the importance they command in the world. For example, according to some participants, skills like global and cross cultural awareness are not really necessary for teachers who teach in rural areas where the population is not quite open to the outside world.

The views of the professors on global and cross cultural awareness seemed to contradict that of students. According to them, these are important skills that teachers in the modern China should possess. It was argued

that China is becoming open to the outside world more than ever before. This means that people from the outside world are coming to China, making China and its classes more diverse. Therefore, the staff members believe that it is very important for teachers to be culturally and globally aware. This is in support of Young, Grant, Mounbriand and Terriault (2001) who argued that intercultural skills are very important in today's world. Apart from this, the staff members believe that they are training students who not all of them will spend their life in China or only work with their Chinese counterparts. This means that at one point in time they will face the reality of the world by interacting and working with people from different backgrounds which will require someone to be culturally and globally aware. Additionally, writing about pedagogical courses in teacher training programmes, Haciomeroglu, (2013) argues that such courses are important in equipping students with cultural knowledge which could be linked to the skill of cross cultural awareness in the list of 21st century skills. It is thus important that global and cross cultural skills are adequately integrated in the programme.

More similar to the above is the idea of effective communication which encompasses reading, writing, speaking and listening as to be essential to pre-service teachers. The participants argued that teachers need to know other languages such as English. It was observed that teachers need to know how to communicate and thus interact with a variety of students and this is only possible when global languages such as English are learnt. Knowledge of such languages would spark competency in other skills such as intercultural skills and global awareness as this would be a medium of communication with diverse students and people. This validates the argument made by Chen, (as cited in song 2008) who argued that students have to be internationally prepared with international knowledge, strong training in languages, and deeper cultural understanding.

CHALLENGES TO INTEGRATION OF 21ST CENTURY SKILLS

Even though the 21st first century skills are critical, the Chinese educational curriculum seems to not successfully match with the 21st century skills requirements. It was observed that teacher trainees cover too many courses per semester. As such they spend most of the time memorizing the subject matter so that they pass the exams rather than internalize the skills. The respondents stated such skills as critical thinking and knowledge application skills as difficult to develop since they rush through and memorize content in order to pass the examination. However, one would think that because they cover many subjects per semester, one could become a more critical thinker, more creative and more imaginative since he/she has to think, study and work hard in order to make sense and successfully navigate through the courses.

Another challenge is that Chinese teacher education focuses more on theory and less on practice (Lu 2013). Moreover, the time for practice is not sufficient to prepare the teachers for working in the field (Zhou & Zhu, 2007). In a study about teacher education in China, Msiska and Salik (2016) found that the duration of the practicum is only 10 weeks. On the other hand, Darling-Hammond (2006) observes that strong teacher training programmes among other things are those that have an extended period of internship. This therefore means that teacher education programmes in China are not aligned with teaching practice (Zhu and Han 2006) and thus do not appeal to the 21st century learning. All these hamper the development and transmission of 21st century skills.

Similarly, it was noted that the Chinese way of teaching is a challenge to successfully integrate 21s century skills in the teaching and learning. It was noted that most teachers use same old lecture methods that do not make students get involved. This deprives teachers a chance to teach students some skills compared to when other teaching methods are used such as group discussions. Making students involved in the learning process would allow them to learn intercultural skills, communication skills, team work, critical thinking, imagination and leadership skills which are necessary for the 21st century China. Loughran, Korthagen and Russel, (2015) also allude to the fact that teacher education programmes are being accused of misalignment between teacher training and reality in schools where they note that there is too much reliance on lectures during theory work. In-service training for instructors was suggested so that they learn how to use modern teaching methods and thus adapt to the needs of the 21st century learner. Even though document analysis shows that university training modules for teacher education show a clear commitment to increasing opportunities for language teachers to develop the requisite linguistic and intercultural competencies (Gu, 2006), this seems to only appear on paper.

OPPORTUNITIES

Even though, there are some challenges for integrating 21st century skills in the teacher education programmes, there are opportunities to be exploited. It is asserted that the rapid development of information technology in china has made more schools to be equipped with advanced educational technology, including computers and internet services. This provides an opportunity for educators to integrate these technological facilities in the

teacher education programs. It should be noted that 21st century learning requires someone to be computer literate and at least have information, media and technical skills so that he/she should be able to access, understand, and analyze media and media messages (Pacific Policy Research Center, 2010) and this forms the basis of lifelong learning. One would point out that technological facilities should not only be accessible or taught to students in the programs related to ICT. All students regardless of the program should have access to these facilities so that they can master some of these skills for day today survival and the rapid advancement in technology in China presents a greater opportunity.

It would also be argued that an opportunity exists for Chinese pre-service teachers to learn global and cross cultural awareness and interpersonal skills. It is asserted that of all international students in the world, China hosts a little less than 10% (Onsman, as cited in Kayange & Msiska, 2016). This actually shows that higher learning institutions have a diversity of students who if educators use effectively can ensure that pre-service teachers learn interpersonal and global skills. Educators might offer programs for both local and international students in English which is one of the core subjects for a student to master in the 21st century learning (Kay & Greenhill, 2010). The interactions that would take place in those classes would facilitate the development of social, cross cultural and global skills.

CONCLUSION

21st century skills are very important and China does not want to be left behind in as far as teacher preparation is concerned. Even though China has not fully reached the satisfactory level of the 21st century skills, most of the skills that are required for the 21st century are taught. Chinese teacher preparation programme is therefore on track towards achieving what has to be learnt in the 21st century and it does so through some class activities and examinations that requires critical thinking and other high order skills. There are however several areas where the Chinese teacher education programmes need to improve. Such areas include technological literacy as well as cross cultural and global awareness skills. As noted through literature analysis, teaching practicum period is not enough to adequately prepare teachers for the 21st century learning. There is therefore need to extend the teaching practicum. There is also need to strengthen cross cultural awareness, interpersonal and other skills that have not yet been fully integrated into the Chinese teacher training programmes so that the teachers are fully equipped for the 21st century demands. This could be enhanced by integrating international students and local students in the same classrooms especially those taught in English. The Chinese teachers teaching methodologies also need to change. They need to dessert the individualistic teacher-centric traditional methods which Lemley and Schumacher (2014) note that are fast becoming irrelevant. They should however adapt to new collaborative, team-centered methods that appeal to the 21st century learning environment.

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TEACHERS EFFICIENCY IN USING MATERIALS IN ENGLISH CLASSROOMS: CASES FROM ELEMENTARY GRADES OF BANGLADESH

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Abstract: Teachers, educators and researchers have been trying to find out some innovative tactics to implement Communicative Language Teaching (CLT) successfully in Bangladeshi context. In this regard, using supplementary teaching materials with English lessons in classroom came to light. This study investigates the supplementary materials used by the English teachers in primary classrooms and explores English teachers' efficiencies in using these materials. The data were collected, using interview schedules for teacher and head teachers and classroom observation schedule, from schools in Kapasia upazila and Paba upazila of Bangladesh where teachers were provided with materials and Teachers' Guides (TG) from a programme named English in Action. Findings of the study reveal that the teachers have been using a number of innovative technology based materials in the rural classrooms of Bangladesh. Furthermore, teachers conduct several interactive activities accompanied by teaching materials according to the activity guidelines written in the teachers' guides. On the contrary, sometimes teachers fail to get the activities done by students for different reasons. Teachers' psychological anxiety related to using technology in classrooms and loads of work at schools are major barriers in reveling efficiency in using materials in classrooms. In addition to that, students' level of understanding and unfamiliarity of technological materials make it difficult for teachers to implement innovative materials successfully in English classrooms.

Key words: Language Teaching, Innovative Materials, Teachers' Efficiencies, Teachers' Guides, Primary Education

1. Introduction

Now-a-days English, one of the UN languages, is the most powerful language in the world. It is used as an international link language and its role is solely functional in Bangladesh. English is not a *lingua franca* in Bangladesh. But because of its gradual dominance over the years it has taken a part in our socio-cultural system. English was introduced as a compulsory subject from grade I to grade XII on 19 January, 1989 (Rahman, 2005). Again, English is taught in our country as a foreign language (Begum, Rashid & Banu, 2005; Banu, 2002; Ahmed, 2007). In 1995 Communicative Language Teaching (CLT) was prescribed by National Curriculum and textbook Board (NCTB) as the method of teaching and learning English in classrooms (Roshid, 2008-2009, p. 178). Since then teachers, educators and researchers have been trying to find out some innovative tactics to implement CLT successfully in Bangladeshi context. Consequently, using supplementary teaching materials with English lessons in classroom came to light. Even this practice became crucial for young learners as elementary level serves basic education to all. One of the largest primary education sectors in the world is held by Bangladesh with an estimated 19.55 million students (BANBEIS, 2014). This country has made significant improvement towards reaching universal primary education (UNICEF, 2009). Accordingly, it took various initiatives, like providing training for primary teachers to ensure quality education. "Yet teachers are not attaining the desired proficiency and most of them are incompetent for dealing with a communicative classroom" (Harun & Al-Amin, 2013). Other problems that affect the quality primary education include traditional teaching methods, lack of teaching aids and materials, shortage of skilled teachers, fear and poor community involvement (Yasmin, 2009; Rahman, Begum & Zinnah, 2009). This situation suggests that ensuring a high quality of primary education is still a big challenge. Government of Bangladesh and various organizations are empowering English teachers through in-service and pre-service training which started to focus on using authentic materials in classroom with lessons to some extent. This study explores primary English teachers' efficiency in using teaching materials in English classrooms.

2. Statement of the Problem

Monzoor and Kabir (2008) argue, "Primary education is the foundation on which the nation's edifice of education has to be built in and the ground laid for the individual's pursuit of further learning and fulfillment of life's potentials".In Bangladesh, article 17 of the constitution specifies that primary education will be the obligation of the state. At primary level there is a competency based curriculum. Though the status of English is a foreign language in Bangladesh, curriculum defines it as a compulsory subject at this level. The required qualification for primary teachers is Higher Secondary School Certificate (HSC) (National Education Policy, 2010). So, teachers' quality, their education and training is fundamental for quality education (Ehsan, Biswas & Ashrafuzzaman, 2012; Hargreaves and Fullan 1992). In general, most of the teachers do not facilitate the practice of four language skills in classroom according to the curriculum. In English classrooms, majority of the teachers use traditional lecturing methods and techniques. There is hardly any student activity, although the new textbooks provide scopes for group and pair works (Yasmin, 2009).

There are different programmes and projects to improve teachers' knowledge, understanding and skills throughout the world. If teacher education is confined with educational theory only, the quality of education cannot be ensured. Like other countries, Bangladesh also has taken measures to improve the condition of primary education. Training in English for primary teachers is one of the concerns. Since English teachers get training about implementation of CLT, they learn techniques about using materials in English classroom. However, conducting classes according to lessons learnt from a training session in classrooms is another vital challenge for teachers. Ainy (2001) argues, "The ones who have received training also face transfer problem". Reminding the fact this study aims to look closely English teachers' efficiency in classrooms regarding material use with the lessons.

3. Importance and Rationale of the Study

Bangladesh signed the World Declaration on Education for All (EFA) in Thailand back in 1990.Afterward, in 2000, it also took part in the World Education Forum held in Dakar, Senegal. The goal-6 of Dakar Framework quests improving every aspects of quality of education (World Education Forum, 2000).Though the number of population who got primary education has been increased, "progress in the quality of primary education in Bangladesh has been far from impressive" (Islam, 2010). It is high time we thought about improving the quality of primary education. Moreover, various studies prove quality of primary education poor (Khan, 2005; Ahmed, 2005; Alam & Jahan, 2007; Mullick & Sheesh, 2008; Islam, 2010). Global Competitiveness Report (2009-10) studies on 133 countries in the world. It reveals that out of 133 countries, in case of enrolment in primary education Bangladesh ranks 103, 122 regarding expenditure on primary education and 128 about the quality of primary education. Nonetheless, school culture, curriculum, teaching-learning methods, assessment procedures, teaching materials, students' socio-economic background etc. play major roles in improving the teaching-learning process (Alam & Jahan, 2007). However, teachers facilitate students' learning using various methods and techniques. Sometimes they have to use different types of supplementary teaching materials with the lessons to assist students' learning. This study justifies English teachers' attempts in classroom regarding additional materials use. The findings of the study will help the educators, administrators and trainers to revise their training programme focusing teachers' needs, prior experiences and capabilities. The material developers and providers will also be knowledgeable to prepare their materials with keeping the issues of teachers' efficiency and cultural conflicts in mind. Furthermore, for the ELT researchers, this study could be considered as a platform for thinking about the researches on gap between teacher training and teachers' classroom performances.

4. Objectives of the Study

The objectives of the study are to-
a. investigate the supplementary materials used by the English teachers in the classroom;
b. explore English teachers' efficiencies in using materials in the classroom.

5. Review of Literature

While English is studied in Bangladesh in a full swing from primary to tertiary level, its output is very poor (Haque, 2014). Harun and Al- Amin (2013) argue that "in Bangladesh English language teaching practice has got momentum over the years". Unfortunately teachers use traditional methods and they do not use any supplementary teaching aids in the classroom. But many studies reveal that students like interactive activities in classes with teaching materials (Sadek, Ahmed, & Begum, 2006; Yasmin, 2007; Yasmin, 2009; Ashrafuzzaman, Babu & Begum, 2010). As many rural schools don't get sufficient and effective learning materials, these can be produced from local materials (Islam, 2010). Using authentic materials into the classroom adds a real-life component to the student's learning experience and can be stimulating and motivating for the students. Authentic

materials bear a more creative approach to teaching. The same material can be used under various contexts if the task is different (Tamo, 2009).

Communicative Language Teaching (CLT) has been used for teaching English in Bangladesh since 90s.Ansarey (2012) explores the definition, principles and brief history of CLT. She studies on English language teaching in Bangladesh. Thirty English teachers from primary and secondary levels were informally interviewed about the various issues related to CLT and the use of CLT in Bangladesh. They also were given a questionnaire on challenges and difficulties in implementing CLT. One of the key findings is that formulating communicative teaching materials and activities is difficult for teachers due to heavy workload. Apart from that, shortage of training in CLT is another challenge for teachers.

The worldwide need has created an enormous requirement for quality language teaching and teaching materials and resources (Ansarey, 2012). However, School resources and effectiveness of teachers affect students' performances. But the growth of school enrolment has headed to recruitment of teachers who have little training. Effectiveness of teachers successively, depends on teacher education and training (Islam, 2010). Accordingly, teachers' competencies in classroom management, their pedagogical skills and less significantly their technical skills of technological material-using influence their skills of using ICT based materials in classrooms. Using technology in an increasing manner brings out a new but complex challenge to the skills of teachers (Smeets, Mooij, Bamps, Bartolomé, Lowyck, Redmond & Steffens, 1999). In Bangladesh, there are deficiencies in primary teachers' training. Consequently, there is a little opportunity to increase teachers' skills in using technology based materials. However, there may be a reverse effect if they are imposed to use technological materials without training. Allan (2009) describes teachers' technological overload today and argues,

> *"This circumstance is exacerbated by the absence of a comprehensive training scheme, lack of practice time, and deficiencies in educational technology support, staffing and planning. Instructors are often left to their own devices, and are expected to identify technology skill deficiencies, as well as troubleshoot hardware and software problems."* (Allan, 2009, p. 26)

The Directorate of Primary Education in Bangladesh conducted Primary School Survey in 2007. The study provides information for various indicators which were divided into two groups, named Key Performance Indicators (KPIs) and Primary School Quality Levels (PSQLs). Four PSQL indicators were teaching aids, initial teacher training, in-service training of teachers and provided teacher guides, aids and equipment. Therefore, these are core factors for quality education. In this respect, this study will be an attempt to identify the aids teachers use in English classroom with the lessons and the alignment between their attempted activities and prescribed activities written in their guides got from their training programme. Darling-Hammond and Ball (1999) argue,

> *"Teacher expertise—what teachers know and can do—affects all the core tasks of teaching. What teachers understand about content and students, for example, shapes how judiciously they select from texts and other materials and how effectively they present material in class."* (Cited in Fullan, 2007)

6. Methodology

The mixed method interpretative study focuses on teachers' efficiency in using materials in English classrooms where both qualitative and quantitative approaches were employed to have a better understanding and triangulation of the generated data. Though it was a mixed study, the main effort was given to the qualitative part and quantitative part was used to support the qualitative findings.

6.1 Sample and Sampling Technique

The population of the study was all the primary schools of Kapasia upazila of Gazipur district and Paba upazila of Rajshahi district where English teachers of primary grades got training as well as were provided with Teachers' Guides (TGs) and technology based teaching materials from English in Action (EIA) programme. The schools were selected purposively because of the easy access to the schools (Creswell, 2008 & Gay, 1996). From those schools, six were taken as the desired sample size of the study. From each school, four English classes (class one and three) of two different English teachers were the data collecting sources for the researchers. The following Table-1 summarizes the number of the samples and sampling procedure.

Number of Schools	Number of Teachers	Number of Classroom Observation	Number of Head Teachers	Sampling Procedure
6	6x2= 12	12x2=24	6	Purposive

Table- 1: Sample and Sampling Technique

6.2 Source of Data and Methods of Data Collection

Data were collected using a classroom observation schedule, a semi structure interview schedule for teachers and a semi structure interview schedule for head teachers. The researchers observed the English classes with the permission of head teacher and those respective English teachers. During class observation narrative notes on class activities were taken by the researchers. Researchers also made notes on comparison between activities written in the TGs and the activities done by English teachers in classes. The tasks, which were almost similar to TG activities, were called 'Completed' and the tasks, which teachers tried to accomplish according to TG, were called 'Attempted' activities. For supplementing the narrative record digital video cameras were set in the back side of the classes where the researchers took their position. After the ending of classes some photographs were taken focusing the holistic picture of the classroom. The interviews with teachers were conducted after the finishing of classes. Finally, the interviews with head teachers were conducted. Audio recording devices were used for recording the voice of the interviewee. The following Table-2 summarizes the research tools, data collection source and total respondents.

Number of School	Research Tools	Data Collection Source/ Sample	Sampling Technique	Respondents	Total Number
6	Classroom Observation schedule	English Class	Purposive	12x2	24
	Semi-structured Interview schedule (1)	Teacher		12x1	12
	Semi-structured Interview schedule (2)	Head Teacher		6x1	6

Table-2 Research tools, data collection source and total respondents

7. Findings and Analysis

7.1 Materials used in classroom practices

In classrooms, teachers are using different audio and visual instructional materials, such as audio, textbook, poster, flashcard, figurine and real object, for making lesson more interesting.

About the use of materials a teacher said,

The most important thing about my classroom practice that my students learn English through audio, poster, flash card especially through the audio conversation. I think that audio lesson is the best material to teach and learn in my class. It also helps me to take the class in an interactive way (Teacher Interview, Kapasia Upazila).

According to another teacher,

I am using different audio and visual instructional materials like poster, flash card, audio, figure and textbook for making lesson more interesting. Audio helps students to listen and practice the correct pronunciation. Students can also identify an object easily by using poster and flashcard (Teacher Interview, Paba Upazila).

One Head teacher opined,

Teachers are using audio recordings along with textbooks (Head teacher interview, Paba Upazila).

In classroom observations, the materials found to be used in English language teaching are given below:

Figure-1 The materials used in classes

The use of materials especially audio, poster, flash card and real object in language teaching and learning has made the lesson more interactive, attractive and effective.

7.2 Availability of materials and their uses

There were some available materials those could be used in lessons according to the teacher's guide. But the teachers omitted use of all those materials. Examples (classroom observations in Paba Upazila)-

Available materials	Used materials
Good morning song	Good morning song
Hello song	Hello song
Posters	Poster
Real Object	Real object
Figurines	*Omitted*
Main audio materials	Main audio materials
Goodbye song	Good bye song
Flash card	*Omitted*

Table-3 Availability of materials and their uses

From the table-3 it is revealed that the available materials were good morning song, hello song, posters, flashcards, figurines, main audio materials and goodbye song. But the teachers omitted the use of Figurines and Flash Card.

7.3 Following Teachers' Guides (TG)

There were a number of interactive audio-visual materials which teachers used completely according to the provided teacher's guide. Again, they attempted using some materials according to the provided teacher's guide but could not fully succeed. Examples (Classroom Observations from Kapasia Upazila)-

Using supplementary Materials	Following Teacher's Guide
Completed	Good morning song
	Poster
	Main audio
	Good bye song
	Real Object
Attempted	Hello song
	Main audio
	Book
	Good bye song
	Flash card

Table-4 Following Teachers' Guides (TG)

From the above table-4 it is seen that good morning song, poster, main audio and good bye song and real object were used completely in classes. On the other hand, hello song, main audio, book and good bye song were attempted to be used with the lessons.

Extract: Completed
Teacher hung the poster in front of the class. Teacher pointed many things like father, mother, brother, sister, banana, apple, cat, flag, tree etc. from the poster and asked students to mention their name and at the same time teacher also asked about their color. Activity was done according to the activity guide.
Extract: Attempted
Teacher played the main audio (a rhyme "red red the rose is red....) and instructed the students to listen to the audio. But Teacher didn't follow the pause and play signal. Teacher didn't inspire the students to work with the audio.

7.4 Time of practices and use of materials

For Class One (An example from Kapasia Upazila)
Teacher continued the class for 24 minutes but the normal class time was thirty five minutes. From total 24 minutes teacher spent 21 minutes in practices which was 87.5% of total class time. Teacher spent total 12 minutes and 37 seconds in using resources which was 51.5% of total class time.
The following table represents the scenario.

Duration of the lesson	Time spent on practices	Time spent on resources
24 min	21 min (87.5%)	12 min 37 sec (51.5%)

Table 5: Total time spent on practices and resources for class one

For Class Three (An example from Paba Upazila)
Teacher continued the class for thirty three minutes. From total thirty three minutes teacher spent 30 minutes in practices which was 90.9% of total class time. Teacher spent total 6 minutes 31 seconds in using resources which was only 16.7% of total class time. The following table represents the scenario.

Duration of the lesson	Time spent on practices	Time spent on EIA resources
33 min	30 min (90.9%)	6 min 31 sec (16.7%)

Table 6: Total time spent on practices and resources for class three

7.5 Percentages of activities according to the guide

From classroom observations it was found that good morning song, poster, main audio and good bye song was the completed activities and hello song, main audio, book and good bye song were the attempted activities in those classes. The following table is an example from class one and three (integrated duration)-

Primary Activities	Following Activity Guide	Percentage of the use	Duration of the lessons
Completed	Good morning song	39 sec (.87%)	75min
	Poster	6min (8%)	
	Main audio	8min 33 sec (11.4%)	
	Good bye song	27sec (.6%)	
	Total= 20.87%		
Attempted	Hello song	34 sec (.75%)	75min
	Main audio	4min 33sec (6.06%)	
	Book	19 min 30sec (26%)	
	Good bye song	27sec (.6%)	
	Total= 33.41%		

Table-7 Percentages of activities according to the guide

There were some activities done in some lessons which were like the teacher's guide. These are called the completed tasks whereas some partially done activities are called attempted activities. According to the table-7, 20.87% time of the total class duration was spent on complete implementation of the activities suggested in activity Guide. This 20.87% includes Good morning song - 39 sec (.87%), Poster - 6min (8%), Main audio - 8min 33 sec (11.4%) and Good bye song - 27sec (.6%). It is seen from the data of attempted activities that Hello song - 34 sec (.75%), Main audio - 4min 33sec (6.06%), Book - 19 min 30sec (26%) and Good bye song - 27sec (.6%) were attempted for 33.41% of the total duration of the both lessons.

7.6 English teachers' efficiencies in using materials

Complete use of resources with activities according to Teachers' Guide-
The teacher played good morning song and the students sang and clapped their hands.

Activities	Resources	Narrative with examples
Warm up	Good morning song	Teacher played good morning song to warm up the students

Table-8 Complete use of resources according to Teachers' Guide (Example-1)

The teacher showed many pictures form the poster and materials from the class and talked about colour. The students were answering in chorus.

Activities	Resources	Narrative with examples
Eliciting	Poster	Teacher used poster to elicit about colors

Table-9 Complete use of resources according to Teachers' Guide (Example-2)

The students were listening to the audio. It was a song and they were singing and clapping their hand. During listening to the song, there were questions in the recording. Teacher was asking and the students were answering in chorus. The teacher was also asking questions about the leaf colour. The Students answered it.

Activities	Resources	Narrative with examples
Active listening	Main audio	Teacher used the main audio to practice active listening

Table-10 Complete use of resources according to Teachers' Guide (Example-3)

One teacher played good bye song and the students were standing and sang with 'bye sign' by hand.

Activities	Resources	Narrative with examples
Playing good bye song	Good bye song	Teacher used good bye song to finish the class

Table-11 Complete use of resources according to Teachers' Guide (Example-4)

7.7 Partial use of resources with activities according to Teachers' Guides-
Drawing Dictation: One teacher attempted 'Drawing dictation'. But she did it in another way. It was not totally like the activity guide.
Reading/Song: A teacher attempted to do the 'Reading/ Song' activity of the activity guide. But it was not fully like the guide. Students were not raising their hands. They sang with the audio song but it took time to find out the recording from the iPod.
Play and sing a song: A teacher played Hello song and a few students sang with the song.
Question-answering: A teacher asked questions to some specific students only who could answer spontaneously. She taught how to answer those questions. She taught the students what to say about this question and wrote it on the board. She asked students individually by calling to stand up and to say, where full stop is, where comma is etc. All students didn't participate as they didn't understand the instruction.
Use of textbook: A teacher told to open page no. 65 in the text book. She read from the textbook Activity A. She was explaining as well as questioning where to give full stop and where to give comma. Students were answering in chorus instead of answering individually.

Using Audio: A teacher told her students about audio recording before playing it. She gave some idea about the recording. She played the audio. Students were listening attentively. After listening to the audio, the teacher asked the students where capital letter was used in the audio. She asked questions from the audio. She herself answered those questions and some students repeated with her. She tried to play the audio again. But she faced a problem in finding out the recording she was searching for. She told to write Activity A1 in their exercise book and gave instructions of completing it. The teacher was walking and observing their writing. She was giving feedback and asking if she can help them. She said to make a pair, exchange and check their exercise book. After finishing lesson she played good bye song and attempted that students sing with the song.
Regarding the partial use of resources and activities, teachers gave explanations. Teacher and head teacher said that learners' level of understanding is not high enough to understand the instruction of activities in the classroom. Teachers try a lot but cannot be succeed in implementing tasks at classes because of learners' performances.

> *Learners come from poor and illiterate families. They do not understand the instruction. So, teachers fail to conduct tasks sometimes (Head teacher interview, Kapasia Upazila).*
> *All of them do not understand the recordings. So they remain silent in classes and do not participate (Teacher Interview, Paba Upazila).*
> *The major problem is that the students do not know English. They come from illiterate and poor families. So there is no environment to practice English at home. When I try to make them understood the lesson in the classroom, I cannot improve their English in a large scale. The weak students remain silent in the groups. Again, I do not get enough time to conduct group work or pair work. Sometimes, I try to involve good students but there is not enough time. I do not get enough time because the lesson must be completed in time which is fixed by Upazila Education Officer (Teaher Interiew, Kapasia Upazila).*

7.8 Omission of resources with activities according to Teachers' Guides-
Students did not raise their hands with teacher's utterance of color. She did not say anything about the work "For tomorrow" as written in the activity guide.

> *Tasks for Tomorrow:*
> *Teacher omitted to assign task for next day to the students. Didn't instruct students to collect any materials of the respective color.*

After finishing the class one teacher said that she couldn't prepare for the class. As a result she couldn't follow the activity guide successfully. Two of them said,

> *I was not well prepared for the class (Teacher interview, Kapasia Upazila).*
> *I do not get enough time for preparing activities. So I escape some stages (Teacher interview, Pabaupazila).*

Other two teachers' opinions are following-

> *I can't use iPod properly.......... (Teacher interview, Paba Upazila).*
> *I have to say one thing again and again and the students cannot understand my speech and they start to make a noise in the classroom (Teacher interview, Kapasia Upazila).*

8.   Discussion

8.1 Innovative materials focusing four skills used by teachers

There were some innovative secondary teaching materials in the observed classes. They are Good morning song, Hello song, Poster, Main audio and Good bye song. This finding is similar with the findings from studies done by Ashrafuzzaman (2014), Sultana and Rahman (2014), Siddique and Rahman (2014), Hena and Uddin (2014), Babu, Ashrafuzzaman and Khanum (2013), Ehsan, Ashrafuzzaman and Das (2012), Rahman, Babu and Shahrear (2012), Rahman, Babu and Ashrafuzzaman (2011) and Ashrafuzzaman, Babu and Begum (2010).These audio and visual materials focus on four skills of language. In Bangladesh, though the curriculum and the English textbooks are intended to enrich students' four skills of language, the traditional classroom practices highlight mostly on reading and writing skills (Kabir, 2014). From this perspective, the audio and visual materials used by the teachers in the English classrooms helped in developing listening and speaking skills of students as well. Similarly, Sultana & Rahman (2014) state that all these materials and activities develop the four skills (listening, speaking, reading and writing) of English Language. It is a radical change in the classroom practices in Bangladesh.

8.2 Innovative activities conducted by English teachers

In traditional English classes, teachers just convey lectures in the classes and students are merely silent listeners (Sinha & Idris, 2013). But in observed classes there were some innovative interactive activities like, warming up students, playing songs etc. Likewise, Ashrafuzzaman (2014) and Rahman and Rahman (2012) find that after getting training from the EIA, the classroom practices of most teachers changed. Now they apply many useful and participatory techniques and methods to make the students learn better. Students and teachers sang together at the beginning and ending of classes. It is very inspiring and joyful for students to pay attention in the classroom and receive teachers' notes carefully. The teachers used materials to elicit students' thinking about lessons. This technique develops learners' analytical thinking ability and equips them to speak and motivate them to be active in the classroom. The most significant activity of the class was active listening. The teachers played audios of English lessons to increase students' listening skill. They asked question to check students' comprehension. All these activities are interactive and very stimulating for the primary level students in Bangladesh. It can also be said that learning English is a matter of pleasure to them now. Ashrafuzzaman, Babu and Begum report as well that teachers and students are using more English and their shyness is removed.

8.3 Time spent on interactive materials

It was seen from the observed classes that most of the class time was used for classroom activities and materials were applied for almost half of the total class time. It is a notable a time teachers used innovative supplementary materials in the English class. It is a wide change which makes transformation in the traditional classes.

8.4 A great emphasis on motivating students

Since primary students enjoy lots of fun in English classes with having rhymes and songs (York, 2011), there were some songs for starting and ending of English classes. These songs like, hello song, Good bye song etc. are fascinating for holding primary students' motivation in the English classrooms. Both teachers and students are now more confident and motivated in using English as a medium of classroom language (Ehsan, Ashrafuzzaman & Das, 2012).

8.5 Teachers' efficiency

The interactive supplementary materials are being used in the rural schools of Bangladesh. The teachers are getting training to implement those materials. But rural teachers' workload in Bangladesh is a common challenge. They are burdened with teaching-learning activities, administrative activities, co-curricular activities etc. (Ashrafuzzaman, 2014). So, it is very difficult for the rural primary teachers to be prepared for the classes with technology based tools. From the observed classes, it is very clear that teachers completed some tasks according to the teachers' guides and most of the time they attempted to complete the tasks according to the guides. It indicates that it can be expected from teachers that if proper time and support is given to teachers, they can use ICT based materials in the English classroom fruitfully. The teachers omitted a little task in classes which were directed in teacher' activity guide. Everyone has some limitations depending on situations. The teachers tried hard to implement every task written in the guide. But failing partly in conducting classes alike all the guidelines and excluding a little tasks are not tremendous limitations.

8.6 Teachers' challenges in operating technological resources

The observed classes were in rural area of Bangladesh. The observed teachers were neo-users of technological equipment in classroom. For this reason, some of them faced problems in operating mobile technology. Similarly, Ehsan, Ashrafuzzaman and Das (2012) and Ashrafuzzaman, Babu and Begum (2010) opine that as the teachers are new in using the technologies, sometimes teachers were found to be facing difficulty in findings

lesson from the audio and to forward and backward the lessons. Nonetheless, the presence of researchers might have affected their efficiency in classrooms. Also, Al-Faki and Khamis (2014) find that Jeddah Schools' English language teachers face challenges using Interactive Whiteboard (IWB) in English language classes due to teachers' lack of computer competency and it hinders IWB integration in teaching and learning English language.

8.7 Activities modified from teachers' guides
Sometimes teachers conducted the activities after a bit modification from the actual guidelines. According to the need of the situation, learners' competence levels and allotted times, teachers cannot strictly follow the instruction written in the teachers' and activity guides. Moreover, Teachers cannot maintain the exact sequence of activities. Thus they omit some tasks. It might be because of the situation or their competence levels.

8.8 Time limitation for getting prepared
There has been an insufficiency of English teacher in rural schools of Bangladesh. Hence, they are burdened with a lot of classes in a day (Ashrafuzzaman, 2014). Therefore, they do not get enough time to be well prepared for a class. Since they are unable to take classes quite efficiently, lack of preparation time can be blamed. Moreover, large class size and lack of in-service training are some other key issues which have been unfavourable condition for communicative language teaching in the classroom (Yasmin, 2009, Rahman, Begum & Zinnah, 2009).

8.9 Traditional psychological factors
According to Robertson et al (1996), personal and psychological factors are related to teachers' resistance to computer use (in Mumtaz, 2000).Generally rural English teachers in Bangladesh have not been well equipped with technological intervention in taking classes. Thus their psychological factors, like anxiety, unease etc. in using technology, cause inefficiency in taking classes.

8.10 Slow learners consume more time in tasks
Regarding inclusion Lamport, Graves and Ward (2012) opine,

> Inclusion of all children within the classroom has brought about a new challenge for teachers. A typical class may consists of gifted children, slow learners, English-language learners, mentally retarded children, hyperactive children, emotionally challenged children, and low socio-economically status children. With such a diverse combination, classroom management, along with focusing on delivering a differentiated instruction that targets each student individually in the classroom has made a regular education teacher's job beyond difficult.

The learners of observed English classes were inhabitants of rural areas of Bangladesh. They come from such a social environment where using technology for teaching-learning is not a regular practice. As a result, some of them remain slow learner in classes while teachers are using mobile technology for teaching-learning. Also, Ehsan, Ashrafuzzaman and Das (2012) state that major challenges in introducing the practices are students' lack of basic knowledge in English and lack of English speaking environment. Maximum students of rural areas are from illiterate and poor families. Besides, teachers have to allot them more time in exercises. Consequently, teachers cannot be successful in utilizing full class time in assigned tasks.

9. Conclusion

This study investigated primary grade teachers' efficiencies in using materials in English classrooms. Findings of the study revealed that the teachers had been using a number of technology based innovative materials in the rural classrooms of Bangladesh. Teachers conducted several interactive activities accompanied by teaching materials according to the activity guidelines written in the teachers' guides. On the contrary, sometimes teachers failed to get the activities done by students for different reasons. Teachers' psychological anxiety related to using technology in classrooms and loads of work at schools are major barriers in reveling efficiency in using described materials in classroom. In addition to that, students' level of understanding and unfamiliarity of such technological materials make it difficult for teachers to implement innovative materials successfully in English classrooms.

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TESTING THE USAGE OF THE APPLICATIVE EXAMPLES IN UNIVERSITY MATH TEACHING

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Abstract: The focus of this article is implementation and improvement of teaching methods for the lessons of 'Selected Chapters of Mathematics' taught in the second semester of the first year of bachelor studies for students of economical studies. To discern the student's knowledge level we purposely avoided the use of a standardised test as it assesses mostly the current state of information knowledge. Bearing in mind the first year students come from different types of secondary schools with markedly differing curriculums, the standardised test does not provide adequate information about the quality of the taught subject. We tested students from two academic years undergoing teaching the classical way and also implementing new methods and trends in the area of math didactics and quantitative methods.

Key words: educational process, mathematic methods, statistical evaluation, quality of education, DITOR

INTRODUCTION

Measuring added value in 'MPHV' (measured added value education) has become a sought after quantitative evaluation tool of education institutions. Added value expresses certain extent of knowledge student acquired during a certain period by active participation in the educative process of the respective institution. Quality of such education is recently a much discussed topic (Harris 2011, Krpec and Burda, 2011, Kozák and Rehúš 2015, OECD 2013, Kaclík et al. 2015). Measuring added value lies in checking the student's (or a group of students, respectively) knowledge before and after the teaching process by an appropriate form of test with content adequately responding to matter taught. Acquired results get compared and evaluated using a statistical model. Required result is the information indicating the "extent" of newly acquired knowledge (Braun 2005, Rogers et al. 2011). There are several models of measured added value education (Lissitz 2005, Krpec and Burda, 2011). Correctly chosen models used for measuring added value education (Doran and Lockwood, 2006) should answer following questions:

1. What is the percentage of acquired knowledge due to school's (teacher's) input?
2. How effective is school's (teacher's) input?
3. What are the characteristics of an effective school?

In some countries the added value results are one of the criteria for a student choosing an educational institution, for example in Great Britain, Finland or Poland. At some schools the report about students' performance results can influence the post and wages of the teacher (Braun 2005, Baker et al. 2010, Glazerman et al. 2010, Schochet 2010, Darling-Hammond, 2012). Such type of education quality evaluation puts the school or teachers under pressure from public or parents but also offers certain possibility of progress, mainly in attaining the prestigious position.

Most of works about the added value education deal with educational process at elementary and secondary schools. As it was shown in Tam, 2001, it is possible to analyse university education as well.

METHODOLOGY OF RESEARCH

Nowadays a trend in teaching process is using innovative methods. By definition it is such methods where teacher abandons serving complete information and knowledge, where the student is not a mechanical receiver without active participation in solving the given problem.

Among such innovative teaching methods is heuristic teaching based on principle of creative problem solving (Bajtoš, 2007). It is a form of searching teaching based on supposition the student is solving the problem above his knowledge level with the help of teacher as a guide while trying to understand the problem and find an adequate solution. The role of the teacher is to guide, to advise about how to proceed and in the subsequent discussion find the solution, respectively to inform about other possible options. Heuristic teaching utilises many methods aiding creative thinking, for example TRIZ, Quickstorming, Brainstorming or synectics. At the present another heuristic method has made an appearance, DITOR. Authors are M. Zelina and M. Zelinová (Zelina 2000) and the method DITOR devised by them is based on following these steps:

- D – **d**efine the problem and outline the ideal solution,
- I – be **i**nformed about the problem, gather as much information as possible,
- T – **t**ry to come up with a solution,
- O – **o**btain evaluation of this solution and choose the best one,
- R – **r**ecreate this solution in reality and solve the problem.

Besides teaching different areas of mathematics, the aim of the analysed subject is to develop logical thinking and the ability to learn on one's own, to solve tasks in a group and to apply the knowledge acquired even from other subjects. That is reason why we have chosen DITOR method. A lecture was organised for students opening the topic where they received tasks for individual solving. During a lab section we discussed this solutions student had prepared. The remaining part of the lab lesson was devoted to group solving, each group being given a different task. Their chosen representative presented the result to other groups and at the end we evaluated effectuality of the solution. For the evaluation of testing we employed a statistic analysis. For the purpose of research, presenting and comparison of acquired data a wide range of statistic software has become available in recent years. Among the best known and most used are SAS, GNU Octave, PSPP, ADaMSoft or BV4.1. We have decided on SAS system (Statistical Analysis System) which is a professional system used and known worldwide.

RESULTS OF RESEARCH

We tested a total of 188 students signed for the subject 'Selected Chapters of Mathematics' in the second semester of the academic year 2013/2014. An output testing was carried out on students during semester to ascertain their abilities and knowledge. The choice of subjects was specific in drastic fall in the student level of mathematical abilities in the area of quantitative methods. We tried to rectify this shortcoming by including new elements of teaching process. We statistically analysed students' results from input and output testing to discover whether the selected actions for improving student's skills and knowledge were effective or not. The available results were grades A to FX for each student. These grades were assigned a quantitative expression, grade A got 1, grade B got 1.5 and so on until grade E getting 3. Grade FX was assigned 4.

Testing 2013/2014

Moments			
N	188	Sum Weights	188
Mean	3.25797872	Sum Observations	612.5
Std Deviation	0.9213395	Variance	0.84886648
Skewness	-0.7823722	Kurtosis	-0.7485132
Uncorrected SS	2154.25	Corrected SS	158.738032
Coeff Variation	28.2794819	Std Error Mean	0.06719559

Table 1: Basic statistic characteristics for input test

The average grade was 3.26 which is an unsatisfactory result as it fluctuates between E and FX. Standard deviation is 0.92 and dispersion is approximately 0.848. Should grade FX have value of 3.5 the overall result
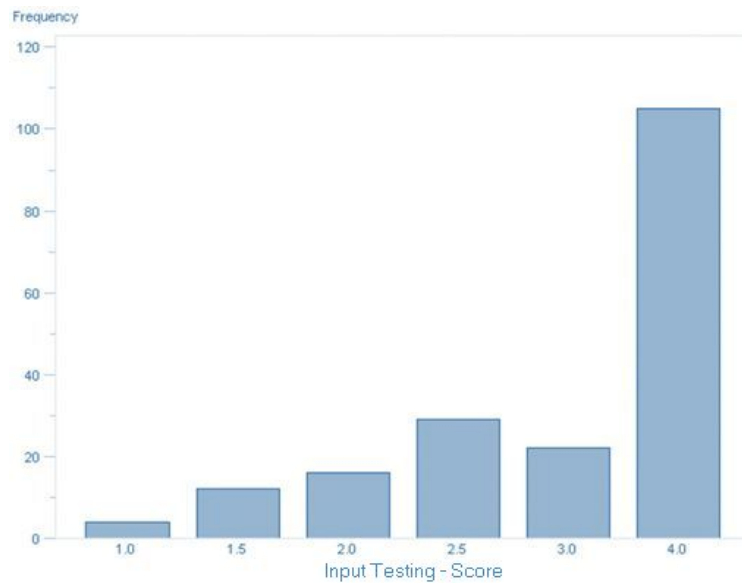
would be better but value of 4 reflects better the fact point values should be markedly below 50 points. The division of our file is platykurtic (-0.749) and left sloping (-0.782). Next there is a table for confidence intervals for chosen statistical characteristics.

Basic Confidence Limits Assuming Normality		
Parameter	Estimate	95% Confidence Limits
Mean	3.25798	3.12542	3.39054
Std Deviation	0.92134	0.83667	1.02522
Variance	0.84887	0.70002	1.05108

Table 2: Confidence intervals at significance level of 0.05

For this statistic group we determined also confidence intervals for average, standard deviation and dispersion. Confidence interval for the average is (3.125; 3.391). If we had the results of all the students, respectively should all the students partake in testing, the overall grade would be in this interval with 95% chance. Here is the column grid of multiplicity division of individual grades.

Grid 1: Multiplicity division of individual grades for the input test

105 students obtained the worst grade FX from input test meaning they failed. Only 4 students got the best grade A. Thus it was justifiable to consider improvements as this state was worrying.

Testing 2014/2015

The subjects' input test for new academic year was the same as in 2013/2014. The amount of students was 188. However, the approach toward teaching the subject was different employing DITOR method. At the beginning of semester students were each assigned thematic topics according to the curriculum. Their task was to briefly recapitulate basic results from the lecture and to prepare and exemplary calculate a sample from practice for their topic. This ensured the reporting had to work with respective literature and employ knowledge from previous topics as their interconnection in math is very close. The role of teacher was to guide and to correct possible errors because not all the students were able to master the topic. But implementing this method led to higher participation of all students. The preparation motivated students also because individual presentations were graded (point scale) and this was part of their overall final grade (exam). Generally speaking, almost any change of method catches the students' attentions. This particular type of teaching stimulated students' individual work within the area of a certain topic consecutively referring to practice. Specific for mathematic teaching at economic universities is that students themselves perceive basic theoretical subjects as an unnecessary burden.

Even though we utilise applied math in everyday work, its full extent can the student see only in later years of study and some "technical" subjects rather avoid using math although it would be beneficial or even necessary for the subject.

At the end of semester we again evaluated successfulness of applied teaching processes searching improvement of students' knowledge and skills, using an output test. The following table surveys a review about chosen statistic characteristics for group of grades from output tests.

Moments			
N	188	Sum Weights	188
Mean	2.49202128	Sum Observations	468.5
Std Deviation	0.90671303	Variance	0.82212851
Skewness	0.39919993	Kurtosis	-0.7049222
Uncorrected SS	1321.25	Corrected SS	153.738032
Coeff Variation	36.3846423	Std Error Mean	0.06612884

Table 3: Basic statistic characteristics for output test

The average value of grade of students, who also underwent the first testing, was higher. From the original value of 3.26 the average grade improved to 2.49. Standard deviation and dispersion are similar with values of the input test which indicates similar variability. Group is still platykurtic compared to a normal one but the sloping changed from left to right meaning more values are situated in left half of division. Subsequently we calculated the confidence intervals for chosen characteristics.

Basic Confidence Limits Assuming Normality			
Parameter	Estimate	95% Confidence Limits	
Mean	2.49202	2.36157	2.62248
Std Deviation	0.90671	0.82339	1.00894
Variance	0.82213	0.67797	1.01797

Table 4: Confidence intervals at significance level of 0.05

The average grade for input test would be in interval (2.362; 2.622) with 95% chance. That is a significant improvement against the input test. The following grid portrays the multiplicity division of individual grades.

From the Grid 2 it is obvious that the number of grade FX dropped from 105 to 37. Grid is more similar to the normal division. The most common grade is grade D numbering 50 with grade C numbering 5 less (45). Also the best grade A numbered 10 more than previously.

Grid 2: Division of multiplicity of individual grades for the output test

COMPARISON AND CONCLUSION

Supposing both groups spring from normal division – possible because there were more than 100 observations – parametric paired t-test can be used. It statistically compares difference between two averages at significance level. Our zero hypothesis is the allowed difference between input and output tests can be -0.75. Alternative hypothesis is the difference does not equal -0.75 (such improvement is possible, it is more than one grade better). The results are in the following table.

N	Mean	Std Dev	Std Err	Minimum	Maximum
188	-0.7660	0.7060	0.0515	-2.0000	1.5000

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
-0.7660	-0.8675	-0.6644	0.7060	0.6411	0.7856

DF	t Value	Pr > |t|
187	-0.31	0.7570

Table 5: Results of the comparison using paired t-test

Average difference between input and output tests is 0.766. This difference between averages will be in interval (0.8675; 0.6644) with 95% chance. Standard deviation for these averages is 0.706. P-value equals 0.757 which is not less than the chosen significance level of 0.05 and the hypothesis that the average of grade differences between input and output tests equals -0.75 cannot be rejected. The following grid shows the division of improvement multiplicity for participating students.

Grid 3: The distribution of difference between input and output tests

As it can be observed from the grid, in the absolute formulation more students improved their grades (more students achieved minus differential values so they improved). For the amount of students the most deteriorated by 1 degree. So it could be assumed that chosen teaching methods and teaching process we have achieved greater success in output than in input.

It can be concluded that the significantly better result of innovated teaching methods was achieved via chosen teaching methods DITOR and aided with teaching process. We evaluate this process and its results as positive.

The arrangements based on the existence of a compulsory additional subject 'Mathematics For Economists' are still ongoing. This subject deals with mentioned taught issues based on subject 'Mathematics' and is a supplementary subject for this core subject of university studies.

It is very important to recognise innovation of the teaching process of individual subjects. Our experiment showed that also subjects of quantitative character can be organised in the form of lab practice lessons where the student participates in applying math into practice.

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THE EXAMINATION OF TEACHER VIEWS ABOUT VARIOUS FACTORS RELATED TO APPLICABILITY OF THE MULTIPLE INTELLIGENCE THEORY IN PRIMARY SCHOOLS

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Abstract: The purpose of this study was to examine the views of primary school teachers about the applicability of the multiple intelligence theory based on variation of gender, educational status, seniority and place of duty. This study is a mixed methodical examination that use quantitative and qualitative research methods together in the scanning model. The universe of the study consists of primary-school teachers who work at public primary schools in the province of Diyarbakır in 2015-2016 academic year. The sample consists of 100 village, 100 district, and 100 urban center, and a total of 300 primary-school teachers in the province of Diyarbakır for the quantitative dimension; and 5 village, 5 district, and 5 urban center, and a total of 15 primary-school teachers in the province of Diyarbakır for the qualitative dimension. A survey form was used to collect quantitative data for the present study, while semi-structured interview form was used as data collection tool in the qualitative dimension. Study results demonstrated that primary-school teachers had positive viewson the applicability of the multiple intelligence theory in general.
Keywords: Multiple Intelligence Theory, Views of Teachers, Intelligence

INTRODUCTION

Issues such as the formation of thought, how and through which mechanisms human behavior is formed in the brain, how cognitive processes such as learning, perception, decision making, keeping in memory, problem solving, communication, creativity, intuition developed occupied the minds of philosophers and scientists throughout history and several studies have been conducted over time to find responses to these questions. Specialists that researched the mind determined that the abovementioned cognitive processes are the main components of intelligence and their sum constitutes the intelligence (Pfeifer and Scheier, 2001).

Although intelligence is an abstract concept, it has been always the focus of curiosity as mentioned above. Definitions of intelligence demonstrate traces of different scientific approaches as well as a common ground. Certain definitions of intelligence could be summarized as follows:

Avicenna argued that intelligence emerges by learning provided by both the learning process and the knowledge created by perceptions originating from the external world (Selçuk et al., 2004). On the other hand, Wechsler defined intelligence as the individual's ability for expedient behavior, rational thinking and active interaction with the environment (Özgüven, 1994).

Spearman (1927), who claimed that intelligence, was not dependent on one factor, believed that intelligence was based on two factors; "g" factor related to general abilities and "s" factor related to special abilities. On the other hand, Thurston stated that intelligence consisted of seven elements: (a) numerical problem solving, (b) verbal comprehension, (c) memory, (d) general reasoning, (e) verbal fluency, (f) visualization of figurative relations, and (g) perceptive speed (Gleitman, 1987). According to another proponent of multi-factor intelligence Guilford, intelligence has three faces; (a) cognitive operations (thinking processes), (b) content (things we think about), and (c) product (outcomes of thought). These faces divide into categories, creating 180 combinations of intelligence (Açıkgöz, 2008).

A significant portion of intelligence studies consists of intelligence tests. It was not possible to observe intelligence determined by the interaction between environmental factors and the gene pool. To measure intelligence, auxiliary tools, in other words "intelligence tests" were needed and several intelligence tests were developed (Demirel et al., 2006).

Upon request of French education minister, psychologist Binet, in cooperation with his colleague Theodore Simon, developed the intelligence test called intelligence quotient (IQ) in early 1900's to determine the children under risk. This test was found quite effective for the determined purpose; however, later on it was expanded beyond the original goal and became a psychometric scale used to measure general capacities or intelligence of individuals (Bümen, 2005).

Due to this conventional approach related to intelligence and "IQ-style thinking," individuals were divided into two categories: (1) intelligent individuals and (2) unintelligent individuals. IQ tests became the only criterion to determine whether an individual is considered among intelligent ones or not. In other words, IQ has become the only and constant determinant for the intelligence of an individual. Furthermore, according to conventional approach, individuals are either intelligent by birth or not and there is nothing that can be done to change this fact (Saban, 2005).

Although intelligence tests have been used for a long period of time, recently intelligence tests are widely criticized. The critics usually focus on the facts that intelligence tests ignore cultural differences, inappropriate implementation of these tests, lack of validity and reliability studies, and use of test results for diagnosis and selection purposes, not to help the students, and the existence of several cognitive abilities that are not measured by intelligence tests (Açıkgöz, 2008). Thus, material used in intelligence tests include usually numerical, verbal, form-space content. It could be argued that numerical material have a universal structure across all cultures. However, symbols and concepts utilized in verbal section differentiate among cultures. Forms could be perceived differently as well. Thus, implementation of intelligence tests designed for a particular culture in others could create negative outcomes. It seems like developing an intelligence test that eliminated intercultural differences is rather difficult (Ülgen, 1997).

Intelligence tests developed from early 1900's up to 1980's have been utilized in several fields (education, health, etc.). However, starting from 1980's, multiple intelligence theory suggested by Prof. Howard Gardner in his book Frames of Mind marked a new epoch in intelligence studies.

The theory proposed by Howard Gardner in 1983 made conventional intelligence tests and definition of intelligence that takes only language and mathematics intelligence into account and the ever-present effect of intelligence on the society and education a part of the past. Gardner argued that intelligence does not have two but eight dimensions. Thus, he proposed that, not only those who are successful in mathematics and language, but also individuals that are prominent in music, sports, dance, communications, nature and painting and who have self-knowledge were intelligent (Demirel, 2000).

Gardner defines intelligence based on his theory as follows. Intelligence is defined as the ability to shape a product with one or more cultural value or to solve problems. This definition makes intelligence about what individuals do and create in the real world, and this new understanding is just the opposite of the conventional intelligence which is identified via tests. The new understanding is a qualitative expression and definition of individual's collection of intelligence. Whereas, the old understanding was a quantitative expression of a holistic skill (Bümen, 2005).

Gardner argued that conventional intelligence approach had the advantage of facilitating the assessment of the student based on common criteria, however, it did not promote the discovery of the strengths and weaknesses of the student and claimed that intelligence had eight components that operate independent from each other (Başaran, 2004). Eight components of Gardner (1993) mentioned in his intelligence theory were the following: 1) Verbal / linguistic intelligence; 2) Logical / mathematical intelligence; 3) Visual / spatial intelligence; 4) Bodily / kinesthetic intelligence; 5) Musical / rhythmic intelligence; 6) Social / interpersonal intelligence; 7) Intrapersonal / annealing intelligence; and 8) Naturalistic intelligence.

In traditional instruction, it is possible to behave assuming that all students possess developed verbal-linguistic or logical – mathematical intelligence. It is assumed that students could learn it all through activities based on verbal – linguistic and logical – mathematical intelligence such as listening, reading, answering the questions,

explaining, taking notes, doing written or verbal exercises, and problem solving. This fact renders classes unbearable for students whose other intelligence components were developed (e.g., bodily – kinesthetic). Since we possess different cognitive structures, differences in our ways of learning are inevitable. For instance, a subject that normally requires four –five hours of instruction could be taught quite rapidly using figures to visual – spatial students or motions to bodily – kinesthetic students (Açıkgöz, 2008).

According to Gardner (1999), multiple intelligence theory could be applied in schools for three purposes. These are;
- Developing desired skills in students
- Approaching a concept, course subject or a scientific branch using different methods
- Individualization of education.

There is no reason why the schools should not address all multiple intelligence areas. On the contrary, the duty of schools is to improve all intelligence abilities of the students. If any school considers itself void of necessary means to develop all abilities / intelligence types of students, it needs to provide these means from the environment (family, local government, non-governmental organizations) (Baysal et al., 2009). Furthermore, based on the multiple intelligence theory, the objective of education is not merely to improve academic success of the students, but to unravel and develop multiple intelligence potentials in students at the same time (Saban, 2005).

Several studies were conducted to scrutinize the reflections of multiple intelligence theory in primary education. The following could be counted among them: Yenilmez and Bozkurt (2006); Canbay (2006); Erdamar (2009); Yılmaz Kalaycı (2009); Ozan, Taşkın, Bay and Kaya (2010). However, along with the introduction of 12 year compulsory education system, known as 4+4+4, registration of 60 – 66 month old children in school became possible with parent permission and registration of 66 – 80 month old children in school became compulsory. Due to commencement of school life at early ages, Ministry of National Education implemented a change in the curriculum and cancelled 2 hours per week physical education course in primary school 1st, 2nd and 3rd grades and replaced it with five hours per week game and physical activities course. In primary school curriculum, where the system was implemented in 2012 – 2013 academic year and the gradual transformation was completed in 2015 -2016, no studies were conducted about applicability of multiple intelligence. The present study reflects teacher views on applicability of multiple intelligence in primary schools under the light shed by the recent changes in curriculum.

METHOD

In this section, information concerning the research model, universe, sample and data collection tool that was used in the study and data analysis will be provided.

Research Model
In the present study that aims to examine teacher views on applicability of multiple intelligence theory in primary education based on various variables, mixed methodology was utilized. Fundamental assumption of mixed method research is to utilize qualitative and quantitative research methods in conjunction to better understand the research problems and questions when compared to using these methods separately (Creswell, 2008). Furthermore, the mixed method provides a selective approach for the researcher in methodology and design to conduct a comprehensive, pluralistic, supplementary research. Several research questions could be completely answered using the solutions provided by the mixed method (Johnson and Onwuegbuzie, 2004). Thus, significant characteristics of the mixed method such as plurality and selectivity could render the mixed method superior when compared to single method designs (Johnson and Christensen, 2004).

In quantitative dimension of the present study, a descriptive survey was conducted Survey methods are research approaches that aim to describe a past or present case as is. The event, individual or the object that is the subject of the study is attempted to be described under its own conditions and as is (Karasar, 2011). In addition, the objective of studies conducted with survey method is generally to take a picture of the existing condition related to the research subject and make a description. To achieve this aim, survey studies usually collect information from a wide audience using the response choices determined by the researcher (Büyüköztürk et al., 2010).

In qualitative dimension of the study, interview technique with open-ended questions was used. Glaser defines qualitative research as an approach that prioritizes investigation and understanding of social events within the environment they belong to with an understanding based on theorization. In this definition "theorization" means

a modelling study that explains a group of previously unknown results based on their interrelations (Cited by Yıldırım and Şimşek, 2008). In addition, the most frequently used qualitative research method is the interview technique. Interview technique is a data collection tool that aims to reveal what individuals think and why, what are their emotions, attitudes and feelings, and the factors that guide their behavior. In brief, it is a scientific tool that aims to enter the mind and heart of the individual (Ekiz, 2009).

Universe and Sample

The study was conducted with classroom teachers in Ministry of National Education primary schools in Diyarbakır province during 2015 – 2016 academic year.

"Cluster sampling" method was used in the quantitative dimension of the present study. Cluster sampling is the sampling method where all clusters in the universe have individual selection chances in the sample (Karasar, 2011). The sample included a total of 300 classroom teachers that work in Ministry of National Education primary schools in Diyarbakır province. One hundred of these were working in village primary schools, 100 in townships and 100 were employed in city center primary schools.

In qualitative dimension of the study, purposive sampling was utilized. Researcher could assign information sources directly to obtain most usable information (Kaptan,1998). Thus, the sample included 15 classroom teachers that work in Ministry of National Education primary schools in Diyarbakır province.

Data Collection Tool

To collect the quantitative data for the present study that aimed to investigate teacher views on applicability of multiple intelligence theory in primary education, the survey form developed and revised by Canbay (2006) was utilized. The survey form included two sections. In the first section, information on teachers' years in service, gender, educational status, and place of duty is collected. The second section in the form of 5-point Likert-type scale included 20 statements that could be responded as (1) completely disagree, (2) disagree, (3) somehow agree, (4) mostly agree, (5) completely agree. Reliability analysis of the survey was conducted using Cronbach alpha internal consistency coefficient and this figure was found as 0.923. Validity of the scale was established with the approval of two field experts.

To collect qualitative research data, a semi-structured interview form designed by the author was utilized. The data collection tool included four open-ended questions. Teachers were allowed to respond to the questions freely. The interview audio was recorded after permission from the interviewees was obtained. Questions included in the interview were examined by two specialists for clarity, comprehensibility and validity dimensions.

Data Analysis

Analysis of quantitative data was conducted with Statistical Package for the Social Sciences (SPSS) software. Descriptive statistics parameters of arithmetic mean and standard deviation were calculated on quantitative data. Homogeneity test (Levene) was applied to determine whether the data was distributed homogeneously. Level of significance for the Levene test applied for this purpose was determined as $p>0.05$. To determine whether there was a significant difference between the groups, independent samples t-test was conducted for the gender variable; one-way analysis of variance was conducted for place of duty, term in office and educational status variables. Conducted analyses were tested in $p<0.05$ level of significance. Scheffe test was applied to determine the source groups and the level of significance found as a result of analysis of variance.

Survey data was interpreted using the scoring that follows: 1.00 – 1.80: completely disagree, 1.81 – 2.60: disagree, 2.61 – 3.40: somehow agree, 3.41 – 4.20: mostly agree, 4.21 – 5.00: completely agree.

Content analysis was used in collected qualitative data in the study. During the analysis, the views of teachers derived from their answers were coded. After the coding process, the data were matched. In the matching process, codes were associated to form sub-themes and each sub-theme was grouped under the themes.

FINDINGS

Arithmetic mean and standard deviation data on teacher views about applicability of multiple intelligence theory in primary education are presented in Table 1.

Table 1. Arithmetic mean and standard deviation values for teacher views on multiple intelligence

Items	N	X	Sd
1.I have adequate knowledge on multiple intelligence theory	300	3,50	,89
2.I search for research and developments on multiple intelligence theory using Internet or written resources	300	3,09	1,19
3.New curriculum and textbooks are suitable for instruction based on multiple intelligence theory	300	3,21	,98
4.All intelligence areas are equally important for me in multiple intelligence theory applications	300	3,50	1,03
5.I try to prepare my syllabus based on multiple intelligence theory	300	3,42	,99
6.I design activities that would develop all intelligence areas or utilize all intelligence areas when presenting material	300	3,37	1,00
7.I think instruction based on multiple intelligence theory gives better results when compared to conventional methods	300	3,77	1,00
8.I implement multiple intelligence theory in all classes	300	3,28	,93
9.As a result of multiple intelligence theory, each student could feel useful	300	3,76	,94
10.I take types of intelligence into account during instruction	300	3,66	,92
11.I think multiple intelligence theory motivates both the teacher and the student and increases communications between teacher and students	300	3,78	,96
12. Students find multiple intelligence theory based instruction more entertaining and participate in the class more	300	3,71	,93
13. Students that used to exhibit difficulties in learning showed improvement since I started to utilize multiple intelligence theory based instruction	300	3,53	,84
14.I believe that multiple intelligence theory applications are more effective on learning retention	300	3,69	,92
15.I can find material for multiple intelligence theory applications	300	2,77	,91
16. Assessment of students based on multiple intelligence theory demands more time and effort from the teachers (observation forms, interview notes, etc.)	300	3,64	,93
17. Parents do the project work that are conducted within the context of multiple intelligence theory applications rather than the students	300	3,34	1,00
18.I find it difficult to meet the time requirements during multiple intelligence theory based instruction	300	3,57	,91
19. We experience chaos and much noise during multiple intelligence theory based instruction, especially during group work	300	3,68	,89
20. Educational environment should be improved to implement multiple intelligence theory comfortably	300	4,18	,83
Mean Total	**300**	**3,52**	**,61**

There were no statements on multiple intelligence that classroom teachers "completely" agreed, "completely" disagreed or disagreed. Classroom teacher views on multiple intelligence theory mean score (X=3.52) demonstrated that the views of teachers on multiple intelligence theory were generally positive. However, responses to item 15, "I can find material for multiple intelligence theory applications" (X= 2.71) showed that teachers experienced difficulties in finding material for multiple intelligence theory applications.

T-test results for teacher views about applicability of multiple intelligence theory in primary education based on gender variable are given in Table 2.

Table 2 t-test results based on gender variable

Gend	N	X	Ss	sd	t	p
Femal	139	3.49	.576	298	-.746	.456
Male	161	3.55	.639			

Table 2 demonstrates that there was no significant difference based on gender variable in t-test conducted to determine whether gender variable had a significant effect on views of teachers on multiple intelligence theory($t_{(298)}$= -0.746, p> 0.05). Thus, it could be stated that gender variable had no significant effect on teacher views about applicability of multiple intelligence theory.

One-way analysis of variance results on teacher views about applicability of multiple intelligence theory in primary education based on education status variable are given in Table 3.

Table 3 Analysis of Variance Results Based on Education Status Variable

Education Status	Sum of Squares	Sd	Mean of Squares	F	p
Between Group	16.729	2	8.364	26.197	.000
In-Group	94.829	297	.319		
Total	111.557	299			

Table 3 demonstrates that there was a significant difference based on education status variable in the one-way analysis of variance (Anova) conducted to determine whether education status variable had a significant effect on views of teachers on multiple intelligence theory (F= 26.197, p<0.05). Scheffe supplementary post-hoc test was conducted to determine the source groups for the difference after Anova and a statistically significant difference was found between teachers with a master's degree and undergraduate degree favoring teachers with a master's degree, and between teachers with a doctora teand undergraduate degree favoring teachers with a doctorate degree. The differences between other dub-dimensions were statistically insignificant (p>0.05). Based on these results, it could be stated that teachers with a master's or doctorate degree could implement multiple intelligence theory methods and techniques more when compared to teachers with an undergraduate degree.

One-way analysis of variance results on teacher views about applicability of multiple intelligence theory in primary education based on term in service variable are given in Table 4.

Table 4 Analysis of Variance Results Based on Term in Service

Term in Service	Sum of Squares	Sd	Mean of Squares	F	p
Between groups	16.039	4	4.010	12.384	.000
In-Group	95.518	295	.324		
Total	111.557	299			

Table 4 demonstrates that there was a significant difference based on term in service variable in the one-way analysis of variance (Anova) conducted to determine whether there was a significant difference between the views of teachers on multiple intelligence theory based on term in service variable (F= 12.384, p<0.05).Scheffe supplementary post-hoc test was conducted to determine the source groups for the difference after Anova and a statistically significant difference was found between teachers who had 1 – 5 years term in service and teachers who had 11 – 15 years, 16 – 20 years and 21 years and over term in service favoring teachers who had 1 – 5 years term in service, between teachers who had 6 – 10 years term in service and teachers who had 16 – 20 years and 21 years and over term in service favoring teachers who had 6 – 10 years term in service.The differences between other dub-dimensions were statistically insignificant (p>0.05). Based on these results, it could be stated that teachers who had 1 – 5 years and 11 – 15 years term in service could implement multiple intelligence theory methods and techniques more when compared to teachers who had 16 – 20 years and 21 years and over term in service.

One-way analysis of variance results on teacher views about applicability of multiple intelligence theory in primary education based on place of duty variable are given in Table 5.

Table 5 Analysis of Variance Results Based on Term in Service Variable

Place of Duty	Sum of Squares	Sd	Mean of Squares	F	p
Betweengroups	6.408	2	3.204	9.050	.000
In-Group	105.149	297	.354		
Total	111.557	299			

Table 5 demonstrates that there was a significant difference based on place of duty variable in the one-way analysis of variance (Anova) conducted to determine whether there was a significant difference between the views of teachers on multiple intelligence theory based on place of duty variable (F= 9.050, p<0.05).Scheffe supplementary post-hoc test was conducted to determine the source groups for the difference after Anova and a statistically significant difference was found between teachers who worked in the villages and city center, favoring teachers who worked in the villages, and between teachers who worked in the townships and city center, favoring teachers who worked in the townships. The differences between other dub-dimensions were statistically insignificant (p>0.05). Based on these results, it could be stated that teachers who worked in the villages and townships had more positive views on applicability of multiple intelligence theory when compared to teachers who worked in the city center.

Qualitative data were obtained by posing 4 open-ended questions to 15 classroom teachers using the semi-structured interview form in the study. Obtained findings are presented in below tables.

Question 1: *''What comes to your mind when you hear multiple intelligence theory?''*
    Participants' responses to Question 1 are presented in Table 6.

Table 6 Analysis results and frequencies of teachers' responses for Question 1

Responses	f	Teachers
It means more than one areas of intelligence.	12	Ö1, Ö2, Ö3, Ö5, Ö6, Ö7, Ö8, Ö9, Ö12, Ö13, Ö14, Ö15
Distinctive intelligence of the individual.	4	Ö6, Ö10, Ö14, Ö15
One of the instruction method and techniques used in education.	3	Ö4, Ö11, Ö12
It means contemporary intelligence.	1	Ö2

Table 6 demonstrates that twelve teachers stated that it means more than one intelligence areas(Ö1, Ö2, Ö3, Ö5, Ö6, Ö7, Ö8, Ö9, Ö12, Ö13, Ö14, Ö15), four teachers stated that it means distinctive intelligence of the individual(Ö6, Ö10, Ö14, Ö15), three teachers stated that it is an educational instruction method and technique(Ö4, Ö11, Ö12), and one teacher stated that it means contemporary intelligence(Ö2) in their answers to Question 1. Responses given by certain teachers to this question were as follows:
    "Multiple intelligence means more than one areas of intelligence" (Ö15)
    "It means that there is not one single field of intelligence in each individual, but there are areas of intelligence that change from one individual to another" (Ö6).

Based on these results, it could be stated that teachers generally had adequate information about multiple intelligence theory.

Question 2: *''Do you utilize multiple intelligence theory in your instruction methods and techniques? Can you explain how by giving reasons?''*
    Participants' responses to Question 2 are presented in Table 7.

Table 7 Analysis results and frequencies of teachers' responses for Question 2

	Response	f	Teachers
YES	It promotes retention of education - instruction	8	Ö1, Ö3, Ö6, Ö7, Ö10, Ö12, Ö13, Ö15
	It reveals students' interests and abilities	6	Ö3, Ö5, Ö6, Ö8, Ö13,
	It makes classes more entertaining	3	Ö4, Ö12, Ö15
	MNE textbooks support multiple intelligence	2	Ö7, Ö8
NO	Educational environment where multiple intelligence could be implemented is not available.	2	Ö2, Ö9
	I do not have sufficient information	1	Ö11

Table 7 demonstrated that eight teachers stated that they used multiple intelligence theory in their instructional methods and techniques because it promotes retention of education – instruction(Ö1, Ö3, Ö6, Ö7, Ö10, Ö12, Ö13, Ö15), six teachers stated that they used it because it reveals students' interests and abilities(Ö3, Ö5, Ö6, Ö8, Ö13, Ö14), three teachers stated that they used it because it makes classes more fun(Ö4, Ö12, Ö15), and two teachers stated that they used it because Ministry of National Education textbooks supported multiple intelligence(Ö7, Ö8), while two teachers stated that they did not utilized multiple intelligence theorem in their instructional methods and techniques because they were not able to find an educational environment where they could implement it (Ö2, Ö9), and one teacher stated that it couldn't be implemented due to the lack of adequate knowledge (Ö11) in teachers' responses to question 2. Responses given by certain teachers to this question were as follows:

"Resources permitting, I try to implement it as much as possible. Because, I think the retention of course instructions based on multiple intelligence theory is higher" (Ö15).

"The reason why I implement it is the interest students demonstrate and the knowledge is better reinforced" (Ö7).

Based on these results it could be concluded that teachers utilized multiple intelligence theorem in their instructional methods and techniques because it provides retention in education, reveals the interests and abilities of students, makes classes more entertaining and MNE textbooks support multiple intelligence. Furthermore, among the reasons for teachers' inability to implement multiple intelligence theorem in their instructional methods and techniques, lack of educational – instructional environment suitable for multiple intelligence and lack of teachers' knowledge about multiple intelligence theory could be mentioned.

Question 3:*''What are the difficulties you experience whike implementing multiple intelligence theory in your methods and techniques?''*

Participants' responses to Question 3 are presented in Table 8.

Table 8 Analysis results and frequencies of teachers' responses for Question 3

Responses	f	Teachers
There is a shortage of hardware and material	13	Ö1, Ö2, Ö3, Ö5, Ö6, Ö7, Ö8, Ö9, Ö10, Ö12, Ö13, Ö14, Ö15
Classroom sizes are quite large	11	Ö1, Ö2, Ö4, Ö5, Ö6, Ö7, Ö9, Ö11, Ö13, Ö14, Ö15
Parents do not have adequate knowledge about multiple intelligence	4	Ö3, Ö5, Ö13, Ö14
There is too much information in the curriculum	4	Ö1, Ö6, Ö8, Ö14
It takes too long to implement	3	Ö1, Ö4, Ö15
It is difficult to determine individual intelligence areas	2	Ö8, Ö13

Table 8 demonstrates that thirteen teachers stated that there was a shortage of hardware and material(Ö1, Ö2, Ö3, Ö5, Ö6, Ö7, Ö8, Ö9, Ö10, Ö12, Ö13, Ö14, Ö15), eleven teachers stated that the classrooms were too

crowded(Ö1, Ö2, Ö4, Ö5, Ö6, Ö7, Ö9, Ö11, Ö13, Ö14, Ö15), four teachers stated that parents did not possess adequate knowledge about multiple intelligence(Ö3, Ö5, Ö13, Ö14), four teachers stated that the implementation took too much time(Ö1, Ö6, Ö8, Ö14), three teachers stated that there was too much information in the curriculum(Ö1, Ö4, Ö15), and two teachers stated that it was difficult to determine individual areas of intelligence(Ö8, Ö13). Responses given by certain teachers to this question were as follows:

"Primarily, I experience the problem of the material shortage when I implement multiple intelligence in my methods and techniques" (Ö9).

"Since the classrooms are too crowded, I experience difficulties in designing an individual activity plan for each student" (Ö13).

Based on these results, it could be argued that teachers experienced hardware and material shortages while implementing multiple intelligence theory and this made it difficult to implement multiple intelligence theory comprehensively, furthermore, crowded classrooms made it difficult to determine individual intelligence areas of students and due to the lack of parents' knowledge on multiple intelligence theory, they desired the dominance of verbal and mathematical intelligence in their children whether they exist or not, the implementation of the theory took time, thus, decreasing its usability. It could be also claimed that the existence of too much information in the curriculum results in teachers being weary not to be able to finish the subjects in the curriculum, making it difficult for them to utilize this method that takes longer to implement.

Question 4: *"what are your suggestions for implementation of multiple intelligence theory in education and instruction?"*

Participants' responses to Question 4 are presented in Table 9.

Table 9 Analysis results and frequencies of teachers' responses for Question 4

Responses	f	Teachers
Educational environment should be improved (material, hardware, infrastructure, etc.)	13	Ö1, Ö2, Ö3, Ö4, Ö5, Ö6, Ö7, Ö8, Ö9, Ö10, Ö13, Ö14, Ö15
Classroom sizes should be reduced	11	Ö1, Ö2, Ö3, Ö4, Ö5, Ö6, Ö7, Ö9, Ö11, Ö13, Ö15
Curriculum should be designed suitable for multiple intelligence and it should be extenuated	7	Ö1, Ö4, Ö6, Ö8, Ö10, Ö13, Ö14
Teachers should receive applied training for multiple intelligence in college	5	Ö2, Ö10, Ö11, Ö12, Ö14
Branch teachers should instruct music, visual arts and physical education courses starting from the 1st grade	4	Ö3, Ö7, Ö13, Ö15
Schools should be open outside hours of attendance and mathematical, visual, physical, musical, etc. classes should be initiated	1	Ö6

Table 9 demonstrates that thirteen teachers stated that educational environment should be improved (material, hardware, infrastructure, etc.)(Ö1, Ö2, Ö3, Ö4, Ö5, Ö6, Ö7, Ö8, Ö9, Ö10, Ö13, Ö14, Ö15), eleven teachers stated that classroom sizes should be reduced (Ö1, Ö2, Ö3, Ö4, Ö5, Ö6, Ö7, Ö9, Ö11, Ö13, Ö15), seven teachers stated that curriculum should be designed based on multiple intelligence and it should be extenuated(Ö1, Ö4, Ö6, Ö8, Ö10, Ö13, Ö14), five teachers stated that teachers should receive applied multiple intelligence training in the college(Ö2, Ö10, Ö11, Ö12, Ö14), four teachers stated that branch teachers should instruct music, visual arts and physical education courses starting from the 1st grade(Ö3, Ö7, Ö13, Ö15), and one teacher stated that schools should be kept open outside hours of attendance and mathematical, visual, physical, musical, etc. Classes should be opened (Ö6). Responses given by certain teachers to this question were as follows:

"Since retention of visualized subjects is higher, I think projection devices and smart boards in each classroom would benefit greatly" (Ö7).

"Primarily, classroom size should be reduced from 40 – 50 pupils to 15 – 20 students" (Ö13).

Based on these results, to apply multiple intelligence theory, teachers primarily considered it necessary to improve the educational environment and then to reduce the classroom size, to design of the curriculum based on multiple intelligence theory and extenuation of the curriculum, teachers to receive applied multiple intelligence theory training in the college, instruction of music, physical education and visual arts classes by branch teachers starting from the 1st grade in primary schools, and to keep schools open beyond hours of attendance to direct the students to fields such as musical, visual, sportive activities based on their interests and intelligence areas during these periods.

RESULT, DISCUSSION AND RECOMMENDATIONS

Based on the results of the present study that was conducted to investigate teacher views on applicability of multiple intelligence theory in primary schools, it was observed that gender variable had no effect on teacher views.

Based on the results of the present study, it was observed that teachers with 1 – 5 years and 11 – 15 years in service were able to implement multiple intelligence theory in their instructional methods and techniques better than teachers with 16 – 20 years and 21 years and over in service. This could be due to the fact that Ministry of National Education curriculum was designed based on conventional instruction approach before 2005. Ministry of National Education changed the curriculum in 2005 and designed the new curriculum based on constructivist instruction model. Thus, teachers who started the service before 2005 implement the conventional method in their classes and although the curriculum had changed, they stick to their old habits.

Based on the results of the present study, it was observed that teachers who worked in villages and townships desired to implement multiple intelligence theory in their instructional methods and techniques more when compared to teachers that worked in city center, but they were limited in their utilization of multiple intelligence in their methods and techniques due to material and hardware shortages.

Based on the results of the present study, it was observed that teachers with master's and doctorate degrees implemented multiple intelligence theory in their instructional methods and techniques more when compared to teachers with undergraduate degrees. Thus, it could be argued that master's degree should be imperative for classroom teachers, similar to the Finnish regulations to facilitate the implementation of multiple intelligence theory in instructional methods and techniques by classroom teachers.

Based on the results of the present study, it could be stated that the facts that it promoted retention in education and instruction, revealed interests and abilities of the students and rendered classes more fun could be counted among the reasons why classroom teachers implemented multiple intelligence theory in their instructional methods and techniques.

In the present study, teachers stated that the primary problem they faced while implementing multiple intelligence theory in their instructional methods and techniques was hardware and material shortages. Thus, it is necessary to remove these shortages for classroom teachers to implement multiple intelligence theory in their instructional methods and techniques. In this context, interactive (smart) board application initiated by MNE within Fatih Project, which aims active utilization of IT technologies in educational and instructional activities, could be considered as a sound and good application. Furthermore, teachers stated that it was difficult to determine individual intelligence areas of the students due to the classroom size and there was too much information in the curriculum, leading to an ability to implement multiple intelligence theory in their instructional methods and techniques. Thus, classroom sized should be reduced and the curriculum should be extenuated by removing unnecessary information to enable teachers to implement multiple intelligence theory in their instructional methods and techniques.

Based on the results of the present study, it could be observed that classroom teachers received theoretical training on multiple intelligence theory during their undergraduate education, however, they did not receive applied multiple intelligence theory training. Thus, in addition to theoretical training on multiple intelligence theory during their undergraduate education, teachers should be trained in applied multiple intelligence theory as well.

Based on the results of the present study, following recommendations could be made on applicability of multiple intelligence theory in primary schools:

✓   Hardware and material shortages should be resolved.

✓   Classroom sizes should be reduced.

✓   Student textbooks and activity plans should be designed based on regional differences and by taking environmental conditions into account.

✓   Branch teachers should instruct game and physical education, music education and visual arts education classes starting from the 1st grade.

✓   Teachers should be required to have at least master's degrees to improve academic knowledge of teachers, similar to the implementation in Finland.

✓   Schools should be open all day long and mathematical, visual, verbal, social, nature, physical and musical classes should be established outside hours of attendance and students should be directed to these classes based on their predominant intelligence areas, these classes should be supported with courses such as drama, chess, theatre, etc., and love for nature should be inspired to children who never experienced natural life in their lives in the city.

✓   Seminars should be organized to provide information for school administration, teachers, parents and students on multiple intelligence theory and multiple intelligence theory specialists who authored studies in the field should conduct these seminars.

✓   Courses such as musical education, game and physical education, visual arts education and free activities should be instructed in a manner to serve their original objectives.

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THE LEVEL OF CULTURAL SENSITIVITY OF THE HUMANITIES 1 CLASSES ON A FILM CONTENT DISCUSSION

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Abstract: Teaching for diversity is enjoying emphasis in university environments. In the heat of intellectual encounters, religious or other sensibilities could be offended. Classroom discourse could lead in other directions such as perceived attacks against a certain faith. As a social laboratory, the Mindanao State University—being the locale of this study, offers itself as a site of struggle for competing discourses. Thus, this study aims at knowing what is the general level of cultural sensitivity of these Humanities 1 classes of the said university in terms of 1) promoting freedom of expression, 2) crippling family and social issues, 3) expressing truthfulness and equality, 4) channeling classroom tension towards creativity, 5) fostering unity in diversity and 6) growing through cultural accountability. These students were asked to view a film. As the discussion went through, the levels of cultural sensitivity were rated. Twenty questions were grouped according to the six themes. In conclusion, classroom ratings suggest that classroom discussions are susceptible to clashes when students' cultures are offended. There seem to be a modicum of discourse about respect, tolerance, love and other virtues as a relative thing that is depending on the culture of the people involved. The classes showed varied results in dealing with the growing cultural accountability, ranging from 'highly a characteristic' to a 'more likely a characteristic' of the discussion.

INTRODUCTION

The arena of teaching language and literature in the past three decades has been crowded with such key concepts and watchwords like multicultural education, cross cultural studies, bilingual education, cultural competence or literacy, cultural awareness, and cultural diversity. Diversity, particularly, often creeps up in the rhetoric of bilingual education. Once thought as a curse or punishment according to tradition such as the building of Nimrod's Tower of Babel, diversity is increasingly recognized not only as a God-given condition of the human community, but as a societal asset or desideratum. Although there remain pockets of resistance to diversity and heterogeneity as the accepted norm, and movements to promote the dominant mainstream culture as the more effective strategy for advancing national character and unity, these are fringe protests against the rising tide of cultural diversity advocacy.

In language, communication and literature classrooms, the teacher who controls the choice of materials and the direction of class discourse is vulnerable to abuse of authority. In the heat of intellectual encounters, religious or some other sensibilities could be offended. Classroom discourse could lead in other directions—i.e. perceived attacks against a certain faith leads to a narrow interpretation of the text under consideration. For example, some Hindu or Islamic beliefs and practices may strike students from other cultural or religious backgrounds as too exotic and rigid. The discussion of potentially controversial topics could touch off a full-blown conflict in the classroom.

The issue of diversity is important in the University setting because the average 18-22 year old is in a stage of development where cultural and value orientation is being established. For the first time, these students find themselves in an environment where they must form opinions on a wide range of topics—sexual orientation, violence against women and children and other gender issues, political, moral and religious controversies—without worrying about what their elders will say. The university is the first place where they encounter people from diverse backgrounds, and where they leave their habitual groups behind. The university environment gives them the opportunity to explore ideas, and as has been observed, most students react well when they have the chance to examine and re-evaluate the opinions with which they grew up, and to develop themselves independently.

Instructional practices exert tremendous influence upon the students' intellectual and even moral-spiritual growth. The goal of a college education places an enormous responsibility on the faculty. This, however, begs the questions: Are teachers aware of the power they yield? Do they recognize how their hidden personal assumptions may insidiously slant to give their choice of materials and the direction of discourse such as what happened in the class of the literature teacher who declared the text anti-Islamic? Do they have enough cultural knowledge or awareness to steer discussion away from potentially explosive areas, or to avoid gaffes,

jokes, or commentaries that offend or demean a particular group? Do the teacher's choice of reading materials and way of structuring the class create or promote a particular ideology—e.g. Leftist or Communist—or propagate/favor a certain religion over others? As Felder and Silverman (1988) point out, any choice of materials presupposes the exclusion of other materials and any organization of the selected materials into a coherent syllabus involves decisions about which elements, topics, or themes to emphasize. The teacher's assumptions or perspective always finds a way of insinuating itself into the syllabus or instructional activities. There have been unverified reports about certain teachers 'proselytizing' or 'evangelizing' in class, and of others' strident denunciations of the status quo and oracular pronouncements of the victory of the people's struggle.

As a social laboratory—a testing ground for tolerance, accommodation, acculturation, and exercise in cultural awareness and cultural sensitivity—the Mindanao State University offers itself as a site of struggle for competing discourses, or a model of a kind of pluralist society built upon the unity-in-diversity idea. It has a mission to lead in the celebration of the rich diversity of human community and in the promotion of an education that builds bridges across cultures and traditions, toward a world of mutual respect and sharing, and broader understanding.

Statement of the Problem

Whatever progress the University has been making on the above-described front needs monitoring and appraisal, considering the intricacy and delicateness of the process that is responsible for modeling and guiding—the growing awareness of students toward tolerance for, acceptance and appreciation of diversity, greater cultural sensitivity and understanding. An inquiry of this kind is not only timely, but long overdue, in fact. It addresses an urgent and ever-present need in a pluralist, multi-ethnic and multicultural setting. This study sought answers to this question: *Regarding cultural sensitivity, what is generally the level of cultural sensitivity of the Humanities 1 Classes?*

Theoretical and Conceptual Framework

This study is anchored on James Banks' Dimension of Multicultural Education. Multicultural education is more than a change in the curriculum. As James Banks (1994) has pointed out to make education appropriate for all students, it is important to consider other dimensions as well. The way the athletics and counseling programs are structured, the teaching method used, lessons about prejudice, perspectives on knowledge—these and many more elements contribute to true multicultural education. The dependent variable is the level of sensitivity manifest in the classes involved in the study. How cultural diversity could be accommodated in a classroom being a focal point of interest in this inquiry, the culture(s) of the learners counted as an important variable. The cultural characteristics of a particular classroom should provide the measure for deciding how instructional techniques should be altered for ethnically diverse students.

Once cultural diversity is established as a reality in the classroom, an elicitor—the movie—shows how cultural diversity in a classroom creates challenges and difficulties for the students and the teacher and how the teacher responds with an appropriate intervention strategy to address the problem. The movie serves as a stimulus that directs and rivets students attention to the issue of cultural diversity.

In this study, there are several factors, which are encapsulated in the rating sheet used in this study. The Rating Sheet is an important tool that would determine the level of cultural sensitivity manifest in the classroom discussion. With the theories that comprise the backbone of this study serving as prompters, the researcher has come up with situations to be rated. These situations are clustered into six, namely:

  a. promoting freedom of expression;
  b. crippling family and societal issues;
  c. expressing truthfulness and equality;
  d. channeling classroom tension towards creativity;
  e. fostering unity in diversity; and
  f. growing through cultural accountability

Research Design

This study was primarily designed to see the general level of cultural sensitivity of the Humanities 1 classes in terms of the following clusters: promoting freedom of expression; crippling family and societal issues, expressing truthfulness and equality, channeling classroom tension towards creativity, fostering unity in diversity, and growing through cultural accountability.

This study was conducted at the Mindanao State University Main Campus in Marawi City. The University makes an ideal locale of the study on account of its multicultural or diverse student population. Since its inception, it has been operating as a social laboratory. Specifically, the study had for its population or universe the Humanities 1 classes during the 2nd Semester of School Year 2007-2008. Five Humanities 1 classes handled by different instructors participated in the study.

The design employed in this study is a combination of the qualitative and quantitative paradigms. Research instruments utilized in gathering the data for this study are the following: Humanities 1 Survey Questionnaire, Rating Sheet, and Interview Question. The combination of these data gathering methods ensured validity through triangulation. These instruments proved very useful in obtaining the needed data to support the thesis of this study. Efficiency and accuracy in gathering the data were the prime considerations.

The flow of the discussion was videoed from one angle only since the video camera should remain hidden from the students and the instructor. Aside from the video camera, a tape recorder was also used for the transcription of the flow of classroom discussion and during the interview. Although the use of the aforementioned instruments marks or guarantees a high degree of reliability, there is a possibility of data overload and the presence of machine being put-off.

In this study, the respondents did not analyze the film in terms of its technical features. Its cinematography was not evaluated. Instead, only the core content or film message and how it elicited the cultural aspects among learners were discussed during the rating. Only the level of cultural sensitivity of the classroom discussion was discussed.

Results and Findings

In evaluating film content discussion in the culturally diverse Humanities 1 classes for the second semester, AY 2007-2008, three raters observed five Humanities 1 classes. There are 20 questions in the rating sheet. The 20 questions, though ordered and sequenced not according to proximity of themes, are grouped into six clusters: (1) promoting freedom of expression; (2) crippling family and societal issues; (3) expressing truthfulness and equality; (4) channeling classroom tension towards creativity; (5) fostering unity in diversity; and (6) growing through cultural accountability. There were four levels of rating the classroom, namely:

1= never a characteristic of the classroom discussion;
2= likely a characteristic of the classroom discussion;
3= more likely a characteristic of the classroom discussion; and
4=highly a characteristic of the classroom discussion

THE SIX CLUSTERS

CLUSTER 1: **Promoting Freedom of Expression**
Question1.The classroom discussion encourages students to participate openly in the class discussion.
Question2.The classroom discussion encourages students to listen and value comments.
Question3.The classroom discussion allows students to voice out their feelings when their culture is offended.

With its emphasis on richness and strength through variety, cultural diversity has been widely and enthusiastically endorsed and celebrated in western countries and now in the Philippines. Awareness of different cultural norms and sensitivity to the needs and concerns of people is the primary concern. Such concern is addressed if all of the students are given the chance to express their own selves and are free to represent their own culture.

To express oneself in a class filled with classmates of different cultures and religions, beliefs and experiences, is a great challenge to anyone who feels that his culture is at risk. Whatever the case, these students need to be encouraged to participate freely in the discussion without feeling that their culture is superior to, or below the others'. Each comment made by a student is something to be valued because within that comment is embedded a string of beliefs, and cognitive values that had been built into the student's schema over a period of time.

When a particular culture is offended, these students who represent that culture must be given the chance to speak up and voice out their feelings. They must be able to feel the objective and unbiased support of the teacher who is an authority in the classroom. They must know that unjust and unpleasant things can be changed. This support can be manifested by enabling the students involved to build a healthy self-identity and empowering them to resist bias.

Generally, there is a small chance that the Humanities 1 classes do not highly promote freedom of expression. There is, within the class, a trace of resistance to speak up because of the fear of being laughed at or ridiculed. Schumann names this language ego, one of the psychological or affective factors that could hinder acculturation, the *sine qua non*, for acquiring the target language. In one of the classrooms rated, a student become reticent and showed great reluctance to stand up when asked about the conflict she had experienced because of cultural differences. She was afraid because that conflict involved a student whose culture is represented by the majority in that particular class. She had serious reservations about revisiting that experience and rekindling a similar conflict by provoking strong reactions from members of the class. She considered avoidance or evasiveness as a safe position, that is, the most appropriate communication strategy.

CLUSTER 2: **Crippling Family and Societal Issues**

Question4. The classroom discussion allows students to voice out or talk about their own experiences as influenced by their social identity and cultural background.

Question5. The classroom discussion talks about respect, tolerance, love and other virtues as a relative thing depending on the culture of the people involved.

Question19. The classroom discussion reveals an awareness of cultural misrepresentation of any group found in the movie.

There are various ways in which the family impinges on school readiness. They include, but are not limited to, the home environment, style of parent-child interaction, and family's attitudes toward school and learning. Parents who provide an array of enriching cultural and social experiences during preschool and early elementary school years have children who perform better on achievement tests and are rated as more task oriented by their teachers (Bradley et.al, 1988).

Cluster 2 pertains to crippling family and societal issues. The fourth question is concerned with allowing students to voice out or talk about their own experiences as influenced by their social identity and cultural background. It was found out that the Humanities 1 classes are highly characterized by this kind of situation. Generally, among the five classrooms observed, it turned out that these classes belong to scale number two, which means the feature or situation is just likely a characteristic of the classes involved. This is low on the scale. In other words, these classes almost never talk about respect, tolerance, love, and other virtues as a relative thing.

However, this does not indicate a poor showing, or considerable ambiguity and uncertainty. It should not be taken to mean that these students never really talk about respect, tolerance, love, and other virtues. Perhaps they did but they talked about it as not relative concerns but as universal virtues and they tried to attach legalism to these based on their family and societal influence.

This crippling family and societal influence is clearly seen in the subtle and understated description of the Humanities 1 classrooms. Although, the result of the rating reveals that the items under Cluster 2 are more likely characteristic of the classrooms observed, the message clearly shows that the way the family raised the children and the kind of environment affect the way students interact inside the classroom. This is felt in the dynamics of classroom discourse.

For example, one student in Humanities 1 was observed, during the classroom discussion, to be very aggressive in presenting her ideas. She always had something to say on every issue raised in the class; in other words, she was assertive, vocal, or outspoken and self-confident. She reacted positively to criticism and always considered the points of other students.

Another example was this student who, as his demographic profile revealed, is a son of a highly respected figure in MSU. He exuded confidence and showed willingness to be corrected. He was careful with his words and gave very detailed explanations. These examples show that children of parents who are responsive to their children's needs through their active participation and assistance demonstrate socially acceptable classroom behavior. Upbringing or the kind of environment provided by the family is a determining factor. It accounts for behavior flexibility, possession of coping strategies, and ability to acculturate, adapt, and accommodate in a culturally diverse setting.

On the other hand, there were students who constitute another group. Manifestations inside the classroom can be attributed to many factors that come into play. First, students whose family life is in turmoil suffer the effects of stress in several ways. Parents who are under pressure are severely hampered in their ability to help their children with schoolwork. Students themselves internalize family stress, and this damages their self-esteem and impairs their ability to learn. Their "psychological' wounds or scars leave them handicapped or maladjusted in one way or another.

CLUSTER 3: **Expressing Truthfulness and Equality**

Question6: The classroom discussion is mediated by the teacher when some students ignore the viewpoints of others or when one cultural group monopolizes the discussion.

Question9: The classroom discussion balances criticism and praise.

Question17: The classroom discussion shows that the speaker establishes eye contact, thus expressing truthfulness and sincerity.

Question10: The classroom discussion engages both verbally assertive and the less assertive ones.

In the classroom, there were instances when one student dominated the class or ignored the viewpoints of the other students. There were thus instances when one culture was given the center stage or unintended prominence in the class discussion. It is a commonplace—i.e, some monopolizing the class. Sometimes, a zealous student who dominated the discussion did not really intend to lord it over the class. Perhaps, the student just liked to articulate some idea he was passionate about and occasionally got carried away. This student's

monopoly of the discussion may inhibit the timid or timorous students in the class, or dampen the enthusiasm of those less assertive, resentment could not set in.

However, there were also students who did not want to contribute their views because of their cultural upbringing. There are cultures—e.g. Confucianism-influenced societies—where children are taught not to speak to elders because it is a sign of disrespect, or to engage in an exchange of views with other students because such agonistic tendency is feared to be seen as boastfulness or braggadocio. In some Asian societies, students listen to their teacher's lectures, in kneeling position. Culture thus expresses itself in many different ways.

In schools in the United States, timidity or silence of Asian students is only now beginning to be understood in the light of those students' cultural background. The teacher should not confuse silence with lack of knowledge or skill capability when dealing with culturally different groups. Such minority group students may not want to take the risk of offending by speaking up in a whole class discussion. To help solve this problem, small group discussions may be tried to encourage other groups to speak up. Silent or reticent individuals have been observed to open up that kind of learning context. A teacher's repertoire of classroom strategies or techniques must be rich enough to meet the diverse needs of a CLD class.

In one Humanities 1 class, a teacher uttered a negative comment to students who were not very open with their ideas. That bluntness did not help the situation; the students refused even more to speak They withdrew further into reticence and further into their shells. Instead of helping the students pass through a cultural barrier, the teacher, who is in authority, reinforced the students' belief that they have no voice in the classroom. The hostile comment raised the students' affective filter.

CLUSTER 4: Channeling Classroom Tension towards Creativity

Question11.The classroom discussion recognizes students who raise their hands or students who   volunteer   to participate in class regardless of their cultural background.

Question12. The classroom discussion portrays a warm atmosphere by calling students by name with correct pronunciation.

Question13. The classroom discussion allows the giving of feedback and the asking of questions.

Question14. The classroom discussion permits the visible stereotyping of a particular group in the movie.

A culture is fluid and ever changing; it is never static. Cultures are dynamic, constantly evolving and influencing each other as they come into contact. Elements from the past are continually being combined and recombined with new elements from the present. A culture is something to be participated in rather than something imposed. All things that make up the culture should be considered in the classroom.

Usually tension builds up when conflicting beliefs and ideas surface and collide. The teacher must know how to respond to such a volatile situation. He or she must employ some strategy to make students involved in the fray calm down, and channel this tension towards creativity. How to effectively do this is a challenge for every teacher in Humanities 1. If a student feels restricted to a particular art activity, and wants some space, the teacher must provide a way for him/her to use his/her creativity for something fruitful. In cases of tension caused by classroom discussion, the teacher needs to be creative in restoring sobriety and order like looking for the positive thing in every situation.

This attests to the subject students' expression and communication of their views with conviction. The use of nonverbal communication, specifically, eye contact to reinforce verbal communication lends credence to utterances made by interlocutors.

As the Humanities classes were observed and rated, the result is perturbing enough. It would appear that the teachers do not as yet know their students well enough to be able to call them by their names. Shakespeare's famous sage advise—"a rose is a rose is a rose called by any name"—does not apply in this context. A name is part of students identity, and sense of identity is strengthened when one is called by his/her name; it is a form of recognition. Every student needs to be recognized. It is a capital offense for a teacher to treat any student as a face in the crowd, or worse, as mere statistic.

CLUSTER 5: Fostering Unity in Diversity

Question20: The classroom discussion has come up to a unified conclusion about the issues raised.

Question7: The classroom discussion leads to a conclusion that would put into the limelight a certain culture.

Question18: The classroom discussion uses examples varied enough to present various cultural groups in the classroom.

A question—which is better, cultural unity or diversity—was raised in a particular discussion. Indeed, it made great sense. The question rivets attention to the concept of multicultural education. Multicultural education, says Carreon, et.al (2006), not only draws content, concepts, paradigms, and theories from specialized interdisciplinary fields such as ethnic studies and women studies. Grounded in the ideals of social justice, educational equity, and a dedication to facilitating educational experiences in which all students reach their full

potential as learners and as socially aware and active beings, schools play an essential and crucial role in laying the foundation for the transformation of society and the elimination of oppression and injustice.

Among the Humanities 1 classes, there seemed to be an argument to have a unified conclusion on the issues presented. The discussion in itself was very delicate and potentially headed for troubled waters especially since it dealt with individual experiences due to cultural differences. The teacher was very cautious in approaching the matter; care was observed by avoiding calling from only one cultural group. However, it was noticed that, generally, students coming from outside Marawi City, that is, those who did not grow up in the Province of Lanao del Sur, usually did the talking and showed willingness to risk self-disclosure. This observation may touch on the issue of putting a particular culture in the limelight because the culture of these students, their side of the story and their opinions on particular matter, are oftentimes the ones heard. Other cultures are excluded from the discourse, or relegated to the background.

CLUSTER 6: **Growing through Cultural Accountability**
Question15: The classroom discussion prompts students to provide a fuller answer or explanation before moving on to another topic.
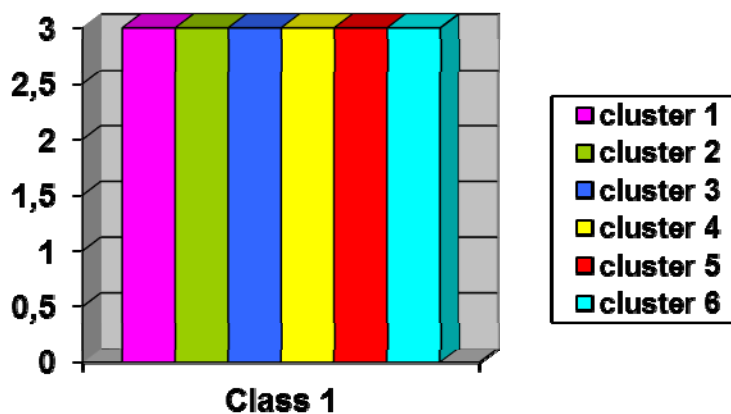Question 16:The classroom discussion offers time for explanation why a comment is offensive or insensitive.
Question 8: The classroom discussion discourages distasteful remarks even those made jokingly and does not allow accusing comments to pass unnoticed.

This cluster is about being responsible for every action that a student does in the classroom. For every answer that he or she gives, an explanation must follow so that he or she may be understood fully. Jokes and distasteful comments must be avoided because even if done with no intended malice, these may be perceived negatively as these are often relative to cultures. Cultural slurs engender ill feelings between groups and may cause dissonance a war of words.

It is important that students and teachers offer time for explanation why a comment is offensive or insensitive so that such a comment can be avoided in the future. In the Humanities 1 classes, this could be seen through the way the teacher and students handle their responses. In a particular classroom situation in one Humanities class, two students were going full steam ahead in their defense of what they believed was the real cause of the conflict in the movie *Freedom Writers*. There was a commotion when these two students started raising their voices. The teacher stepped in to mediate and offered each of them equal time to explain their sides. Order was restored and the mood became less adversarial or confrontational. The six clusters finally explained in detail, it is important to know that the above clusters are color coded and the same color coding is applied to the table and graphs that follow.

Figure 1. A Graph Showing the Classroom Rating of Class 1

The graph above shows the characteristics of Class 1. As seen here, in all aspects of cultural sensitivity, Class 1 belongs to the 3rd level in the scale of cultural sensitivity. This means that Class 1 is more likely characterized by the classroom description. As observed during the classroom discussion, a good number of students participated. However, there were also some who kept silent and just listened to those who were very vocal or outspoken.

Class 1 is a large class. As observed, the teacher instructed the students to form into groups in preparation for the oral examination. The instructor made clear to the students that the oral examination would be graded that was why as each student recited, the spontaneity was disturbed because the instructor would always ask for the name. Management in a large class is indeed difficult. It is a real challenge to the teacher.
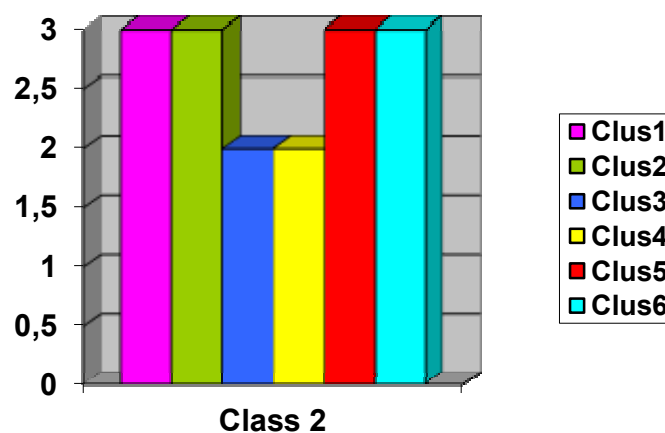
During the class discussion, each group was given a question to answer. In this case, two groups have the same questions so that there would be exchange of differing points of view. The first question was about the

greatest problem in the story. The first group identified racial discrimination as one of the major problems in the movie in addition to poverty and gang involvement.

The other group insisted on lack of respect for each other as the main reason for the conflict in the movie. They vehemently stood by their answer by challenging the other group, asking the latter what really was the root of racial discrimination, which, as they contended, is lack of respect. As the discussion progressed, the students involved in the discourse eventually concurred with Group 2's answer. There was a hint of cultural insensitivity when a particular group did not listen to the reasons of the other members of the class; such dismissive attitude tended to fuel or stoke heated discussion.

For the class, the primary cause of the problems dramatized in the film is the kind of family background that the students have. Family background or relations at home have a debilitating effect, hindering progress in school. The Class 1 students were sensitive or perceptive enough to note that almost, if not all, students have dysfunctional families. According to Class 1 students' synthesis of the discussion, the family is indisputably the major contributing factor in the aberrant behavior and delinquent showing of the characters in the class of Ms. Gruwell. The students of Ms. Gruwell suffer from identity crisis, lack of a sense of direction in life, or aimlessness, lack of a sense of belonging, and unacknowledged longing for love and appreciation.

Figure 2. A Graph Showing the Classroom Rating of Class 2

Class 2 is rated 3rd in four clusters while in the other two clusters, it was ranked 2. On the scale of 4, where 4 is the highest positive value and 1 is the lowest, this class is more likely characterized by the issues or features raised in each cluster and likely characteristic of the others. The clusters that were identified in the 3rd level are clusters 1, 2, 5 and 6.

This class is composed of 80 students, hence, is the largest of all the large Humanities 1 classes. Handling such a big number of students requires mental agility and adroitness; in short, consummate management skills on the part of the teacher. Like any other Humanities 1 classes, the students are diverse in terms of religion and cultural background. They also have a high percent of diversity in terms of language used at home.

As observed, the class had a group discussion of what the movie is all about. Students were asked to report to class their answers to the five questions that were given to them. The teacher asked the students how long it would take them to answer the questions. No one answered. She kept on asking the same question until she realized that she had not given the time yet.
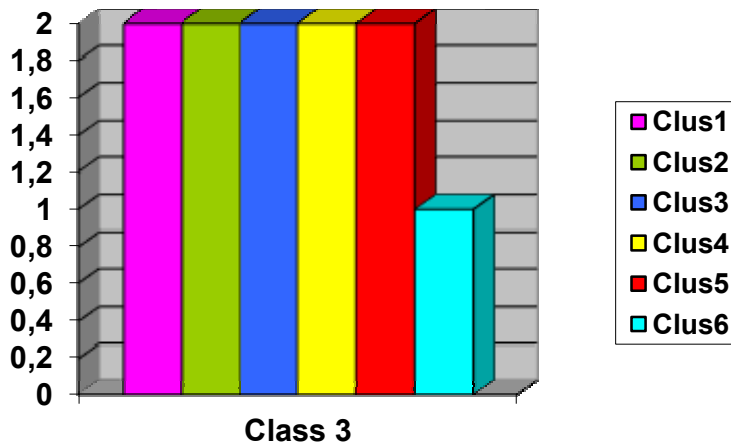
During the class discussion, the instructor interrupted every time a student recited. Although, the teacher's intention was good, the student talk lost its spontaneity. For the whole duration of the classroom discussion, virtues like tolerance and compassion were raised as the things essential to solving the problem of racial discrimination, different perceptions and cultural differences.

There nearly was furor when one student narrated her unpleasant experience which was caused by cultural differences. She told the class about the unfair treatment of certain groups of students. She had this grievance that she wanted to air: "Non-Muslim" students who were first in the line, during enrolment when students would queue up for the processing of papers, were denied prompt service because "Muslim" students were more favored or accorded special treatment.

Another case involves a conflict that actually erupted inside the classroom. One Meranao student got involved in a very serious verbal encounter with a Christian student. That discussion did not end well. Although the experience of issue is only the experience of a friend of a student in Class 2, still the classroom atmosphere was surcharged with tension. In an attempt to ease the tension, the teacher cracked a joke. It worked, the tension subsided.

       The teacher in Class 2 spoke Visaya or the vernacular, and evidently some of the students did not understand her. This language barrier excluded them from the discourse. This particular teacher code switched almost all the time, causing other students who form the majority, problem with comprehension. They felt shut out.

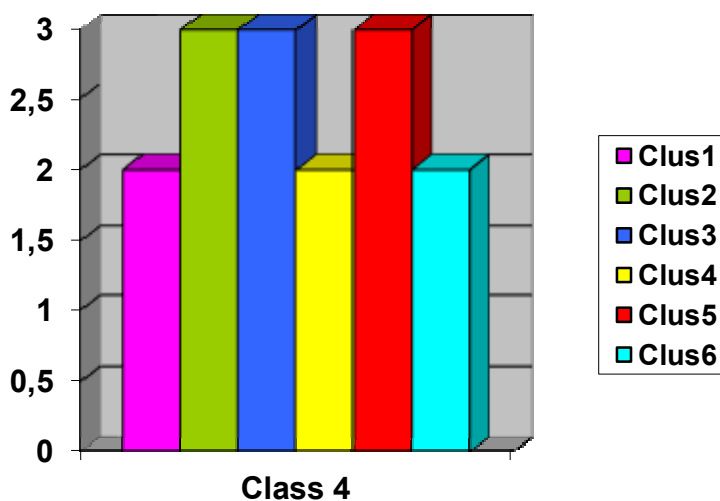**Figure 3. A Graph Showing the Classroom Rating of Class 3**

       As seen in the above graph, the highest scale they achieved is 2, meaning they are likely characteristic of the classroom discussion. In cluster 6, the class scaled lowest, that is 1, which means that cluster 6 items are never characteristics of the class. It is very important to remember that this cluster is about growing through cultural sensitivity. If the class does not accept responsibility for their own individual actions and speech, the possibility of students getting drawn to heated arguments and real clashes is great. Inflexibility or intransigence would characterize members of this class.

       Class 3 is another large class. The class was also tasked to answer the five questions but too much time was allotted for that. Consequently, the class discussion was not as exhaustive as that in the other classes.

       Another problem that emerged during the class discussion was the monopoly wielded by one student who sounded very fluent in English. He was obviously carried away by his enthusiasm, aided by his good command of the language. The effect of his impressive articulateness on the students is that the latter found him intimidating and so were reluctant to speak up. They felt cowed by the fluency of their voluble classmate; there was unconscious fear that they might suffer by comparison. It was unintentional on the part of the former. As he said, "there is no monopoly of ideas here," meaning that he did not have any intention of dominating the discussion, his actions, however, seemed to believe his statement. His nonstop gab, however, did not allow others to voice out their thoughts.

       The teacher could have stepped in as facilitator or moderator and encouraged others to participate in the discussion. Such a situation calls for firm intervention.

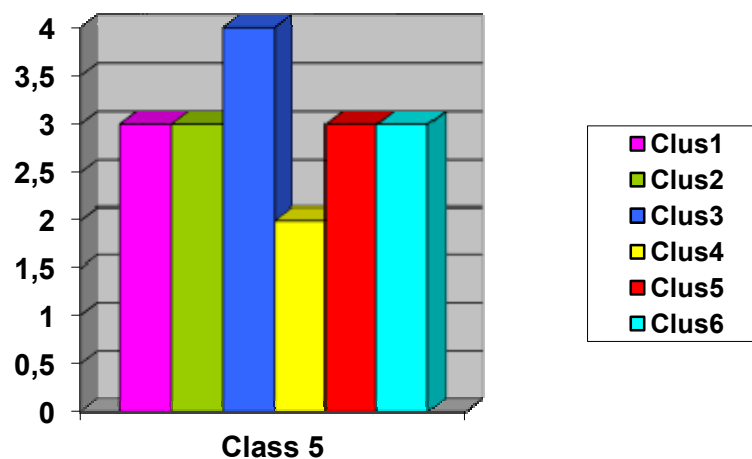**Figure 4. A Graph Showing the Classroom Rating of Class 4**

The graph reveals that Class 4 ranges from 2-3 which means this class is likely characterized by the items or categories used to rate classroom discussion. Class 4 was noted to be dominated by a few students who belong to the upper 5% studentry in terms of academic performances or status. These students were articulate and certainly dominated the class discussion.

The teacher of this class set the mood for the class discussion. They reviewed the content of the film. Several factors like sad and painful experiences, misunderstanding, social deprivation, and fight for territory over race and culture and pride were brought up. To solve the problem dramatized in the story, the class pointed out the importance of open communication.

During the discussion, the students were asked to choose who among the characters in the movie did they like best. Erin and Eva are two of the major characters chosen. Students presented reasons for their choice during the deliberation. With regards to the experience that the student have concerning cultural differences, one student pointed out that he had not experienced conflict because he has always respected people of different beliefs and culture.

Figure 5. A Graph Showing the Classroom Rating of Class 5

The graph shows a diverse scale in terms of clusters. Class 5, among the classes, is the only one that reached the scale 4 in the general rating. Class 5 is another large class. The teacher emphasized what Eva said in the movie, "I don't know you, why should I respect you?" The students saw at once what the problem really is. It takes a heart to really touch a heart. Although this was a good conclusion, the students were not able to induce the concept because before they could, it was given directly by the teacher.

Moreover, the teacher dominated half of the session. The teacher talk took up much time, half of which was allotted for classroom discussion. The students were asked to choose one virtue that would be the best solution to the problem. The students reacted when the teacher said that after they have chosen the virtue, they would debate and defend this in class. From this reaction could be deduced that those students were not yet ready to open up especially in a large class. Usually, in a large class, reluctance due to a myriad of causes is the usual problem why no meaningful discussion occurs in the class.

Level of Cultural Sensitivity as Reflected through Student Interview
Figure 6. A Graph Showing the Classroom 1 Discourse Rating through Student Interviews

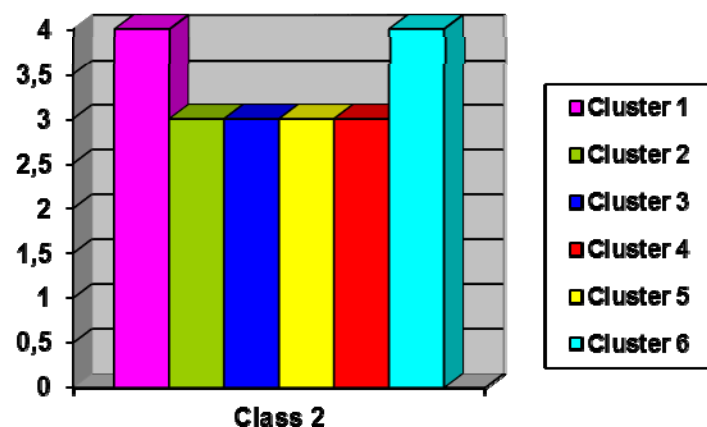Generally, scale 3 still works as a fitting description of the classroom. This means that the students viewed the classroom discussion as sensitive enough. Perhaps, for some of the students, they may not have been able to participate openly but they were given chances to talk.

One particular student commented during the interview that he felt comfortable and confident to express all his ideas about a certain culture that was discussed during the grouping. Basically, he behaved this way because he admitted that with regards to culture, he is very sensitive. Another student said that, at first, she felt very awkward because she was with students who were not so close to her. She just drew confidence from the presence of her co-majors.   Another interviewee who belonged in this class claimed that he loves to recite inside the classroom. He is one of the students who relished expressing opinions without minding what other people would say. This is plainly insensitivity.

On the other hand, there was an interviewee who commented that if she had just focused on the negative side of being inside the diverse classroom, she would really react to the things that her classmates said. It was the language barrier that affected her most. According to this interviewee, some students use "deep" Visayan words, which are sometimes foreign to her, and the teacher did nothing to facilitate or mediate the situation.

Another interviewee from Butuan, a Surigaonon by birth, said that she is still a bit confused about the traditions of the Muslim peoples. She admitted that she also had experienced conflict because of cultural differences in the cottage where she stayed before. The experience left her with a hang over of the effect of that conflict. This accounts for hesitation or reluctance to mingle with other students who come from backgrounds different from hers.

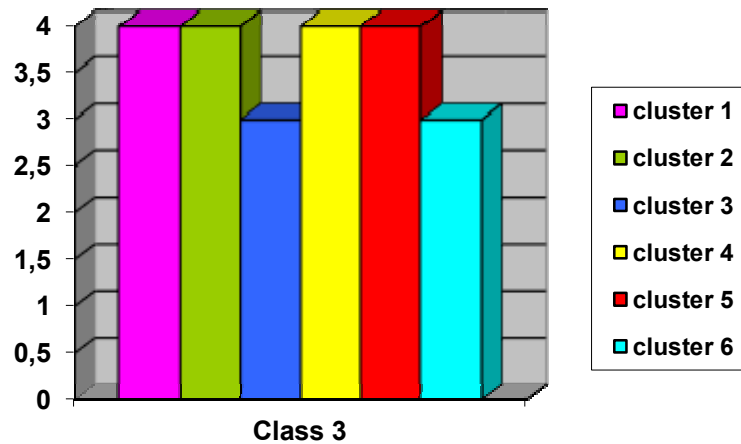**Figure 7. A Graph Showing Classroom 2 Discourse Rating through Student Interviews**

The class has still a general rating of 3, meaning the classroom discussion is more likely characterized in its discussion by the features grouped into six clusters. One interviewee said that what made it difficult for her to participate in the class discourse is her awareness of the different personalities of her classmates, which have been molded by different family, societal and cultural differences.

Another interviewee said that the diverse faces and attitudes made her uneasy in the classroom. She also found out that it was difficult for her to approach instructors who do not have the same culture as hers. Although in the discussion of the movie, no explosive clash erupted, it was evident that they were not able to express their thoughts freely.

However, one interviewee expressed her positive reactions to the class. She did not feel any tension inside the classroom even if she is a Christian. When asked for the reason behind such calmness, she said that she is already used to the Maranao culture because she grew up in the MSU. Her mother is an MSU employee. With regards to the teacher, she said she was also very comfortable because she has known the teacher from childhood. Familiarity explained her calmness.

One student from this section said that it was not easy for her to participate because whenever she was about to give her idea, the boy at her back would finish the sentence for her. Probably, the boy comes from a culture that has its own discourse rules—e.g. turn-taking, turn-grabbing, etc.—and these conflicted with the discourse rules operating in the culture in which the interviewee grew up. That was lack of respect and sensitivity to the feeling of the interviewee. It was also very difficult for her because only a few of the class participated in the classroom discussion.

**Figure 8. A Graph Showing Classroom 3 Discourse Rating
through Student Interviews**

Although this class has a visible high result in the rating, there are minute details that were revealed during the interview that accounted for the effect of cultural diversity in the classroom.

An interviewee said that she was comfortable in the class but she also said that this is so because she was talking only to her co Meranaos. To restate, she was afraid or uncomfortable dealing with members of the class who do not belong to her culture. In fact, she said that she felt shy every time she attempted to talk to her non-Meranao classmates.
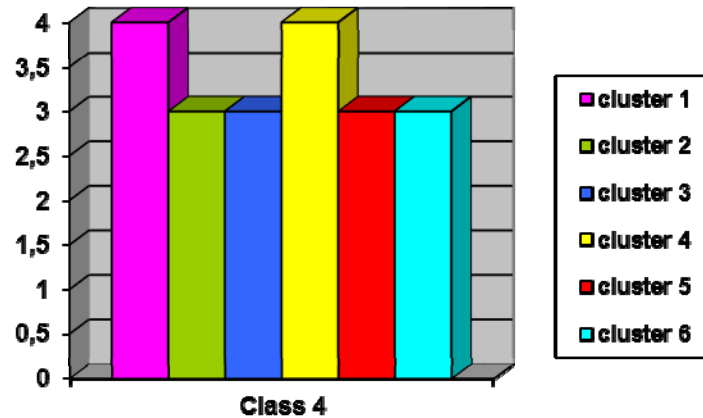
Another interviewee said that during the classroom discussion, he was sort of defending his own education. By that, he meant that he had to express what he thought was right and what he knew was appropriate. He was so infuriatingly confident that his classmates were turned off and annoyed and all he got was the message to stop talking, which the class got across through gestures.

Still another said that she felt just fine during the class discussion because she did not speak in front of the class. She was enjoying the comfort of her seat. She was not able to see the sparks flying between the two students in their class during the heated exchange of words.

Moreover, another interviewee said that it was amazing being able to express what was gleaned from the film they had just viewed. This some interviewee emphasized that the major reason why some of the students were unable to express their opinions was the difference in cultural affiliation. In her case, for example, her cultural background was different from that of her instructor. This explains why she had a hard time communicating with her nonverbally although, generally, she had a good and meaningful experience during the class discussion. The diversity in the classroom has both positive and negative effects on the part of the students: positive because the students mostly the risk-takers, challenged to give what they think is best and negative because, awareness of classroom diversity, had a dampening effect and students, would rather sit down and remain quiet. The specter of divergent perspectives or viewpoints is in itself intimidating. Students do not, perhaps, relish the idea of being drawn into a verbal fencing or clash of opinions.

Another respondent spoke about his experience during the class discussion. He was the one who talked about an encounter he had someone. He also admitted that there were times when he felt threatened by those people who have different cultural and religious backgrounds. He said prudence has taught him to respect their beliefs and traditions.

Figure 9. A Graph Showing the Classroom 4 Discourse Rating through Student Interviews

It earned a "4" rating for two clusters out of the six. This means that the class is more likely characterized in its classroom discussion by those features. There are some reasons for this and these were revealed by the interviewees themselves in their own observations during the classroom discussion.
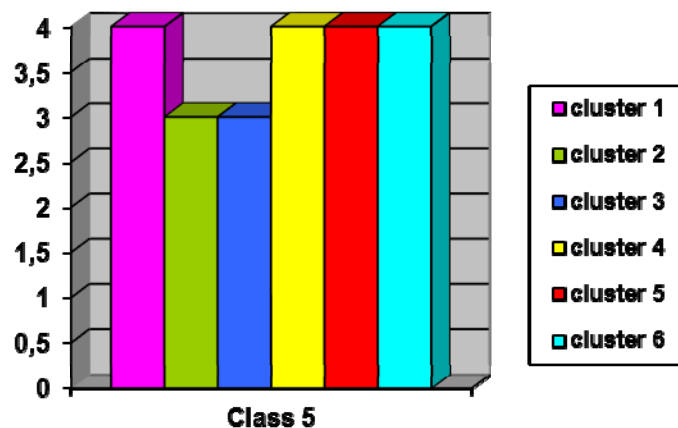
One interviewee said that though she is not pessimistic about this, she sometimes felt some difficulty in participating in the classroom discussion. Nevertheless, she felt she did not have much of a choice and did participate because she must earn a grade. But in truth, she would rather sit down and not talk. She was not used to interacting with others and she closed with the words that if the person is good to her, she would reciprocate and be good to the person, too. That was once person who subscribes to the Golden Rule, or reciprocity as a desideratum.

Moreover, one interviewee said that there was no racial discrimination but admitted that she feared expressing her thoughts, ideas and feelings. She said that it was all about how to open the minds of her classmates to accept her ideas on issues discussed, especially on cultural differences. Language was not really the big barrier that hindered her from communicating. However, she was hesitant to express whatever she thought and felt for fear of being rejected or ridiculed.

One student said that although the questions were not very difficult, still she felt uneasy during the classroom discussion because the answers required thoughts from the heart, the unveiling of one's self before the crowd. That, for her, was very difficult.

Another interviewee who also belonged to this class said that she felt that the movie they had watched depicted a situation similar to the situation that they have inside the classroom. Although there was really no gang violence inside a Humanities 1 class, the class is described as a salad bowl in which different cultures converge. According to this interviewee, though she was in a diverse culture, she did not experience conflict because her parents raised her well and taught her to respect people of different cultures. The vital role of the family as a major determining factor in preparing one for dealing with students with different cultural backgrounds is given special emphasis.

Figure 10. A Graph Showing the Classroom 5 Discourse Rating through Student Interviews

The class' rating ranged from scale 3-4. One particular student said that she was slightly nervous during the class discussion. It was difficult for her because some of her classmates were not interested and attentive. She sensed that her classmates were not very friendly, and this caused her some difficulty in participating in the classroom discussion.

A transferee from Central Mindanao University said that he could relate to the film that they were required to watch. At first, he was hesitant to answer the questions given to them during the class discussion because he was afraid of the instructor. However, he thought of his classmates who had the guts to talk and air their opinions, and he felt more relaxed. It was the classroom environment or climate that emboldened him to talk.

Further to that, an interviewee said they were treated equally in their class. She felt comfortable though at first she was afraid and felt shy to express her opinions. Later she realized that there was nothing wrong with ventilating and sharing ideas. Accompanying this response is the idea of a fear attack similar to anxiety attack every time she engaged in discussion. It is only a low affective learning environment that can motivate a student with high a filter to participate in the classroom discussion.

Still, another respondent who belonged to this class said there were topics raised that put a particular culture in the limelight, in effect relegating the other cultures to the background, or conveying the impression that the latter are inferior. She said that one of her classmates too hastily generalized about the Maranaos sounding like they were fighting when they converse because of the shrill pitch and loudness. Her classmates have observed the same. She seemed oblivious of the possibility that she could have offended the Maranao students in that class. She further said that she felt nervous because of the existing diversity in the classroom. She was afraid she might say a word that could hurt or offend the others. There is a paradox here. She declared being apprehensive about her words offending others, but there was no awareness of the gaffe she committed when she made that earlier remark about the Meranao's speech style.

CONCLUSIONS

From the findings of the study, it is concluded that generally, the classroom discussion is highly characterized by the items grouped into clusters on the rating sheets—e.g. promotion of expression, fostering unity in diversity, channeling tension towards creativity, etc. During the interview, it was revealed that the students had generally experienced a positive/reinforcing and culturally sensitive classroom discussion.

IMPLICATIONS

From the above findings and conclusions, it is abducted that the classroom discussion revealed that to be able to measure the level of cultural sensitivity of the teacher-student and student-student interactions, they must be engaged in a meaningful talk or discussion. Teacher-fronted discussions will not work well in a diverse classroom, because these do not allow room for dialectics or dialogues and the negotiation of meaning these exchanges entail.

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Rating Sheet

Section: Humanities 1 _____   *Direction: Rate the classroom discussion according to the following:*

(Put a check mark (✔) in the box that best describes your answer to each item.)

1=never a characteristic of the classroom discussion

2=likely a characteristic of the classroom discussion

3=more likely a characteristic of the classroom discussion

4=highly a characteristic of the classroom discussion

	1	2	3	4
1. The classroom discussion encourages students to participate openly in the discussion.				
2. The classroom discussion encourages students to listen and value comments.				
3. The classroom discussion allows students to voice out their feelings when their culture is offended.				
4. The classroom discussion allows students to voice out or talk about their own experiences as influenced by their social identity and cultural background.				
5. The classroom discussion talks about respect, tolerance, love and other virtues as a relative thing depending on the culture of the people involved.				
6. The classroom discussion is mediated by the teacher when some students ignore the viewpoints of others or when one cultural group monopolizes the discussion.				
7. The classroom discussion leads to a conclusion that would put into the limelight a certain culture.				
8. The classroom discussion discourages distasteful remarks even those made jokingly and does not allow accusing comments to pass unnoticed.				
9. The classroom discussion balances criticism and praise.				
10. The classroom discussion engages both verbally assertive students and the less assertive ones.				
11. The classroom discussion recognizes students who raise their hands or students who volunteer to participate in class regardless of their cultural background.				
12. The classroom discussion portrays a warm atmosphere by calling students by name with correct pronunciation.				
13. The classroom discussion allows the giving of feedback and the asking of questions.				
14. The classroom discussion permits the visible stereotyping of a particular group in the movie.				
15. The classroom discussion prompts students to provide a fuller answer or explanation before moving on to another topic.				
16. The classroom discussion offers time for explanation why a comment is offensive or insensitive.				
17. The classroom discussion shows that the speaker establishes eye contact, thus expressing truthfulness and sincerity.				
18. The classroom discussion uses examples varied enough to present various cultural groups in the classroom.				
19. The classroom discussion reveals an awareness of cultural misrepresentation of any group found in the movie.				
20. The classroom discussion has come up to unified conclusion about the issues raised.				

Interview Rating Sheet

Direction: For each interview portion, rate the classroom discussion according to the following:
(Put a check mark (✔) in the box that best describes your answer to each item.)

        1=never a characteristic of the classroom discussion as revealed in the interview
        2=likely a characteristic of the classroom discussion as revealed in the interview
      3=more likely a characteristic of the classroom discussion as revealed in the interview
      4=highly a characteristic of the classroom discussion as revealed in the interview

	1	2	3	4
1. The interview reveals that the classroom discussion encourages students to participate openly in the discussion.				
2. The interview reveals that the classroom discussion allows students to voice out their feelings.				
3. The interview reveals that the classroom discussion allows students to voice out or to talk about their own experiences.				
4. The interview reveals that the classroom discussion talks about respect, tolerance, love and other virtues as a relative thing.				
5. The interview reveals that in the classroom discussion, the teacher mediates the classroom discussion equally.				
6. The interview reveals that both the verbally assertive students and the less assertive ones are engaged in the discussion.				
7. The interview reveals that the classroom discussion allows the students to participate comfortably in the classroom discussion.				
8. The interview reveals that classroom discussion allows the giving of feedback and the asking of questions.				
9. The interview reveals that the classroom discussion highlights a certain culture.				
10. The interview reveals that the classroom discussion has come up to a unified conclusion about the issues raised.				
11. The interview reveals that the classroom discussion prompts students to provide a fuller answer or explanation before moving on to another topic.				
12. The interview reveals that classroom discussion discourages distasteful remarks even those made jokingly and does not allow accusing comments to pass unnoticed.				

(Please affix your signature above your name.)

_____
       Rater

TOWARD A COHERENT CURRICULUM FOR SECONDARY CLINICAL TEACHER PREPARATION

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Abstract: In response to a national call in the United States for clinical-based models for teacher preparation, this university partnered faculty from teacher education, history, and English with teacher mentors from two partner high schools to design a clinically based teacher preparation program for secondary social studies and English teacher candidates. The relocation of teacher education from academia to local high-school classrooms necessitated a challenging yet committed posture grounded in constructivism and empowered through inquiry. This article 1) shares formative findings from three semesters of implementation, 2) summarizes what teacher educators learned about designing curriculum components for a clinical model, including instructional rounds, an inquiry project, and reflective journals, and 3) describes some challenges of implementing a clinical model for secondary teacher candidates. This study of one university's process of creating a curriculum for clinical teacher preparation demonstrates the importance of a collaborative, inquiry-based approach both for curriculum designers and teacher candidates. The most important lesson learned for clinical curriculum design is that courses and lessons designed for a university classroom on a university campus are ill-fitted for the immersion experience afforded by a clinical teacher preparation program. Designing a clinical curriculum required re-imagining how theory and praxis can be seamlessly blended in a coherent, two-semester program delivered on-site in a partnering school. The authors demonstrate how new elements, such as instructional rounds, and re-structured elements, including research projects and reflective journals, are most successful when configured as a cohesive, progressive process of inquiry into the practice of teaching.

INTRODUCTION

In 2010, the National Council for Accreditation of Teacher Education (NCATE) in the United States published a policy brief on clinical education, drawing attention to the need for clinical teacher preparation programs in all areas. In fall 2013, in response to NCATE's call for reform, two colleges at a mid-sized university in the southeastern United States collaborated to create a clinical model for secondary social studies and English teacher education. The interdepartmental and cross-institutional model that resulted applies the principles of clinical instruction called for by NCATE, incorporating "dramatically different" course configurations and substantially altered relationships with partner schools (King, 2013, p. 1). The text that follows is written from the perspective of three professors who developed strategies for a clinical model and taught teacher candidates in a clinical setting. Curriculum planning for the clinical teacher preparation model required thoughtful engagement with two basic questions: (1) What theories, concepts, and frameworks are powerful for explaining and guiding teacher candidate learning in school contexts? (2) What practices of school-based teacher educators can most effectively impact the learning processes of teachers-in-training? In this article, the authors share, in response to the first question, the conceptual framework of the clinical model that was developed; in response to the second question, the central teaching practices that were developed for the clinical model; and, finally, the authors' best take-away lessons from the emerging model, which has undergone a stringent, continuous review and revision process for each semester of implementation.

A major challenge of creating a clinical model was the problem of reconfiguring delivery of an existing traditional stand-alone methods courses for secondary social studies and English into one seamless clinical experience. Curriculum developers were faced with combining five traditional methods courses and a literacy

course into a year-long clinical curriculum to be delivered on site at two participating high schools. The cross-institutional model that was developed in cooperation with partner schools required students enrolled in the program to spend one semester at each clinical site: one urban and one small-town, rural high school. University faculty from teacher education, history, and English co-taught the reconfigured courses. The history professor and the English professor both had high-school teaching experience, and both routinely taught teacher education students in their content area courses.

The methods courses that were combined for the clinical model are shown below.

Semester 1	Semester 2
SEC 351: Teaching Strategies for Secondary Schools	SEC 453: Management of Instruction
SEC 352: Planning for Student Diversity	SEC 475: English Methods OR SEC 481: Social Studies Methods
	LTCY 451: Reading in the Content Areas

University faculty taught education content and theory with a major focus on creating best practice lesson plans in English and social studies highly infused with literacy. They also collaborated with designated high-school teacher mentors to provide co-teaching experiences for teacher candidates and assist them in developing skills in lesson delivery and classroom management. Both university faculty and high-school teacher mentors observed teacher candidates in their classrooms and provided regular feedback on lesson design and delivery. High-school teacher mentors were designated as adjunct faculty to the university and received stipends for their services. Teacher candidates moved through the year-long clinical experience in cohorts.

Each new cohort started the first semester at the rural site and then moved to the urban site for their second semester. Beginning with the second semester of implementation, different cohorts were in progress concurrently; i.e., second semester of cohort 1 at one site while first semester of cohort 2 started at the other. Teacher candidates met together each day with the team of university professors in whole-group learning sessions or in focus groups with the content specialists as needed. This design was developed so that, during the teacher candidates' two clinical semesters, each would receive as much individualized instruction as possible to address needs determined by university and high school professionals.

In this clinical model, teacher candidates also were able to accumulate more than the minimum observation hours required by the state certifying body as well as obtain required experiences such as interacting with parents, assisting at extra-curricular activities, and observing in middle or elementary schools. By including these other compliance requirements in the clinical curriculum, the goal of making the clinical course a seamless experience in the practice of teaching was achieved by providing a single venue for students to meet the certification requirements traditionally bundled into their separate methods courses.

Another issue for implementation of the clinical curriculum was that students were also enrolled in traditional on-campus classes in their content areas during their clinical semesters in teacher education. In order to facilitate students' university schedules, the clinical program was scheduled for two full days a week at the partner schools, leaving three days per week for students to schedule other classes. At the clinical partner schools, part of the students' day was spent in the on-site university classroom, and part of the day was spent in the mentor teachers' classrooms, applying what they were learning.

This brief overview of the program plan represents the starting point for the first two cohorts. The authors anticipated that adjustments would be needed as the program progressed, and indeed they were. Revisions to curriculum delivery will be discussed both in the three strategy implementation sections and in the conclusion.

The move toward strengthening clinical preparation for teachers has attracted strong support from major education organizations in the United States, including CAEP, the Council for the Accreditation of Educator Preparation; AACTP, the American Association of Colleges for Teacher Preparation; ATE, the Association of Teacher Educators; AFT, the American Federation of Teachers; NEA, the National Education Association; and CCSSO, the Council of Chief State School Officers (Cibulka, 2014, p. 420). Yet, as Cibulka notes, one impediment to the development of clinical partnerships for the 21st century is the lack of a strong base of knowledge on clinical preparation, especially knowledge about specific practices that produce effective teachers (420). This article offers insights gained from the authors' immersion in the process of creating and implementing clinical partnerships with two very different high schools over a two-year period.

This paper describes the conceptual framework that informed decisions as strategies were selected and clinical practices developed for a re-design of the university's secondary English and social studies teacher education curriculum. It explains the three key instructional components of the blended courses that we developed under the clinical model: (1) instructional rounds, (2) the inquiry project, and (3) teacher self-reflection. Finally, the article shares certain formative findings from the first two years of implementation, summarizes what was learned about designing curriculum for a clinical model, and details some of the challenges of implementing a clinical model for secondary teacher candidates.

Since research on this particular model and secondary education clinical models in general is still in its formative stages, the authors would not expect to have enough data yet to establish causal relationships for this clinical model. Longer-term qualitative and quantitative data are still being collected for that purpose. Yet the description that follows of the design and implementation of this one model adds to the base of knowledge on clinical preparation that Cibulka calls for, especially in its analysis of the specific practices that were chosen for implementation. The authors' first-hand perspective has unique value as a record of the design, implementation, and revision process for a clinical curriculum.

CONCEPTUAL FRAMEWORK

Our clinical model for teacher education is based on constructivist principles. A foundational principle of constructivism is the claim that "what a person knows is actively assembled by the learner" (Brooks & Brooks, 1993, as cited in Taggart & Wilson, 2005, p. 6); hence, the term constructivism, which emphasizes the process of constructing rather than simply acquiring knowledge. Taggart & Wilson assert that learning is "adaptive" and involves choosing, sorting, and storing what the learner perceives as useful information. A key point here is learner choice; the learner chooses what information to sort and store according to complex variables of prior knowledge, goals and motivation, and the context of the learning situation. Constructivists acknowledge Piaget's premise that learning is a process of change through which learners assimilate (restructure knowledge in order to integrate it into an existing schema) or accommodate (restructure knowledge by modifying existing schema) to achieve goals. In addition to the belief that knowledge is assembled by the learner, Taggart & Wilson describe the following beliefs of constructivist practitioners: (1) learning is nonlinear, and (2) the most effective learning is done through "guided discovery, meaningful application, and problem solving" (p. 8). Constructivist practitioners create opportunities for learners to manipulate meanings and patterns by empowering them through alternative concepts and heuristic procedures. Constructivist practitioners acknowledge the importance of self-motivation and self-reflection as learners struggle to reconcile new concepts with existing schema. As learners engage in this type of productive struggle, they should be engaged in authentic activities, collaborate with others to explore and evaluate ideas, and have access to models of appropriate skills for their learning situation (Taggart & Wilson, p. 6).

As a method for teacher training, a constructivist model situates pre-service teacher candidates in an academic and social context designed to maximize their capacity for learning "in and from their practice" (Taggart & Wilson, p. 3). In a clinical model, teachers-in-training engage in guided discovery as they try multiple strategies for lesson delivery in real classrooms under the guidance of experienced practitioners, then reflect on the results in collaboration with observers and peers, considering aspects of the context that may have affected the results. Their reflections lead to theorizing of practice that influences future lesson design and implementation. In this kind of learning environment, teacher candidates identify their role as problem solvers who are continuously making choices about instruction and assessing the results of those choices in order to understand how to structure lessons that result in deep learning. When teacher candidates combine theory, practice, inquiry, and reflection, they commence down a path of professional growth that will lead to long-term excellence (Zeichner, 2010).

A strong body of research in teacher education (Danielson, 2013; Darling-Hammond, 2000, 2006; Pollard & Collins, 2005; Shulman, 1986; Staunton, 2008; Taggart & Wilson, 2005; Zeichner, 2010) supports the clinical model, insisting that only through a carefully mediated blending of theory and practice under the guidance of knowledgeable and experienced practitioners does a pre-service teacher candidate develop the expertise to make strategic decisions that enhance student learning; i.e., basic expertise at the level of their pre-service training along with cognitive tools for continuing their professional development as they enter the profession.

Not only were the authors expecting pre-service teachers to benefit from the constructivist learning environment that was being created for them, but they also wanted to immerse them in a constructivist orientation toward teaching. Designing the curriculum this way applied the premise that since learning is socially situated (Anderson, Reder, & Simon, 1997; Cobb & Bowers, 1999; Greeno, 1998), the methods of learning should be

socially situated as well. With a goal of immersing pre-service teachers in an authentic learning experience within a clinical model, a curriculum was created that would enable these teacher candidates to apply relevant pedagogical principles to the co-teaching assignments they would be carrying out in their mentor teachers' high-school classrooms over the course of their two-semester clinical experience.

This approach to curriculum design was supported by recent decisions at the state department of education. Because Charlotte Danielson's Framework for Teaching has been adopted as the official heuristic for gauging the development of teacher effectiveness in the state where the university is located, curriculum designers had strong support for applying Danielson's work to the clinical model that was being developed. Using the state-level Professional Growth and Effectiveness System (PGES) (Kentucky Department of Education, PGES, 2014), the authors were able to align the curriculum of their clinical model with criteria that had been established for professional educators. Curriculum design began by framing a series of essential questions of practice, using the key domains in the Danielson model: Planning and Preparation, Classroom Environment, Instruction, and Professional Responsibilities. The following essential questions were used to elicit problems of practice for teacher candidates' consideration during the clinical experience:

- What does effective planning and preparation at the secondary level involve? *(PGES, Domain 1)*
- How does a teacher create a positive classroom environment that supports optimum learning for all students? *(PGES, Domain 2)*
- What processes are involved in implementing and evaluating effective instruction? *(PGES Domain 3)*
- What professional behaviors do successful high school teachers practice? *(PGES, Domain 4)*

Initially, university faculty teaching the courses to be offered in the clinical model met together during summer 2013 to carve out a curriculum that would allow students to meet national accreditation and state certification requirements while participating in the clinical model. In this early stage of developing the curriculum for a clinical model, the planning team considered how they might achieve coherence in knowledge-building and experience-building activities for teacher candidates. Knowing that there would be a designated classroom in the collaborating high schools, a schedule was created for students to spend roughly half their time in the classroom with university professors and half their time in a mentor teacher's classroom. Students met with university professors to learn the theory and methodology of teaching in secondary schools and subsequently spent time co-teaching and applying the methods in their mentor teachers' classrooms.

 Darling-Hammond in her work on clinical teacher education emphasizes the importance of developing an ongoing and consistent relationship with the principal and faculty at collaborating schools. The authors' relationship with the two collaborating high schools was designed primarily to produce what a University of Louisville teacher education team described as "embedded engagement of teacher candidates in classrooms with teachers and students" (Evans-Andris et al., 2014, p. 473). The authors agree with the University of Louisville curriculum designers that "targeted space in the school to function as an on-site university designated classroom" (p. 477) is an integral component of the clinical model, and felt it was important to design a curriculum that would make maximum use of the advantages of being on-site. It was desirable for students to start planning, teaching, and managing instruction in the first few weeks of their clinical experience and to participate early on in creating assessments and analyzing results for real students.

For the first year of implementing a clinical model at the two collaborating schools, the university team determined that several components would potentially produce the kind of seamless connections between theory and practice that would help teacher candidates develop conceptual frameworks for effective high school teaching. With this consideration in mind, the team decided to maximize theory-to-practice connections through the following components: instructional rounds, inquiry projects, and reflective journaling. It was important to make intentional curricular choices that embedded these components within a program that would remain true to the key objectives of the courses taught. However, it also meant making difficult choices about compressing other content in order to incorporate these new on-site, practice-driven components.

This was no small task. During the first year of implementing the clinical model, the team experienced highs and lows. In particular, professors found that transitioning from a curriculum of university classroom instruction supplemented by off-campus field observations to a fully immersed clinical curriculum was challenging for everyone, from the teacher candidates themselves to the mentor faculty at the high-school sites and the university professors trying to meld course work and field experiences. Through ongoing reflected in real time, the team adjusted lessons and schedules to meet the demands of the model, reminding each other constantly of the questions driving the plans: What is clinical about this model? How is it different from a non-clinical teacher education program?

During the summer of 2014, with the first cohort of pre-service teachers, the "pioneers," having completed the fifteen hours of university coursework that comprised the new clinical model and with a second cohort halfway through their first academic year, university faculty and teachers from the two collaborating high schools met together to consider revisions to the curriculum and structure of the model. Several issues arose in those second-summer discussions that compelled a re-examination of relevant research on the clinical model. After much discussion, mentor teachers from the collaborating schools and university professors on the team agreed on the following needs for curricular revisions:

- teacher candidates should spend more time working with students;
- teachers candidates should do more co-planning and co-teaching with the mentor teacher;
- teacher candidates should have more opportunities to interact with faculty at the collaborating schools other than their mentor teachers;
- teacher candidates should have more opportunities to observe a variety of teachers interacting with students;
- teacher candidates should have more experiences in managing a high-school classroom, beginning with "drop-in" lessons every day early in the first semester;
- teacher candidates should have opportunities for peer rehearsal with members of their cohort during their university classroom time.

Revisiting seminal work on the clinical model (Darling-Hammond, 2000, 2006; Zeichner, 2010), the team considered again the question of what knowledge-making activities teacher candidates in a clinical model should be practicing, and this question led back to our constructivist base. Teacher education students needed a curricular framework that would support each of them in constructing an individual understanding of how to solve real classroom problems in real time.   The team knew that, while some basic content knowledge and teaching strategies may be directly taught, practiced, and memorized, leaners need a different kind of instruction if they are to arrive at higher levels of cognition where they are able to use knowledge in new ways. This is precisely the challenge pre-service teachers encounter too late in many traditional teacher education programs, when as student teachers, they begin to practice in real K-12 classroom what they have learned in their university classes.

The authors had seen teacher candidates during those first semesters of the clinical experience struggle with the dissonances between their preconceptions about teachers, students, and teaching methods and the encounters with constructivist pedagogy and real classroom situations that were part of the clinical model. They acknowledged that this kind of struggle was necessary for deep learning to occur. The clinical experience intensifies the struggle for teacher candidates as they are constantly being required to reconcile theory and practice, and a clinical preparation program should find ways not to lessen the struggle but to help teacher candidates build resilience through experience in sorting through and solving problems.

Thus, the key structures that were chosen for closer focus during the refining process for the second year of the model—instructional rounds, the inquiry project, and teacher self-reflection—all were designed to promote an inquiry mind set in which teacher candidates would "reflect on and process a wide variety of information about situations" (Schunk, 1996, p. 272). The team wanted them to actively seek solutions to problems, agreeing with Schunk that "teaching is not a lockstep function that proceeds immutably once a lesson is designed" (p. 273). The next section focuses on describing these three structures that formed the basis of the inquiry approach for this clinical model.

IMPLEMENTATION AND FINDINGS
Instructional Rounds Process and Findings
One strategy that was implemented to create an inquiry-based curriculum was taken from the Harvard Instructional Rounds model that has been implemented for several years in the university's local educational cooperative, the Green River Regional Education Cooperative, which serves forty school districts in Western Kentucky University's service area. The cooperative had already provided the Harvard rounds training to local school superintendents and administrators in order to develop rounds networks in the region. The local school districts where our partner high schools are located have used this model, making it a logical choice to use in our clinical teacher preparation program.

Developed by City, Elmore, Fiarman, and L. Teitel, the Harvard Instructional Rounds model, as described in *Instructional Rounds in Education* (2009), is

an adaptation and extension of the medical rounds model, which is used routinely in medical schools and teaching hospitals to develop the diagnostic and treatment practice of physicians . . . [G]roups of medical interns, residents, and supervising or attending physicians visit patients, observe and discuss the evidence for diagnoses, and, after a thorough analysis of the evidence, discuss possible treatments. The medical rounds process is the major way in which physicians develop their knowledge of practice. (p. 3)

Although one of the common misunderstandings about rounds is that they are evaluative in nature, City (2011) defined instructional rounds as "an inquiry process. People doing rounds should expect to learn something themselves" (p. 37).

As the curriculum planning team developed clinical experiences for the teacher candidates, the Harvard model's focus on collecting descriptive, non-evaluative data during classroom observations and "building a trusting, respectful community that pushes itself hard and develops a common language and understanding of learning and teaching" (p. 38) seemed critical in developing teacher candidates' knowledge of effective teaching and learning practices. The team decided to apply the basic phases of the Harvard model as they planned clinical rounds experiences for the teacher candidates.

The Harvard Instructional Rounds model includes the following four phases: 1) developing a problem of practice that is based upon the school's improvement goals and professional development focus; 2) observing classrooms with focus questions and filtering the data collection through the lens of the problem of practice; 3) debriefing, which involves analyzing the data in steps from description to analysis to prediction; and 4) determining next level of work (City et al., 2009).

In order to use a model that was originally designed for practicing teachers and administrators, some adaptations needed to be made, as the focus for this clinical model was developing inquiry skills in undergraduate teacher candidates. The first modification was to change the "problem of practice" to a "focus topic." In organizing the curriculum for the clinical program, the authors scaffolded content and skill progressions throughout the year, based on Danielson's model for effective teaching and state certification requirements; topics of study that guided the curriculum of the clinical model made logical focus topics for instructional rounds. Topics in semester one included standards, objectives and learning targets, critical thinking, relevance, and planning for diverse learners. Second semester topics included procedures and routines, literacy strategies, classroom management, unit planning, and assessment.

A second modification was to change the Harvard model's "next steps" to "developing my professional practice." As teacher candidates learned content and skills in a clinical model, the team's goal was to develop both their teacher identity and their professional practice. Thus, the classrooms observed, the data collected, and the patterns analyzed during instructional rounds provided a relevant context in which students could begin to develop practice-based theories about teaching and learning as well as consider how they might grow individually as teaching professionals; that is, how they could see themselves enacting the practices they were observing. It was hoped that, after observing several different teaching styles centered on a focused topic of teaching practice, students would start to develop skills not only in collecting relevant data but also in analyzing how contexts of teacher style and classroom culture can affect the implementation of teaching strategies.

As the team examined the debriefing phase of the Harvard rounds process, they found that analyzing the specific data for patterns worked in the setting at our collaborating schools, but a more pressing goal was to go beyond that to have teacher candidates create hypotheses about effective practice related to the focus topic. The last modification, then, was to have students use the specific data and analysis of patterns to create hypotheses and questions related to the focus topic. City et al. (2009) describe the synthesis that occurs from learning in instructional rounds as follows: "It forces multiple actors, with often quite different interests and ideas, to begin the difficult process of forming a coherent view of what constitutes powerful teaching and learning in classrooms" (p. 8).

Throughout the clinical year, WKU faculty chose focus topics that aligned with program objectives and curriculum. Next steps involved creating focus questions aligned with Danielson's Framework for Teaching (The Danielson Group, 2013). The focus questions were used as headings on data collection sheets for teacher candidates to use in classroom observations. These data sheets included prompting questions to guide the data collection process for the teacher candidates. For the instructional rounds on procedures and routines, for instance, the following focus question guided the rounds experience: How do teachers use procedures and routines to maximize instructional time? These four prompting questions grounded the collection of specific, non-evaluative data from each classroom observed: 1) What is the teacher doing or saying? 2) What are the

students doing or saying? 3) What do you notice about procedures and routines? and 4) What resources do you notice in the classroom? How are they used?

University faculty organized teams of both teacher candidates and faculty members, who observed and collected data from three to four different classes during a one-hour class period at the partner high school. Once observations were completed, teams returned to the classroom to begin the debriefing process. The following debriefing protocol reflects the process and modifications from the Harvard model that the team used:

(1) Description - Read through your notes from the observations, your pieces of evidence. Select five to ten pieces of data and write each on an individual sticky note. Within your small group, share your pieces of data, helping each other stay in the descriptive rather than evaluative voice. Remember to ask each other what you saw or heard that makes you think that. Allow everyone to speak once before anyone speaks twice.

(2) Analysis - On chart paper, sort the evidence (sticky notes) in ways that make sense to your group and help you make sense of what you saw. With the group, discuss and identify patterns; don't forget to account for variation as well as similarities.

(3) Application to professional practice - Review your descriptive evidence and patterns in light of the focus topic. Think about and discuss as a group what you hypothesize is effective practice regarding the focus topic, i.e. what most impacts student learning. Synthesize and chart three or four hypotheses regarding effective practice. Remember that "If-then" statements work well as hypothesis statements. Add two or three questions your group has or observations you still want to learn more about on this topic.

As rounds teams finished charting their hypotheses and questions, each team shared its findings. University faculty guided the discussion to include similarities and differences between the groups' thinking, connections to previous classroom readings and discussion topics, and examples from the teacher candidates' clinical classroom experiences. At the end of each instructional rounds experience, group data sheets of hypotheses and questions were combined into charts and given to teacher candidates. Follow-up readings, discussions, and reflective journal prompts helped teacher candidates to further develop their thinking on the focus topic.

Data from seven instructional rounds experiences were collected. The first five focus questions in the table below were used with teacher candidates in cohort one at school number one during the first three months of the clinical preparation program. The last two focus questions were used with cohort two teacher candidates during the second semester of the clinical preparation program at school number two. Data were analyzed and sorted into coding categories using "certain words, phrases, patterns of behavior, and subjects' ways of thinking…" (Bogdan and Biklen, 2003, p. 161). For each focus question, the authors coded an "A" for a correct or accurate hypothesis about the focus topic and "I" for either an inaccurate hypothesis about the focus topic or a statement that was not a hypothesis. For the list of questions teacher candidates generated on each topic, the researchers coded questions as "L" for lower levels (remember, understand) and "H" for higher levels (apply, analyze, synthesize) of Bloom's Revised Taxonomy (Anderson et al., 2001). The table in Appendix A shows the instructional rounds focus topic questions, the number of hypotheses generated by teacher candidates that rated "A" and "I," and the number of questions developed that rated "L" or "H."

One initial finding from the first rounds experience was that teacher candidates did not understand how to create an effective hypothesis statement related to the focus question. From the ten hypotheses generated in the debriefing session, seven of those were inaccurate. Of those seven, six of the sentences were not hypothesis statements. University faculty realized that teacher candidates needed a mini-lesson on developing good hypothesis statements using an "If…then" or a "When teachers..., then students…" format. After this mini-lesson, data showed that the number of correctly written and accurate hypotheses increased.

A second finding was that some focus topics prompted more accurate hypotheses and higher-level questions than others. On the topic of critical thinking, for instance, nine out of ten hypotheses were accurate and insightful for teacher candidates to be making the first few weeks in a teacher preparation program. Some hypotheses were "If we ask open-ended questions, then students will be encouraged to respond in a way that requires higher level thinking"; "If students draw their own conclusions, they remember the content better"; and "If we help students make real world connections, then they can build on previous knowledge." Sample questions were "How does the teacher prepare to motivate students to reach higher levels of thinking?" and "How can we use historical documents to teach critical thinking?"

Relevance was another effective rounds focus topic, as eleven out of thirteen hypotheses were accurate, and four out of five questions were higher level. Hypotheses such as "If teachers encourage students to connect subject-

specific content to their own interests, students will be more likely to engage in class activities and discussion" and "Clearly showing historical impacts on current events will help students see the relevance of what they are learning" showed developing thinking about making lessons relevant to adolescent students. The following question generated from rounds shows that teacher candidates were beginning to grapple with teaching content in a way that relates to students: "How can you incorporate relevance in lessons when assignments are basic skill building?"

On the topic of effective questioning and discussion techniques, teacher candidates generated five out of five accurate hypotheses. Statements such as "If you scaffold questions from basic/recall/simple to critique/higher level/complex, you can help with student engagement" and "If questions have relevance to students, this may lead students to ask their own questions" showed the teacher candidates were beginning to analyze questioning practices that they observed as they developed their own skills in questioning.

 The rounds focus question about planning for diverse learners prompted nineteen out of twenty-five accurate hypotheses. Some examples of these accurate statements are "If teachers recognize that we all have different backgrounds and perspectives, then it can be celebrated and not ignored" and "Teachers should understand their students and their abilities to be able to direct the lesson plan in a way that all students will be engaged." While some hypotheses demonstrated the beginnings of inclusive teaching philosophies early in the clinical year, some of the questions generated in this rounds experience reflected either a lack of knowledge about diverse learners or a lack of context about the specific learners to understand why the teacher was delivering instruction in a certain way. Questions such as "Is seating arrangement a way to deal with diversity?" "Are nonverbal accommodations the most effective way to deal with diversity?" and "My teacher pointed out that male writing is harder to read and sloppy. Is that the typical case?" demonstrated to the university faculty that for teacher candidates to be successful interpreting what they watched in classrooms, more background knowledge on diverse high school learners was needed.

Similarly, the rounds focus question about how teachers organize physical space and resources prompted rather disappointing, yet information-filled findings. Only three out of seven hypotheses were accurate, and inaccurate statements such as "If desks are in rows, students will be more engaged" and "If there is a focus wall, students need to face it" show some strong misconceptions about student engagement and effective teaching, misconceptions perhaps representative of folk pedagogy (Bruner, 1996).

Another finding from the rounds data is that the number of questions charted by teacher candidates about the focus topic dropped in the last two instructional rounds sessions. There are two major reasons that explain this change. First, the last two rounds sessions were conducted in the second semester of the clinical teacher program. At that point in the year, teacher candidates had participated in the rounds process multiple times before and had also worked two days a week in a high school throughout the first semester. Second, not only was their experience with the rounds data collection and analysis protocol more familiar, but they had taught several lessons with high school students to put their newly learned skills about these topics into practice.

City et al. (2009) describe the impact of the constructivist, inquiry-based nature of learning from the instructional rounds process as follows:

> The model of learning that is embodied in the rounds process… puts educators in the positions of having to actively construct their own knowledge of effective instructional practice and to develop…a shared understanding of what they mean by effective instruction. The process of active construction helps educators articulate and refine their own theories about how to support learning and builds their capacity to both use and generate knowledge. There is, unapologetically, a certain "constructivist" bias in the rounds process. When we work with people, we specifically avoid giving them "answers" to the most pressing problems they face, because to give "answers" would be to transfer the responsibility for learning from them to us. (p. 10)

The team's focus on inquiry through instructional rounds reflects the following learner-centered principles: (1) learning complex subject matter should be "an intentional process of constructing meaning from information and experience" (American Psychological Association (APA), p. 3); (2) successful learners "create and use a repertoire of thinking and reasoning strategies to achieve complex learning goals" (p. 4); and (3) learning complex skills "requires extended learner effort and guided practice" (p. 5). Along with instructional rounds, the inquiry project that was developed for our second-semester students provides an extended, guided application of this inquiry approach to learning.

Inquiry Project Process and Findings

During the first year of implementation of the clinical model, realizing the need to include an inquiry project as one of the students' tasks, the authors created an assignment in which students researched a classroom diversity topic, synthesized their findings in a traditional research paper format, and used their papers as guides for leading a table discussion on their topic. Neither the students nor university faculty were satisfied with the resulting papers or table discussions. Compared to the usual classroom discussions based on collaborative learning and praxis, both the papers and the table discussions were flat. Thinking back over that failed project, the team realized that the disappointing results of that assignment highlighted a central issue of planning for clinical teacher education. An effective clinical model cannot be built by lifting assignments and other teaching structures from a non-clinical approach. The research project that had been implemented was not coherently integrated into the theory-to-practice orientation that had been established as a central mode for learning in the clinical curriculum.

Not wanting to discard the inquiry project altogether for second-year students, it was decided instead to incorporate elements of individual inquiry throughout the second-semester curriculum, which would culminate in a Pecha Kucha style mini-conference, where students would share their inquiry results. Students were already practicing inquiry thinking together in instructional rounds. As a natural extension of that inquiry thinking, the revised individual inquiry project would have them conducting individual targeted classroom observations, interviewing high-school faculty, and discussing their problems of practice with their mentor teachers at the sites. These activities would be supplemented with self-reflections on classroom experiences and text-based research in professional journals. The following section discusses the structural elements of the inquiry project for the second year: (1) the professional growth plan, (2) the inquiry process, and (3) self-reflective journaling.

As the university team planned how to implement an authentic inquiry project in semester two of the clinical model, the intent was to make the work of the teacher candidates as similar as possible to what practicing teachers were doing in the partner schools. The Professional Growth Plan (PGP) assignment was developed based on the model for practicing teachers in the state where the university is located, and it became the basis for a semester-long inquiry project.

At the end of the first semester in the clinical model, teacher candidates scored themselves using the PGES framework based on five lessons taught, feedback given from their mentor high school teachers, and debriefing conferences with the university team. These self-evaluations with supporting data were used as the foundation for the PGP in semester two. Each teacher candidate discussed his or her strengths and explained growth areas that would be the personal focus for work in semester two. Teacher candidates determined six strength areas and six areas for growth, the data from which is represented in the table below for nine teacher candidates in cohort one and seven teacher candidates in cohort two. The table shows growth areas and numbers of teacher candidates from each cohort who chose those topics. The raw data have been collapsed into the general categories of lesson planning, content, and classroom management.

Growth Area	Cohort One – Number of Times Mentioned	Cohort Two Number of Times Mentioned
Lesson Planning - Instructional strategies (varying for student needs, introducing new skills, assessing progress, and designing high-level tasks and questions)	15	18
Content (handling student misconceptions, making content relevant, showing multiple perspectives)	15	10
Classroom management (creating a positive environment, managing time, managing behavior, procedures, using resources)	24	15

Using students' PGP growth areas, each student conferred with university faculty to select a problem of practice, based on classroom observations and self-reflections. Sample inquiry project questions from these conferences include the following: (1) How does a teacher remain flexible while also requiring student accountability when

planning, delivering, and assessing? (2) What are effective questioning strategies to engage students in higher level thinking about social studies content? (3) What methods can a teacher use to communicate high expectations for social studies students to benefit their learning? (4) What strategies and techniques can be utilized to help differentiate content to ensure various demographics of students are addressed? (5) What are effective strategies and techniques that will engage students in higher level thinking in social studies?

Having chosen a problem of practice early in their second semester, students continued to engage in the inquiry process through the components mentioned above: individual targeted classroom observations, interviews with high school faculty, discussions about their problems of practice with their mentor teachers at the sites, self-reflections on their teaching, and text-based research in professional journals. Teacher candidates checked in with university faculty at designated points during the semester to review findings and adjust plans. They continued to consider the problem in different classroom contexts throughout the semester, including observations in specific high school classrooms suggested by their mentor teachers and two off-site visits to other schools. Finally, an additional element was added to the lesson plans they were designing in the following question and statement: "Is there anything you would like specifically observed during this lesson? Connect to your PGP and inquiry project." According to the inquiry project plan, students would prepare an annotated bibliography of print sources that addressed their problems of practice; they would also prepare and deliver a Pecha Kucha presentation during the final week of the semester. Students and professors agreed that the new structure for the individual inquiry project is a much more authentic application of inquiry learning than the first-year traditional research project in that it has multiple connections with the other work of the semester and with the students' own teaching.

The following is an abbreviated version of the timeline that was used for embedding the second-semester individual inquiry project into the work of the semester.

Week 1: Narrate a teaching story from your first semester that illustrates an important moment in your personal understanding of what it means to teach in a high school.
Week 2: Narrate a teaching story from this week that struck you as worth thinking more deeply about, including contextual factors important to the narrative.
Week 3: Narrate a third teaching story and determine two or three problems of practice that have arisen from your observations and teaching and that are important to you.
Week 4: Identify one problem of practice related to your teaching and your PGP. Share your problem and assumptions with your mentor teacher and university faculty and identify critical areas in which you need more information.
Week 5: Phrase your problem of practice as a researchable question, confirm it with university faculty, and create a preliminary list of professional resources that address your problem.
Weeks 6-9: Begin to assemble an annotated bibliography for the problem of practice you have identified, explaining how each source helped you see the problem in a different way or corroborated other information you have gathered.
Week 10: Bring to the week's table rounds questions from your problem of practice that you still need answered. Reflect on how you will use the knowledge you are gaining from exploring your problem of practice to design lessons and teach more effectively.
Week 11: Review your reflections from your post-teaching debriefings so far this semester and describe your progress in understanding and addressing your problem of practice.
Week 12: Describe an unanticipated scenario from one of your recent classes that made you think on your feet. Were you able to adjust your lesson or your delivery to solve the problem? If so, how so? If not, now that you have had time to think more about it, what might you have done differently?
Week 13: Consult with your mentor teacher and university professors to identify several classroom teachers to observe and interview about your individual inquiry topic and describe the similarities and differences in their approaches.
Week 14: Reflect on your progress in meeting the goals of your PGP.
Week 15: Complete your annotated bibliography and present your findings to your peers in a Pecha Kucha presentation.

As the timeline above shows, the stages of the individual inquiry project are closely tied to other components of the clinical model, including after-teaching debriefing conferences with mentor teachers and university faculty, "work-on- next-time" discussions related to the PGP, and specific questions addressed to the observer on lesson plans. The lesson plan observation question asks the student to connect the question specifically to the PGP, inquiry project, and/or strategies used in clinical lab time. Reflection questions for students to complete after teaching and watching videos of themselves teaching include the following: "Based on your PGES self-

evaluation, describe a strength and area for growth from this teaching experience" and "From this teaching experience, how is your skill set developing on your inquiry project or PGP focus areas? What are your next steps?"

Self-reflection Process and Findings
 Revising the inquiry project helped us think about another component of the first-year model implementation that had been less effective than anticipated, the reflective journal. The reflective journal had been designed to help develop a habit of metacognition in teacher candidates by giving them fifteen minutes in the classroom at the end of each clinical day to reflect on some aspect of their practice. Prompts for the day might be based on classroom lessons, course content, classroom experiences, teaching problems and successes, or developing one's teaching identity. Time was also provided after the writing to share thoughts on the topics. In its first instantiation, the self-reflective journal resembled the kinds of journals a traditional teacher might use to encourage reflective thinking and writing in a classroom.

In examining the first-year journal responses, the team noted that some students' journals showed much more in-depth reflection skills from the beginning while others seemed never to push beyond simple description and surface commentary. It was determined that students needed practice and feedback to develop the kind of reflection skills that would enable authentic reflective practice. Further, we noted that entirely open-ended prompts such as "Reflect on today's teaching experience" were not in themselves productive of the kind of critical reflection that supported the other components of the clinical experience. During that first year, students had not been successfully prepared to reflect as teaching professionals because it had been assumed that they had an understanding of the reflective process that they did not have.

Also, in reviewing the prompts from the first two semesters of work with the first cohort, the team realized that students had been asked to address too wide a range of topics in their journals. Therefore, their reflections did not build upon themselves or support the teacher candidates in developing deeper reflective skills. Several students agreed with the team's conclusions, as expressed in their end-of-year interviews, where they mentioned the journals as "add-ons."

Based on the analysis above, the authors reviewed the key literature on reflective thinking in teacher education (Dewey, 1938; Pollard & Collins, 2005; Schon, 1983; Taggart & Wilson, 2005). Just as with the original plan for an inquiry project, the first plan for reflective journaling had diminished effectiveness because it had not included an intentional progression of tasks embedded in practice. It had lacked focus and authenticity. So rather than abandoning the journals, because the team felt that establishing a reflective habit of mind was so basic to the clinical approach, it was decided that the prompts should be revised to complement and support other inquiry components. To do so, the authors created weekly rather than daily prompts; these weekly prompts called for longer reflections. Prompts were also re-designed to represent a progression of reflective skills based on the Dewey five-stage reflection model: (1) identify a problem; (2) observe and refine the problem; (3) develop a hypothesis; (4) scrutinize the hypothesis by applying logical reasoning; and (5) test the hypothesis in practice (Dewey, 1938). Finally, the reflective journals were tied to the inquiry project and the PGP to provide students a vehicle for greater focus in their reflections, as the list of weekly prompts above demonstrates. The prompts begin by asking for rich description and intermittently progress to questions of context, assumptions, and conflicting information, concluding with testing the results. The redesigned prompts support teacher candidates' progressive development in using the reflective process throughout the semester. Thus, the reflective journal, when reconceived as the synthesizing feature of the clinical experience, blended the rounds experiences, teaching evaluations, and PGP into a year-long experience in critical inquiry.

As a culminating product of critical inquiry supported by reflection, the Pecha Kecha presentation required teacher candidates to re-visit their findings from selected focused readings, observations, interviews, peer discussions, and classroom experiences. Because the Pecha Kucha format requires image-heavy slides to represent findings on a research topic, teacher candidates had to think deeply about the relationships between their varied sources of information. The typical requirement for a Pecha Kucha presentation of twenty slides with twenty seconds of oral commentary for each slide forced them to prioritize, summarize, and organize their findings in an engaging format. All members of the university faculty who attended the Pecha Kucha session remarked on the degree of professionalism and ownership of the topic that marked students' delivery. We believe that by designing the instructional rounds, inquiry project and reflective journals as mutually supportive activities, we had hit upon a plan to maximize the teacher candidates' critical engagement in clinical practice.

The three curriculum structures that were re-designed for the second year of implementation were discovered to be significant improvements over their previous counterparts in the team's original clinical model. The results of

these revisions provided topics for consideration in the summer 2015 curriculum meetings, as the university professors reviewed the first two years of clinical model implementation Two important lessons were learned during those first two years: first, that curriculum planning for a clinical model must go beyond stretching, twisting, and folding non-clinical curriculum to make it fit into a clinical teaching environment and, second, that every curricular decision made when designing a clinical model has to stand up under inspection for its authentic theory-to-practice affordances.

Implications

Zeichner (2010) quotes Arne Duncan, U.S. Secretary of Education, as saying, "It takes a whole university to educate a teacher" (p. 1); while the authors wholeheartedly concur with Duncan, still they found that moving from a traditional university teacher preparation program to a fully school-imbedded clinical model that focused on constructivist teaching and inquiry would inevitably prove to be a journey of challenges, experimentation, and lessons learned. This university's clinically based curriculum, developed by a team of university and public school teacher mentors and focused on PGES guiding questions, has been implemented through the inquiry approaches discussed above. The "products" of the model are teacher candidates who are capable of designing, implementing, and reflecting on their teaching practice, as is evidenced in this teacher candidate's reflective journal entry:

> Throughout this semester, I have made many transitions in my teaching preparation. I have gone from having less than thirty hours of experience to having over one hundred. I have gone from considering the ideas of planning and preparation to implementing these factors in an actual classroom. I have gone from simulated to reality, from theory to application, and from idealized thinking to laborious (but rewarding) doing. Most importantly, I have gone from holding a high level of uncertainty about the teaching profession to holding a passion for the profession. (ELA Teacher Candidate, Cohort 1)

This model-in-progress is offered as a platform from which other higher-education institutions may begin to design curricula for clinical teacher education suitable to their unique contexts. Evans-Andris et al. (2014) affirm the need for action research "in which practitioner-researchers conduct systematic inquiry about their own professional practice" (479). The authors share here their process of reflection as they designed and revised their clinical curriculum over a two-year period as a resource for other university-school partnerships in the process of developing effective clinical models. Finally, the authors join Evans-Andris et al in their call for the development of other models with potential "exportability" (p. 479), models informed by thoughtful analyses that trace the development of clinical programs in teacher education. In doing so, the information contained in this article answers NCATE's call for "dramatically different models and strategies for preparing teachers in clinical settings" (King, 2013, p. 1). It is presented as the impetus for an ongoing conversation about how teachers can be better prepared to face the challenges of twenty-first-century classrooms across the globe.

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APPENDIX A: Hypotheses Generated from Instructional Rounds

PGES Guiding Questions for XXXX Curriculum	Instructional Rounds Focus Questions	Number of accurate hypotheses (A)	Number of inaccurate hypotheses (I)	Number of high-level questions (H)	Number of low-level questions (L)
What does effective planning and preparation at the secondary level involve? *(PGES, Domain 1)*	How are standards and learning targets aligned to instructional activities?	3	7	3	2
What does effective planning and preparation at the secondary level involve? *(PGES, Domain 1)*	How is critical thinking embedded into assessments and instructional tasks?	9	1	6	1
What does effective planning and preparation at the secondary level involve? *(PGES, Domain 1)*	What diversity do you see in the classroom? How do teachers accommodate for diverse learner needs?	19	6	4	4
What processes are involved in implementing and evaluating effective instruction? *(PGES, Domain 3)*	How do teachers implement relevant instruction?	11	2	4	1
How does a teacher create a positive classroom environment that supports optimum learning for all students? *(PGES, Domain 2)*	How do teachers organize physical space and resources to create an effective classroom culture?	3	4	2	2
What processes are involved in implementing and evaluating effective instruction? *(PGES, Domain 3)*	How are questioning techniques and discussion strategies implemented in the classroom?	5	0	0	0
How does a teacher create a positive classroom environment that supports optimum learning for all students? *(PGES, Domain 2)*	How do teachers use procedures and routines to maximize instructional time?	4	0	0	1

TOWARD DEVELOPING AND VALIDATING A MODEL FOR IMPLEMENTATION OF LEARNING OBJECTS

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Abstract: The fundamental concern of present mix method study is developing a valid model to implement Learning Objects (LO). LO is any digital resource that can be used and reused to support learning (Wiley 2003). LO is one of the most important and recent innovations in Instructional Technology which guides the next generation with the potential of reusability, adaptability, productivity and durability (travel well) of E- learning material. Investigation into Learning Object Repository (LOR) which has plenty of LOs to select from and implementing the right one need some pointwise criteria. The research presents and categories criteria to select LOs. In the first stage qualitative content analysis was adopted to develop the LOs' Implementation Model (LOIM) and the LOs' evaluation questionnaire then in order to validate the proposed model a pretest -posttest experimental design was adopted. A total number of 72 B.Ed students by purposive sampling technique were selected. Then the students were taught through LOs which were selected base on criteria proposed in the LOIM. Lisrel output of SEM technique to establish external validity of LO's implementation model indicated good fitness of LOIM on data. The models presented in the present study unlock the doors to sustainable advantages of LO.

INTRODUCTION

E- Learning innovation in educational technology has had massive changes in the teaching- learning system, and has created a new paradigm in education. When E- Learning emerged a strange revolution occurred in storage, retrieval and sharing of instructions or information and the delivery of learning material. In this way, design, development, delivery and the implementation of educational material has changed. E-learning can customize content for different learning needs or different groups of people and can also be updated instantaneously. This benefit of E- Learning is raised in a Learning Object (LO). LOs are small but pedagogically complete segments of instructional content that can be assembled as needed to create larger units of instruction, such as lessons, modules and courses. LOs can be personalized for different learners and also the objects can be reorganized promptly by the user community who share the knowledge and the content. The fundamental idea behind LOs is that instead of traditional long courseware packages, the curriculum content can be broken down into small components and then be used and reused several times in different contexts.

Learning Object

Wayne Hodgins, a well-known E-learning expert coined the term LO in 1992. He was watching one of his children playing with Lego building blocks while mulling over some problems regarding learning strategies. Wayne realized right there that the industry needed building blocks to learn plug and play interoperable pieces of learning. He termed those building blocks LOs (Northrup 2007).

LOs are one of the most meaningful and effective way of producing online learning resources (Polsani 2006). Although we are not generally accustomed to reusing resources developed for one purpose for other purposes (Doiron & Davies), LOs have overcome this custom. A LO is defined as the smallest independent structural experience that contains an objective, a learning activity and an assessment (L'Allier 1997). It is the minimum meaningful pedagogical unit like an atom which is a small "thing" that can be combined and recombined with other atoms to form larger things. LO may include anything from a set of learning outcomes, learning designs or whole courses to multimedia and other forms of resources, as long as they are kept in an electronic format that has the potential to promote learning.

The use of the term "object" itself has its roots in Computer Science where the term is used to describe an entity consisting of data and related operations(Adams and Williams 2006). In object oriented programming with an LO approach, content is designed as small units of learning that support potential reuse, which can stand alone, and can be made accessible to meet the "just enough" and "just-in-time" requirements of learners. LOs are components of a course that can be reused in various avenues. An object in this context is generally understood as an amalgamation of related variables and methods. Therefore, an object that can promote learning and teaching is seen as an "LO"(Fairweather and Gibbons 2006).

The Technology Standards Committee in the IEEE states that "an LO is defined as any entity, digital or non-digital, that may be used for learning, education or training"(IEEE 2002). Cisco approaches to LO as, "A container of the learning objective, activities, and content" (Balatsoukas, Morris et al. 2008).

Wiley defines digital LOs as "any digital resource that can be reused to support learning"(Wiley 2003). His definition describes reusable digital resources and rejects non digital, non-reusable objects. Weller, (2003) defines LO as a digital piece of learning material that addresses a clearly identifiable topic or learning outcome and has the potential to be reused in different contexts.

Polsani, gives a more constrained definition: "An LO is an independent and self-standing unit of learning content that is predisposed to be reused in multiple instructional contexts" (Polsani 2006).

There are three key features of LOs that benefit a students' learning:
- ➢ Visual supports, which help make complex ideas more easily understood by reducing working memory and cognitive load
- ➢ Motivation through increased focus, and
- ➢ Control over learning(Kay and Knaack 2008).

Ingredients of Learning Objects

The "materials" in a learning object can be documents, pictures, simulations, movies, sounds, and so on. Structuring these in a meaningful way implies that the materials are related and are arranged in a logical order. But without a clear and measurable educational objective, the collection remains just a collection.

Characteristics of Learning Objects

The following are the characteristics of LO:
- o Reusability: A key attribute of LOs is their discrete nature. Discreteness enables LOs to be categorized and stored independently, and reused in a range of educational settings for multiple purposes. LOs consist of content and presentation. The presentation part creates an opportunity for reusability with every new multimedia environment. Content is independent of learning context. To be reusable LOs should be designed to separate the contents into presentation, structure, pedagogy and context. LOs are not rival resources because they can be utilized simultaneously by many people (Wiley 2003). Dodani (2002) referred to reusability as "the cornerstone of the promise of LOs". Maximum reusability depends on how readily the object can be removed from any particular context.
- o Granularity: Granularisation refers to the size of the LO and 'is a necessary condition for LOs to be shared and reused' (Duncan, 2003). Size does not refer to the physical size of the object, rather it refers to the amount of information conveyed to the learner by it (Hamel and Ryan-Jones 2002).The smaller the LOs the higher the level of granularity and also higher the level of reusability (Polsani 2006). But as Merrill mentioned LO can be as small as a drop and as big as the ocean. The Size of the LO depends on the curricular structure or technical details (Merrill 2012).
- o Accessibility: LOs are generally understood to be digital entities that are accessible over the internet, meaning that any number of people can access and use them simultaneously in contrast to traditional instructional media, such as an overhead projector or a video tape, which can only exist in one place at a time. LOs can be identified and located when they are needed to meet training and educational requirements. A teacher can conduct an online search for training on a specific topic and identify LOs for specific organizational needs.
- o Interoperability: LO must also be interoperable in a range of educational environments otherwise the potential for reuse is compromised, which will clearly impact the LOs' value and use. The content functions in multiple applications, environments, hardware configurations regardless of the tools used to create it and the platform on which it is delivered.
- o Interactivity: Wills (1996) states that interactivity should be more than just point-and-click. It engages the learner in a challenge based on manipulating the information. Interaction may be better defined as engagement.
- o Aggregability: LOs can be grouped into larger collections of content, including traditional course structures. Currier and Campbell proposed seven levels of aggregation of learning content and LOs are at the third level.

The levels aggregation proposed are:
1. Information objects: raw data, such as an image with no learning objective.
2. Information resources: collections of information objects, such as e-book, with no educational objective.
3. LOs: aggregations of information resources that serve a specific learning objective and may facilitate the execution of a learning activity and assessment.
4. Unit of study: an aggregation of LOs and information resources or objects, such as a lesson.
5. Module: an aggregation of units of study and LOs.
6. Course: an aggregation of units of study, modules, or other LOs and resources.
7. Collection: an aggregation of modules and courses, with no educational objective assigned and merely serving as a searchable database for LOs.(Currier and Campbell 2005)

Learning Objects' Repository

LOs require some type of receptacle for the purpose of holding and sharing them with others. The term used for these receptacles is Learning Objects Repositories (LOR). LORs enable LOs to be easily located, shared and reused in a variety of educational settings. LORs provide access to a vast store of LOs such as animation, videos, simulations, educational games, multimedia texts and music files. LORs are the libraries of the E-learning era (Richards, McGreal et al. 2002). They provide an indexing facility where users can add new LOs together with their metadata and store them in these database. LOR can make sense of distributed learning which uses network communication technologies to share LOs among repositories through well researched user interfaces and architectures that make them easy to use and permit various levels of interactivity. LORs provide the ability to locate and browse LOs as well as to continue creating versions and to perform maintenance. Storing, maintaining, and producing LOs in a digital LOR is different from a traditional one. Objects in an LOR need to be produced in ways that will permit use in multiple contexts. A successful digital LOR promotes the sharing of records along with being able to facilitate access to the LO. It must also provide mechanisms for creating multiple instances of an item to be simultaneously used by different users. It gives the users an opportunity to comment (Cervone 2012).

There are two major categories of LORs:

The first category includes those LORs that contain both the LOs as well as LOs' descriptions in the form of metadata. The repository may be used to both locate and deliver the LO.

The second category includes LORs containing only the metadata descriptions. In this case, the LOs themselves are located at a remote location and the repository is used only as a tool to facilitate searching, locating and accessing the LOs from their original location (Metros & Bennet, 2002).

Implementation of Learning Objects

Implementation is the realization of an application, or execution of a plan, idea, model, design, specification, standard, algorithm, or policy. The best plans and programs will not work if they are not implemented. A plan, when implemented, finds its true worth. Selection of appropriate LOs and delivery of them to learners are challenging tasks of E-Learning, because the LOs' content must be provided to an acceptable level of the learner's understanding (Biletskiy, Baghi et al. 2009). Wiley (2002) proposes three components that constitute a successful LO implementation:

➢ An instructional design theory,
➢ A LO taxonomy,
➢ Prescriptive linking material to connect theory to taxonomy.

Stewart suggested three criteria for choosing LO viz.,

1) Each element should be discrete, separate and stand alone
2) Select homogeneous LOs
3) No element be a subset of another (Stewart, Stewart et al. 1981).

LITERATURE REVIEW

SabihaYeni(2012) conducted research to determine 74 teachers' and 107 teacher candidates' use of digital materials from the internet and their awareness of LOs. The results indicated that although most of the participants frequently used internet resources, they did not know much about LOs.

Guthrie on his study demonstrated that teachers sought LOs which are dynamic, motivating, and appropriate to use on the computer and they were found to develop their students' conceptual knowledge. Kid friendly and graphic-rich LOs as well as feedback on correct and incorrect responses were characteristics sought by teachers for their English Language Learners (Guthrie 2010).

Pythagoras Karampiperis (2006) selected LO based on learners' cognitive characteristics. First they recognised the learners' cognitive characteristics by help of Cognitive Trait Model. Then they simulated different behaviors of learners for navigating in hypermedia LOs space and measured the selection success. The results showed that the proposed selection methodology could dynamically update the internal adaptation logic leading to refined selection decisions (Karampiperis, Lin et al. 2006).

Conceicao and Lehman belended LOs into traditional face-to-face classes, the LOs were used by learners at their own pace and time as instructional aids. Results indicated that some of the students were not able to solve the problems of technology issues. When the computer crashed, they became frustrated and decided not to use the LOs. In other instances, students were not familiar with downloading the required software, and rather than asking they were found to decide not to use the LOs(Conceicao and Lehman 2003).

Need and significance of the study

E- Learning in education has elicited growing enthusiasm which has naturally been followed by extensive research, which has been conducted all over the world to examine the influence of it, on the learning process but

research into instructional material, especially the criteria in the selection and implementation of LOs is necessary. It is widely acknowledged that the role and influence of LOs on learning and teaching is optimized, especially when it is skillfully integrated into the educational experience (Schank & Cleary, 1995; Schank, 1997). While the concept of LO has received considerable attention in the educational community, there is no model to select and implement it.

Agostinho (2004) notes that we are at risk of having digital libraries full of easy-to-find LOs we do not know how to use in the classroom. Among the huge amount of objects available on the internet, recognition of a proper LO is difficult. Selection of an appropriate LO is complicated because many LOs are visually similar. Next the question of how an appropriate LO can be recognized arises. Present research study attempts to answer this question by proposing a model to implement LOs. The model for implementation of LOs that is presented in this study would be of great use to educationalists, educational technologists and students. The model that is developed herein attempts to propose methods for extraction, use and evaluation of LOs.

METHODOLOGY
Objectives
The study was undertaken with the following objectives:
- To develop an LOs' Implementation Model.
- To validate the LOs' Implementation Model.

Research questions
The objective of the study is to discover the criteria for implementation of LOs. Specifically the study aims to answer the following questions:
- What is the appropriate model for implementation of LOs?
- How valid is the proposed model from the point of view of users?

Operational definitions
Some of the key terms that are used in this study are defined operationally as follows:
Learning Object: LO is defined as a digital resource that can be reused to support learning. LOs are operationally defined in this study as 349 LOs which are implemented to include images, videos (animation and motion picture) and mind maps, selected based on criteria which LOIM suggests.
Evaluation of LOs: Evaluation of LOs refers to a systematic determination of LO's merit, worth and significance, using criteria governed by a set of standards. This study was carried out by the LO evaluation questionnaire which included these five items: technical factors, content quality, pedagogical factors, computer related issues and ease of use of LOs. Students who used LOs evaluated them by rating them via the above mentioned criteria in the LOs' evaluation questionnaire.
LOs' Implementation Model: A model represents concepts and relationship between the concepts. LOIM in the present study refers to the model which is developed by the researcher for implementation of LOs.

Research method and design
Different research purposes require different research designs and analysis techniques (Knafl& Howard, 1984). Research design is determined by the notion of fitness for purpose(Cohen, Manion et al. 2013). This research study aimed at first developing the LOIM and second validation of it. The nature and aims of the research indicate that both quantitative and qualitative methods of research need to be adopted and hence this is a mixed method research study. While qualitative methods used in the study aim at comprehensive understanding of LOs and the development of LOIM, quantitative methods are aimed at the validation of the model.

Qualitative Methods
In this research, qualitative content analysis, which was done by the software MAXQD10, has been used for the following purposes:
1- To generate categories of characteristics of LOs to develop the LOIM.
2- To construct the LOs' Evaluation Questionnaire
Content analysis is any qualitative data reduction and sense-making effort that takes a volume of qualitative material and attempts to identify core consistencies and meanings (Patton, 2002). Researchers regard it as a flexible method to analyze text data (Hsieh and Shannon 2005). Content analysis goes beyond merely counting words or extracting objective content from texts to examine meanings, themes, and patterns that may be manifest or latent in a particular text. (Zhang and Wildemuth 2009)
The stages suggested by Krippendroff (1980) in the process of Content Analysis were followed to understand the LOs characteristics, and to develop the LOIM and the LOs' evaluation questionnaire.
1. Preparing the texts (data): Articles, papers, books, and other text related to LOs, their characteristics were collected to develop LOIM. Resources collected in these areas formed the population of text that were used to carry out the content analysis.

2. Defining the unit of the analysis: The theme involving a single word, a phrase, a sentence, a paragraph, or an entire document was used as a unit of analysis.
3. Coding on a sample of text: The label tagged to each theme formed the code. To test clarity of codes a sample of text was analysed and coded. Then the coding consistency was checked through an assessment of inter-coder agreement. Revision of the text showed that the consistency in coding was high.
4. Coding all the text: Totally 460 codes were extracted while coding was checked repeatedly to prevent "drifting into an idiosyncratic sense of what the codes mean" (Schilling, 2006).
5. Developing categories and subcategories: 25 sub categories were developed by sorting similar codes based on how different codes were related and linked together. Then similar subcategories were sorted into categories based on how different sub categories are related and linked. Five categories of LOs' characteristics were derived from theoretical construction of LOs.
6. Drawing conclusion: In this stage the researcher made inferences and presented her reconstructions of meanings derived from the data. This involved the LOIM and the LOs' Evaluation Questionnaire.

After the LOIM was developed and tools were constructed, the LOs were selected based on the LOIM in two units of an EP course of the B.Ed degree, namely "Understanding the learner" (Growth and Development, Cognitive Development, Psycho-Social Development, Constructivism Learning Theory, Needs and Problems of Adolescents) and "Personality and Group Dynamics" (Personality, Mental Health and Mental Hygiene, Adjustment, Conflict, Frustration, Defence Mechanism and Group Dynamics).

Table No.1: Number of LOs which were selected to implement

Media asset / Type of LO	Image	Video	Mind map	Total
Fact	151	7	2	160
Concept	66	18	9	93
Procedure	20	3	14	37
Principle	24	4	3	31
Process	9	15	4	28
Total	270	47	32	349

Table No.1 shows the number of LOs that were used based on the type of LO (fact, concept, process, procedure, and principle) and the type of media asset (image, video, and mind map). Cisco's categorisation of LOs (which include fact, concept, process, procedure, and principle) were used to categorise the LOs. All the LOs have used text and this has been one of the most important ingredients of the LOs. Totally 349 LOs were implemented in this study. Table No.1 shows the number of LOs based on the type of LO and media asset.

Quantitative Methods
B.Ed students who had been selected by the purposive sampling technique were taught through LOs. The selected units in EP by the researcher in 16 sessions spread over a period of three months. Finally post-tests viz, Interest inventory and Achievement test in the EP and the LOs' evaluation questionnaire were administered.

Sampling
The population of this research was considered from two perspectives and hence the sampling techniques were adopted accordingly.
1- In order to carry out content analysis to develop LOIM and construct the LO's evaluation questionnaire, all books, articles, and papers related to LOs were indexed in scientific databases. Sampling inside this population was the purposive technique that followed gradual selection. Samples inside the resources were selected based on their potential contribution to the development of the structure. This process was repeated so that the researcher selected and analysed the text that were renowned and popular, and then more samples were selected to refine the categories and models that were emerging. This process continued until data saturation was achieved, the point at which no new insights and knowledge were achieved (Glaser and Strauss 2009). Considering that there were many resources in the LOs, sampling was done based on the fame of the resources in different databases namely, Science Direct, Elsevier, ProQuest, Emerland and Blackwell Publishing. First all text was based on the following key terms: LO, LOs' characteristics, LOs'

evaluation. They were downloaded and disposed based on the level of fame of the resources, then content analysis was done from the most to the less important resource. When the researcher reached saturation point, where in the researcher stopped receiving new texts and ideas, the sampling was stopped.

2- Sample of B.Ed students: In order to conduct the experiment 72 students from B.Ed colleges affiliated to Mysore University, India were selected by purposive sampling technique.

Table No.2 presents distributions of the sample by gender, age, subject and computer knowledge.

Table No.2: Distribution of sample by Gender, Age, Subject and Computer knowledge

		Frequency	Percent
Gender	Male	31	43.05%
	Female	41	56.94%
Age	20-24	40	55.5%
	25-29	11	15.27%
	30-34	10	13.8%
	35-…	11	15.27%
subject	Biology & chemistry	10	13.8%
	History & language	28	38.88%
	Geography	11	15.27%
	Math & physics	23	31.94%
Computer knowledge	Poor	4	5.5%
	Moderate	50	69.4%
	Good	13	18.5%
	Very good	5	6.9

Tools

Learning Object's Evaluation Questionnaire

Since there were no tools available to evaluate the quality of LOs from the students' point of view, the LOs evaluation questionnaire was constructed(appendix A). The data collected from this questionnaire was also used to validate the LOIM. Items extracted through content analysis were transformed into question form. The draft of the questionnaire was constructed in two parts: Part A included demographic information (gender, age, and subject) and Part B included 81 questions which referred to the quality of LO directly or indirectly. Each question was followed by a five point scale ranging from 1-5(low to high).

In the next step, the preliminary draft of the LO's Evaluation Questionnaire was discussed with experts in the field of LO and ICT. Modifications were made to improve the language, to remove ambiguity and to make the items comprehendible to the students. This resulted in the deletion of 23 items and 58 items were retained in the final questionnaire. The students graded the implemented LOs, scores of items in the questionnaire were summed up to estimate the score given to the LOs.
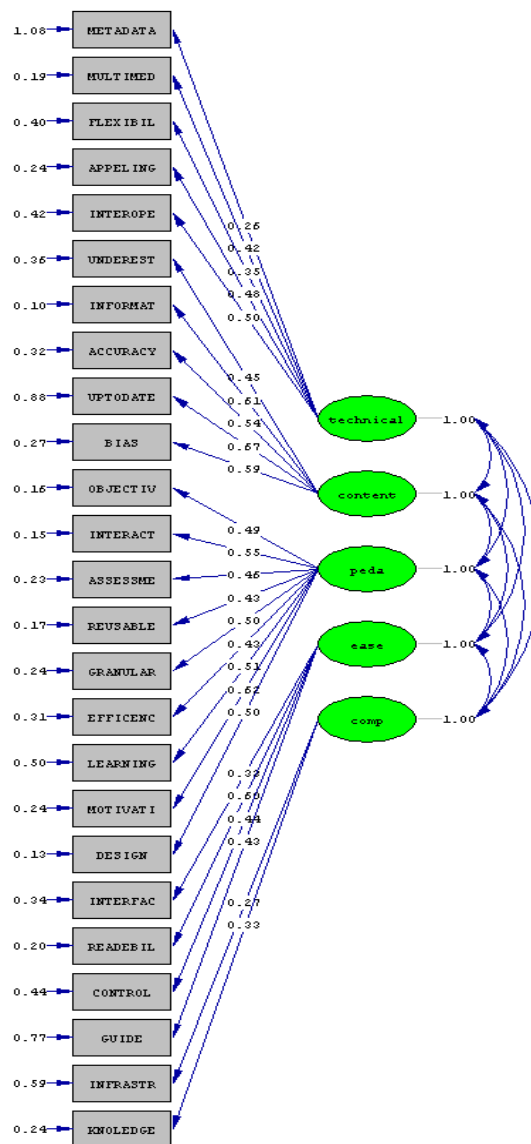
The face and content validity of the LOs' evaluation questionnaire was established by experts in the field of LO and ICT.

Construct validity of LOs' Evaluation Questionnaire:

Confirmatory Factor Analysis (CFA) was adopted to establish construct validity of the tool. Since it involved investigating the structure of multivariate data, each of a set of observed variables was represented as a linear combination of unobserved latent variables or factors, plus an independent error term. CFA measures the relationship between observed and latent variables or factors. A fundamental feature of CFA is it's hypothesis-driven nature, which means that the researcher must have a priori sense based on past evidence and theory, of a number of factors that exist in the data and of which indicators are related to which factors(Brown 2012). A "good model fit" only indicates that the model is plausible.

Figure No.1 depicts CFA Lisrel output. It shows the path diagram and the chi-square goodness of fit test as well as the Root Mean Square Error of Approximation (RMSEA).

Figure No.1. Lisrel CFA output of LO's quality

Chi- Square= 427.46,   df= 465,   P- Value= 0.119,   RMSEA= 0.023

- Figure No.1 shows non-significant Chi-Square with p-value of 0.119 which means that the empirical correlation matrix does not differ significantly from the fitted covariance matrix. Ideally, the chi-square statistic's p-value should be greater than 0.05
- Then the chi- square was divided by degree of freedom, Chi/df was found to be 0.919 which is less than 3 implies goodness of fit. Ideally the chi- square divided by the degree of freedom has to be as small as possible.
- Root Mean Square Error of Approximation (RMSEA): RMSEA value of 0.023 which is less than 0.05 shows a low difference ratio between the fitted covariance matrix and the empirical data-matrix indicating a close fit of the model.

Table No.3 shows additional measures of goodness-of-fit of the model. These measures of fitness indicate that the model fits the data.

Table No.3: LO's characteristics indicators fitness

Statistics	Value
Chi- square	426.46
P- Value	0.119
Df	465
Chi/df	0.919
RMSEA	0.023
GFI	0.92
RMR	0.02
AGFI	0.94

➢ Obtained RMSEA value of 0.023 and RMR (Root Mean Square Residual) value of 0.02 shows good fitness of the model. RMR value ranges from 0 to 1, with a value of 0.08 or less being indicative of an acceptable model while RMSEA less than 0.8 indicates an acceptable model

➢ Obtained GFI (Goodness of Fit Index) value of 0.92 and AGFI (Adjusted Goodness of Fit Index) value of 0.94 indicates good fitness of the model. GFI is a measure of fitness between the hypothesized model and the observed covariance matrix. AGFI corrects the GFI, which is affected by the number of indicators of each latent variable. The GFI and AGFI greater than 0.9 indicate an acceptable model fit.

Table No.4: Factor Loading for LO's Indicators

Factors	Indicator	Factor loading	% of variance	Item No.
Technical factor	Metadata	0.25	15	53
	Effective multimedia	0.42	81	8, 16, 44, 45
	Flexibility	0.35	60	18, 55
	Appealing Appearance	0.48	76	47, 48, 52
	Interoperability	0.50	58	14, 50
Content factor	Understandability	0.45	84	31, 49
	Appropriate level of information	0.61	90	342, 34, 42
	Accuracy and veracity	0.54	68	33, 36
	Up-to-date	0.57	12	38
	Free of Bias	0.59	73	39, 40
Pedagogical factor	Learning Objective	0.47	84	9, 61
	Interaction and engagement	0.55	85	12, 11, 19, 28
	Assessment	0.46	77	10, 13
	Reusability	0.43	83	17, 51, 58
	Granularity	0.50	76	21, 27, 28
	Efficiency	0.43	69	15, 56
	Learning- oriented	0.51	50	24, 25
	Motivating	0.52	76	23, 41
	Instructional design	0.50	87	22, 26, 46
Ease of use	Interface	0.33	.66	2, 4, 6
	Readability of text	0.59	80	3, 43
	Feeling of control	0.44	56	1, 5
	Guide for use	0.43	73	20
Computer issues	IT Infrastructure	0.27	41	564
	Computer knowledge	0.33	76	2, 57

Table No.4 shows that the five factors to evaluate LOs which is depicted in Figure No.2. are:
1- Technical factors: include metadata, effective multimedia, flexibility, appealing appearance, and interoperability.
2- Content factors: include understandability, appropriateness of level of information, accuracy, and veracity, being up-to-date and free of bias.
3- Pedagogical factors: include Learning Objective, interaction and engagement, assessment, reusability, efficiency, granularity, learning orientedness, motivation and instructional design
4- Ease of use: includes interface, readability of text, feeling of control and guidance for use
5- Issues related to computer: include suitable infrastructure and computer knowledge.

Reliability of LOs' Evaluation Questionnaire
To determine the reliability of the LO's evaluation questionnaire Cronbach's Alpha method was employed separately for five subscales of the questionnaire.

Table No 5: Reliability of LO's evaluation questionnaire

Subscale	Number of items	α
Technical factors	12	0.805
Content factors	10	0.801
Pedagogical factors	23	0.919
Ease of use	8	0.766
Computer issues	3	0.71

As Table No.5 reports, Cronbach Alpha for technical factors is 0.805, content factors is 0.801, pedagogical factors is 0.919, ease of use is 0.766 and computer issues are 0.71. Cronbach Alpha which was found to be greater than 0.7 in all five subscales of the questionnaire indicates reasonable trustworthiness of all the sub-scales. Hence LOs' evaluation questionnaire was found to possess high reliability.

Interest Inventory in Educational Psychology
An interest inventory was necessary to obtain insight into the students' interest in EP. There were a number of tools to measure students' interest in subjects such as science or maths, but there are no tools to measure student interest in EP. The researcher constructed an Interest Inventory in EP.
By content analysis of several books, articles and theoretical framework, factors related to the variable interest in EP were extracted and the inventory was constructed including 30 statements which included positive and negative statements. Each statement is followed by a five point Likert scales ranging from strongly agree to strongly disagree. To check on Face and Content validity of the tool the inventory was scanned and reviewed by experts in EP and Psychology. Their suggestions were incorporated and modifications were made.
Reliability of Interest Inventory in EP

Cronbach's Alpha was adopted to measure the reliability of the Interest Inventory in EP. The Cronbach's Alpha correlation coefficient was found to be 0.869 which indicated a high index of reliability.

Achievement Test in Educational Psychology
An achievement test in EP was constructed by the researcher.

Statistical Technique to Analyze Data
A brief explanation of statistical techniques are given below:
Factor Analysis
Factor analysis is the statistical technique that takes a lot of information and reduces this mass of information into a simple message that is easy to understand. In this research, it was used to establish construct validity of the LOs' evaluation questionnaire. This is helpful to find out whether these facets and aspects really do reflect the specific variables or not. This technique enables the researcher to identify where different variables are in fact addressing the same underlying concept.
Structural Equation Modeling
SEM (Structural Equation Modeling) is a multivariate analysis with latent variables for testing and estimating casual relations using a combination of statistical data and qualitative casual assumption. SEM allows both confirmatory and exploratory modeling. SEM suites both theory testing as well as theory development (Judea Pearl 2000). In this study SEM was used for the validation of LOIM.

FINDINGS
Development of Learning Objects' Implementation Model
Research Question 1: What is the appropriate model for implementation of Learning Objects?
To answer research question one a model (as depicted in Figure No. 2) is proposed for implementation of LOs. Elements of the model are based on indicators which are derived from the qualitative content analysis of resources in LOs.

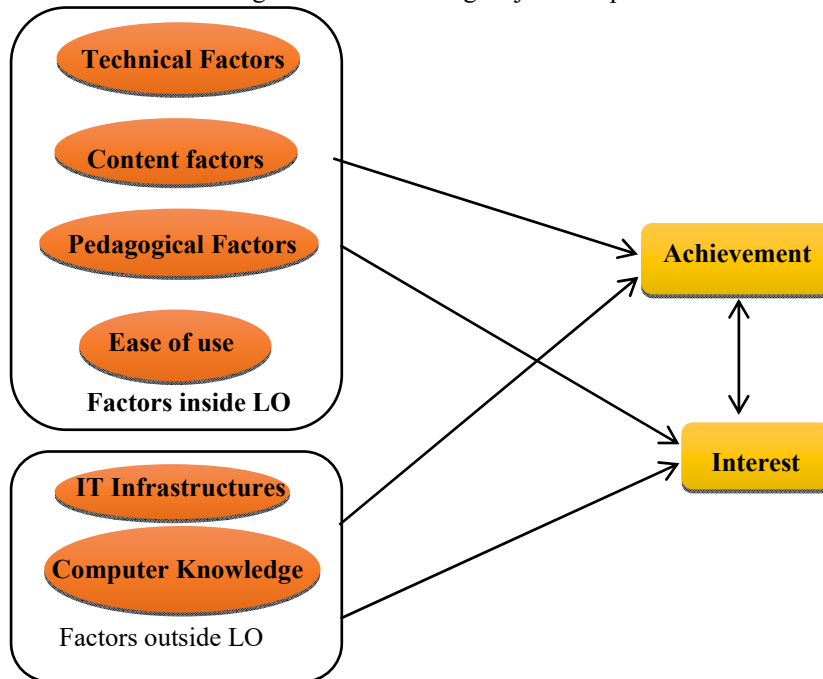Figure No. 2: Learning Objects' Implementation Model

Figure No.2 shows that in general the model proposes that two main categories, namely factors inside and outside LOs, play a vital role during the implementation of LOs to achieve the targets. Well designed and produced LOs along with proper infrastructure and users with common knowledge of the computer are expected to enhance Interest and Achievement when there is an interaction between Interest and Achievement in EP.

The following four factors are related to inside LOs:
1- Technical factors: technical factors refer to those characteristics of LOs that pertain primarily to the engineering principles involved in producing it. The technical factors include:

Metadata: they are the descriptors about an LO which act as an identity card to the LO in a repository of LOs. The metadata helps the users to locate an LO easily and extract it quickly without browsing through all the individual LOs in a repository.
Effective multimedia: Multimedia design is related to the designing of LO. LO can be viewed as a small multimedia element. Effective media covers just one learning objective which can be used independently; it is also repurposable and may be adapted by others. Comprehensive sound, image, video, graphics, and their appropriate placement are criteria to make multimedia effective.
Flexibility: Flexibility relates to designing the content so that it can be used in multiple contexts. Content designed with multiple uses and contexts in mind can be reused much more easily than content that has to be rewritten for each new use.
Appealing Appearance: the LOs' appearance should be attractive. It is estimated based on the color scheme, material packaging, and the integration of the different parts of audio, video, text, and sound content.
Interoperability: the ability of a LO to be used on multiple systems, and is commonly called the "plug and play" feature. It is the consideration of different functions in application, hardware and software and a common interface between various systems. Interoperable LOs are usable in different computers and with different operating systems.

2- Content factors: the LO should be appropriate from the point of view of its content. Content factors include the following subcategories:
Understandability: the content of the LO should be simple to understand with an unambiguous and clear text. Sometimes using graphs and charts help text to be more understandable.
Appropriate level of information: This criterion refers to the level of adequacy of information and its detail, which should not be too easy nor too challenging. An appropriate amount of text presented on each page is also important.
Accuracy and veracity: According to these criteria the text should be free of grammatical and spelling mistakes and should be accurate.
Up-to-date: Content should be in accordance with the newest or latest techniques, ideas, standards or styles.

Free of bias: The text should have a neutral point of view and should not be against an individual, religion, social class, political group, or race. Content with entrenchment is not usable for different categories of learners.

3- Pedagogical factors: Pedagogical factors are criteria related to pedagogy which include the activities of educating, instructing or teaching, and activities that impart knowledge or skill. The following are the factors related to pedagogical factors in the LOIM:

Learning Objective: Learning objectives provide guidance of all stages from instructional content, strategies, tactics, and media to assessment. Each chunk of an LO should have a clear learning objective.

Interaction and engagement: Learning theories suggest that when the learner is engaged in an LO and is in interaction with it, meaningful learning occurs. Accordingly the LO should engage the learner to provide immediate feedback to an answer.

Assessment: To evaluate the learning progress, the LO has to include simple and flexible formative assessment procedures. Each LO should possess assessment material appropriate to the content.

Reusability: the ability to use the LOs in varying learning contexts and with learners from differing backgrounds. For example, teachers of different grade levels or subject matter may use the same learning object in different contexts for different learning purposes.

Granularity: Granularity refers to the size of the LO. The more granular an LO is, the less it is tied to a specific learning context making it more reusable.

Efficiency: The user should be able to use the LOs successfully without wasting time or energy. Since designing and developing an LO is time consuming, efficiency is judged by the learner's sense of learning or by the achievement test in the field.

Learning- oriented: an LO is learning- oriented by nature. A successful LO should concentrate on learning and not on other issues such as context and hence should follow a learning- based approach.

Motivating: An LO should be able to motivate and create learning interest in learners. Well- designed and produced LOs can attract and hold the attention as well as stimulate the learners' interest in the field.

Instructional design: instructional design is the matching and alignment of all the components. Mismatching of the components leads to incomplete instruction and the failure of the LOs. The LO's production process should follow the instructional design principle.

4- Ease of use: ease of use in general is about how user friendly the LO is. It refers to ease of navigation, predictability, and quality of the user interface, and the help features of the LOs.

Interface: a well-designed interface helps to control the audio and video during the use of a LO. The interface aims to produce as realistic a virtual environment as possible. There should be suitable links wherever necessary.

Readability of text: refers to the font, along with the proper color of the font with enough contrast with the background to make the text readable.

Feeling of control: feeling of control originates with LO flexibility, which helps the learner to modify the LOs to their personal preferences.

Guide for use: There is a need for clear instruction to help the learner when he faces problems in using the LOs. The review of the user guide helps in eliminating difficulties and solving the problems faced by learners during the use of the LO.

Factors outside LO

The LOs' inside competencies along with its outside factors to implementation guarantee its success. External factors include suitable infrastructure and the degree of computer knowledge of the user. The sub factors related to the LO's outside factors are:

1- IT Infrastructure: It is clear that without the availability of computers and network facilities, LOs are not usable. Hence basic hardware and software facilities are necessary for the operation of LOs.
2- Computer knowledge: A computer literate person is one who is able to use a computer and any related technology which enables the use of an LO. Computer literacy level covers a range of skills from elementary to advanced and also the level of comfort the user has when using it because he understands how computers work and operate. Fortunately, to apply LOs, a high level of computer knowledge is not required but rather a medium level of knowledge as found in regular users is sufficient. In the present study the researcher asked the students the current level of their knowledge in computer as a regular user.

Validation of LOs' Implementation Model

Research Question 2: How valid is the proposed model for Learning Objects implementation?

The internal validity of the model was established by experts in the field of LO and required modifications were made according to their suggestions.

In order to establish the external validity of the LOIM, experimental research was conducted and data was collected from the B.Ed students. In the experiment the responses of participants to the LOs' evaluation

questionnaire was used in order to establish the external validity of the LOIM. Seventy two students formed the evaluation team for the LOs. They graded the LOs from 1 to 5, with 1 being the lowest and 5 being the highest score. Table No.6 shows the students' evaluation of LOs.

Table No.6: Result of Students' Evaluation of Los

Indicator	Mean	Standard deviation
Metadata	3.7	0.92
Effective multimedia	4.1	0.59
Flexibility	4.06	0.68
Appealing appearance	4.2	0.64
Understandability	4.43	0.78
Level of information	4.41	1.67
Accuracy & veracity	4.1	0.78
Up to date	3.9	1.15
Free of bias	4	0.76
Learning objective	4.2	0.63
Interaction & engagement	4.07	0.61
Assessment	4.05	0.66
Reusability	4.2	0.55
Efficacy	4.06	0.65
Granularity	3.79	0.61
Learning oriented	3.9	0.87
Motivating	4.1	0.69
Instructional design	4.1	0.61
Interface	4.04	0.67
Readability	4.3	0.71
Feeling of control	3.9	0.71
Guidance to use	3.7	0.92
Infrastructure	4.04	0.65

As it is clear from the table understandability of content got the highest score (4.43) while metadata and guidance to use got the lowest score (3.7).

The SEM (Structural Equation Modelling) technique was used to establish the external validity of the model. According to the LOIM, two groups of factors affect successful implementation of LOs: LO's inside factors include: technical factors, content factors, pedagogical factors, and ease of use and LOs outside factors include: computer knowledge of the user and IT infrastructure. Well designed and produced LOs along with the computer knowledge of the learner increase Interest and Achievement while these two variables also have a mutual effect on each other.
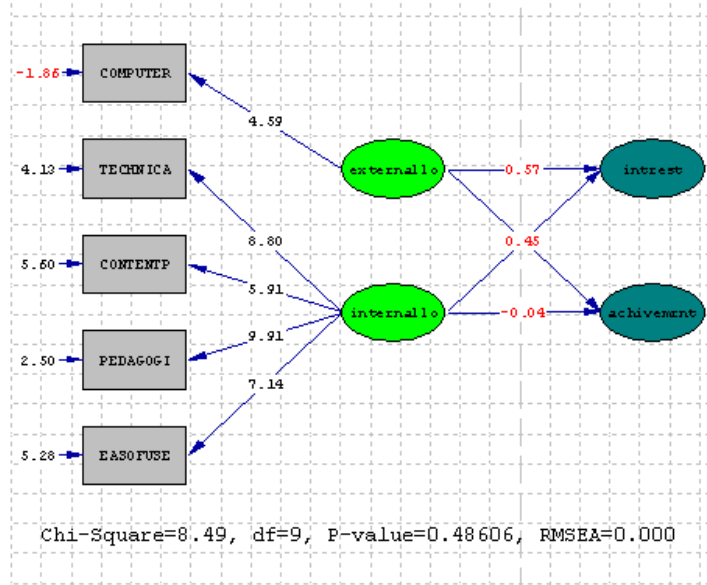
Figure N0.3: Lisrel output of LOIM

Figure No.3 shows the Lisrel output of the LOIM. Non-significant chi- square and RMSEA less than 0.05 indicate a good model fit.

➢ Non-significant Chi- Square with p-value of 0.48606 showed that the empirical correlation matrix does not differ significantly from the fitted covariance matrix. Ideally, the chi-square statistics p- value should be greater than 0.05

➢ Figure No.3 also shows that the chi- square when divided by the degree of freedom is 0.94 which shows goodness of fit. The chi- square divided by degree of freedom has to be as small as possible. If it was greater than 3 this would have implied "no goodness of fit".

➢ *Root Mean Square Error of Approximation (RMSEA):* RMSEA value of 000 shows a low difference between the fitted covariance matrix and the empirical data-matrix and hence indicates a close fit of the model. A value of the RMSEA about 0.05 or less indicates a close fit of the model.

Table No.7shows additional measures of Goodness-of-Fit (GFI) of the LOIM. This indicates that the LOIM fits the data collected through the LOs' Evaluation Questionnaire.

Table No.7: Fitness of LOIM

Statistics	Value
Chi- square	8.49
P- Value	0.48
df	9
Chi/df	0.94
RMSEA	0.000
GFI	0.91
RMR	0.03

GFI greater than 0.9 and RMR less than 0.05 shows good fitness of the LOIM on data. Establishing the conditions as shown in Table No.6 confirm the external validity of the LOIM, which means that the LOIM is able to justify its application.

CONCLUSION

A structural equation model namely Learning Objects' Implementation Model (LOIM) (depicted in Figure No. 2) and its validation is the concern of this research. As there is no guarantee that a well written book will lead to learning, producing good LOs is also not a guarantee to lead a student to learning. Other factors may play an important role. Though there are plenty of E- learning materials available on the net, this does not mean that all of them are useful. Rather learners should select the appropriate and useful LOs within the huge repositories of LOs.

Results indicate that both internal and external factors of the LOs are important to achieve the targets. The contents of an LO should be accurate, up to date and comprehendible. In each granule the appropriate level of information should be presented. Text-intensive instructions must be avoided, especially on initial screens. Since LOs have mass users they should be free of bias.

The LOIM suggests pedagogically that LOs include Learning Objective and Assessment. They should be able to motivate the learners and develop their interest. They are reusable in different contexts because they are learning-oriented. The pedagogical factors of an LO drive the learner to use it.

Technical criteria suggest that LOs should be tagged with information about them which will help the user to locate the material with ease. The principles of multimedia creation must be adhered to. Graphics, voice and animations must be used in preference to or in conjunction with the text. Sound should be available wherever necessary. Sound can be toggled on and off.

An LO is interoperable if it is useable with different operating systems. If an LO has been prepared using a font of a particular language then that particular font needs to be added to the LO for it to be interoperable. In general, LOs should be selected such that they can be run in different computer systems.

LOIM also suggests LOs should be easy to use and the user needs to have computer knowledge, which means he should know about computers and working with them as a common user. This is a strength of the LO as it shows that a high level of computer literacy is not necessary to use LO and a moderate level of computer literacy by a user is sufficient. Since mining in an LOs' repository takes a lot of time, LOIM can reduce search time. The LOIM saves teachers' time and improves confidence to achieve targets with produced LOs which are tried out and validated rather than having to produce a new one.

LOs' users should know that not all material available on the net is not worth using; finding a suitable LO is a challenge. The LOIM is a scale to identify effective LOs. It helps educators to increase the pedagogical impact of an LO in the classroom since it offers guidance to teachers who wish to select appropriate LOs. The items of the LOs' Evaluation Questionnaire available in Appendix-A present practical guidance on key features to be focussed on while selecting an LO. LOs that possess good content, sound pedagogy, and high quality multimedia increase students' performance and also lead to higher satisfaction among teachers and students. LOIM suggests that teachers assess LOs based on four criteria namely: content factors, pedagogical factors, technical factors, and ease of use before using them in their teaching-learning process.

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Appendix A: Learning Objects' Evaluation Questionnaire

Dear student:

The researcher is conducting a study on learning objects that you used (learning object is defined as any digital resource that can be used and reused to support learning). The researcher would like to get your very valuable ideas about these materials. The inventory has two parts (A and B).

Part A: **Demographic Information**:   1) Gender: Male….   Female ……. 2) Age…

3) Methods of Teaching: Biology & Chemistry ☐   History & Language☐

Geography ☐   Math & physics ☐   others☐

4) How much is your current level of knowledge about computer   as a regular user?
Excellent☐   Very Good☐   Moderate☐   Poor☐ No Knowledge☐

Part B: Please read the following statements and rate the learning objects from 1-5 indicating the rating from low to high by putting a tick (✓) mark in the appropriate space.

Statements	1 low	2	3	4	5 high
1- I could modify the learning objects to my personal preference.					
2- The interfaces were well organized.					
3- Text font was readable.					
4- All links work.					
5- The videos play easily.					
6- The system was easy to use(plug and play).					
7- I needed support of technical person to be able to use Learning Objects.					
8- sounds were instructionally effective					
9- The learning objectives of each unit were clear.					
10- The learning objects have assessment areas.					
11- It provides opportunities to think more deeply.					
12- Learning objects gave immediate feedback to an answer.					
13- The exercises are appropriate to the content.					
14- Learning objects can be used in different learning context for different learners.					

15- This material can emulate a realistic environment.					
16- Images were instructionally effective.					
17- The learning objects are reusable.					
18- The Learning Objects could be incorporated into larger collections of content.					
19- Learners can use the Learning Objects in an interactive way.					
20- If I had a problem in using material there was clear instruction to help me.					
21- Lengths of learning units are appropriate.					
22- Learning objects produced were based on instructional design principle.					
23- Learning objects could hold my attention.					
24- Learning objects followed learning – based approach.					
25- I could proceed on my own pace, step by step.					
26- Learning environment was dynamic.					
27- Each granular emphasised one of the key concepts.					
28- These granular of material can be recombined in other format.					
29- I actively participated in learning process.					
30- These materials addressed the concepts more effective.					
31- Content was understandable.					
32- The level of content information is appropriate (not too easy; not too challenging)					
33- The text is free of grammatical and spelling errors					
34- There is an appropriate amount of text on each page					
35- The information is presented in a clear, logical order					
36- The content information is accurate and correct.					
37- The content of this Learning Object is up-to-date.					

38- Learning objects provided academic references.					
39- Glossary was useful.					
40- Learning objects were free of bias.					
41- These materials stimulate learners' interest in educational psychology.					
42- Learning objects present adequate level of details and information.					
43- The text and background colors were complimentary to maximize readability.					
44- The graphics facilitate comprehension of the content.					
45- The graphics were placed appropriately on the page in a non-distracting format.					
46- videos and animations were instructionally effective					
47- I like the colour scheme.					
48- Material packaging is appealing.					
49- Diagrams and tables help to understand the content.					
50- I can use this package at home also.					
51- Learning objects are appropriate for users of other cultures also.					
52- Different parts of video, audio, text and sounds were integrated well.					
53- All of the assets tagged by information include name, description, creator and author.					
54- My university has acceptable technical infrastructure.					
55- Learning by this system is flexible.					
56- Materials were good all around					
57- I have been using computer before					
58- This material is suitable for global sharing.					
59- I think there is need for these kinds of resources.					

Appendix A: Interest Inventory in Educational Psychology

Demographic information:

Gender: Female ☐   Male ☐

Age……

Methodology of teaching:

 Biology & Chemistry ☐   History & Language☐

Geography ☐   Math & physics ☐   others☐

How much is your current level of knowledge about computer   as a regular user?

Very good☐   Good☐   Moderate☐   Poor   ☐

Instructions: This inventory consists of 30 statements. Read the following statements and indicate how much do you agree from strongly disagree to strongly agree with these statements by putting tick mark in the appropriate space from 1to5. Do not leave any of the statements unanswered.

SA= strongly agree   A= agree   NAD= neither agree nor disagree

D= disagree   SD= strongly disagree

N o	Statements	1 S D	2 D	3 NAD	4 A	5 S A
1	Educational psychology is interesting.					
2	I feel I can learn Educational psychology more easily than other subjects.					
3	My Educational psychology teacher makes the subject interesting.					
4	Educational psychology is a difficult subject.					
5	Knowing Educational psychology will facilitate my future life.					
6	Educational psychology is not related to my everyday life.					
7	I would like to be an Educational psychologist.					
8	Studying Educational psychology will help me in future.					
9	I feel tense when someone talks about Educational psychology.					
10	Studying Educational psychology is essential for a teacher since it helps in understanding student's behavior.					
11	Suppose there are Educational psychology and literature books available, I would choose to read literature book.					
12	Educational psychology has thought me how to take care of my life.					
13	I try to understand, what we are doing in Educational psychology.					
14	Studying Educational psychology makes me nervous or upset.					
15	I would like to score the highest in Educational psychology.					
16	I would like to watch Educational psychology programs on TV.					
17	I avoid the reading of Educational psychology articles in magazines and newspaper.					
18	I like my other teachers more than the Educational psychology teacher.					
19	I would like to get a job where I need to apply my knowledge of Educational psychology.					
20	I enjoy studying Educational psychology.					
21	If my college had an Educational psychology club, I would participate.					
22	I would like to study Educational psychology most during my study time.					
23	I would like to specialise in Educational psychology in future.					
24	I have a lot of interest in Educational psychology.					
25	I enjoy studying Educational psychology.					

26	Being involved with Educational psychology puts me in a good mood.					
27	I enjoy discussing Educational psychology issues.					
28	I would be happy if I had additional classes in Educational psychology.					
29	It is boring to sit in an Educational psychology class.					
30	I like to begin my day at college with an Educational psychology class.					

USING REGRESSION ANALYSIS IN IDENTIFYING THE PERFORMANCE OF STUDENTS IN THE BOARD EXAMINATION

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Abstract: This research focuses on developing a model prototype of predicting the possible student passers from a pool of board takers. The project focused on the performance of students who will take the board exam. Several attributes were included and identified as variables for prediction such as academic grades, age, gender and pre-board scores. The research project identified who amongst the pool of board takers will pass or fail the board exam and the passing percentage of the institution if it qualifies the national passing rate. The model prototype served as a preparatory tool for board takers to prepare for the examination and also an aid to the institution to plan and train even more their students before taking the board exam. Prediction is incorporated in the prototype using linear regression analysis of data mining. The predicted value was validated using a machine learning tool to identify its accuracy.

INTRODUCTION

Board examinations are given by professional regulatory agencies in various countries to its citizens to ensure that desired efficiency of the job is achieved, especially those which are critical to the society. The assessment also aims to measure the person's competencies and abilities in performing their jobs in the industry. Every year, new batch of examinees take their chance in passing the exam and becoming licensed professionals. However, there are times that the percentage exam result does not meet the national passing rate, resulting to an unfavorable reflection of an institution's performance.

Forecasting board examination results to set prognosis of the institution's efficiency in delivering instruction can be done using a data mining technique. Data mining (DM) is considered to be the latest technology in analyzing big data from various outlooks, summarizing voluminous pool of data and converting it into a useful and meaningful one, which can be of valuable resource to the business process. DM can identify behaviors of data and predict future trends through patterns, which can be of help in decision making.

Thus, this study aims to develop a predictive model that can identify figures of probable successful and unsuccessful examinees in the board examination and the possible passing rate percentage of a given set of board takers. Predictors were identified as bases of identifying the performance of the students before taking the exam. The technique of regression analysis of data mining was incorporated in the research project. It is hoped that using this technique would contribute further to the improvement of student performance in the pre-board examination and in identifying the probability rate of passing or failing the exam. This approach, if institutions allow, expects to better improve students' performance and permits anticipation of possible percentage result if it qualifies the national passing rate.

RELATED STUDIES

Part of the investigation process of a research is to have a survey of the previous studies which will acquaint you with needed knowledge about a certain area of research. It definitely helped in defining and understanding the problem due to its several suggestive techniques, tools and methods that have been used. Several studies have been considered to have a thorough glance, study and evaluation of the research.

Abubakak and Oguguo (2011) examined on the correlation of age and gender on academic achievement (CGPA) in mathematics and science students. Scatter-plot, mean and Standard deviation were used for the descriptive statistics while nivariate analysis of variance (ANOVA) and multiple regression were used for the inferential statistics. Results revealed a linear relationship between age and gender. A low positive correlation coefficients was obtained for ages and gender ($r=0.030$ and 0.111) which is significant. The predictor variables jointly accounted for 1.3% of the variance, gender was the better predictor.

Jabor and Kungu (2011) researched in determining if age and gender in high school influences the students' performance in mathematics. The study used the students' grade point (GPA) in mathematics during high school years to measure achievement. The study described the students by age, gender and academic achievement in mathematics. The comparison revealed that there were significantly differences in mathematics GPA scores between age group and gender, however, effect sizes were small.
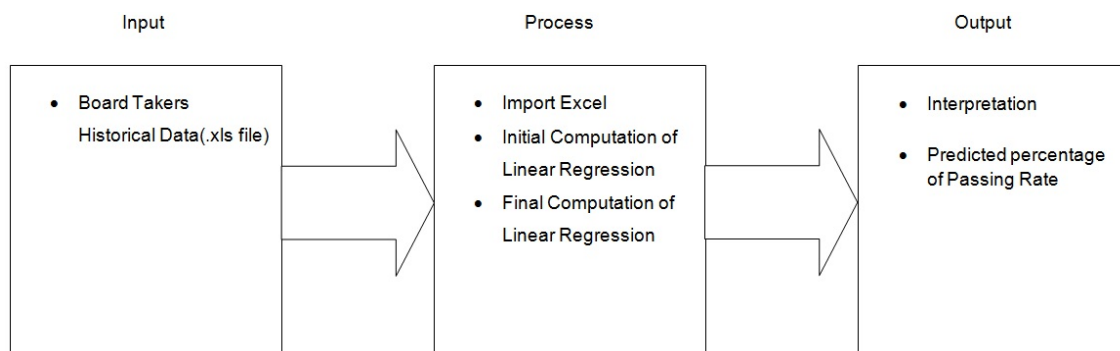
Kanyongo, Certo and Launcelot (2006) focused on the use of linear regression analysis through structural equation modeling using AMOS 4.0 the relationship between home environment factors and reading achievement in Zimbabwe. The study revealed that social economic status (SES) is the strongest predictor in reading achievement in Zimbabwe.

McCarthy, Padgham and Bennett (2006) identified factors that influence student learning in college macroeconomics and microecono such as gender and personality type, college entrance exam scores, grade point average, class size, and whether the course was micro or macro and was measured by Test of Understanding College Economics III (TUCE). Results revealed that there is no statistically significant influence on student achievement from college entrance exam scores or class size. Gender and GPA were significant explanatory factors for performance in principles of both mircoeconomics and macroeconomics.

Ong, Palompon and Banico (2012) identified the predictors in identifying the nurses' licensure examination performance of graduates. The study used the descriptive design using inferential techniques. Factors such as College entrance examination performance on IQ test, aptitude test, composite scores of science, math and English tests, college grade point average and pre-board examination performance were studied. Results revealed that all variables are significantly correlated with the licensure examination performance and that there were only two significantly predicted licensure examination which are college grade point average and pre-board examinations. Thus, these variables are the relevant bases in determining the success and failure of students' licensure performance.

FRAMEWORK OF THE STUDY

The framework of this research was formulated to have a preconceived notion of the study and will serve as the research' guide to know what is going on and what is expected to learn from the study.

Figure 1.0 Conceptual structure of predictive model

Figure 1.0: Presents the prediction model wherein the historical file which was imported from MS Excel was loaded into the tool. The file is composed of the attributes defined in Table 1.0 (a), (b), (c) and (d). These attributes (age, GPA, gender and pre-board grade) were used as predictors in identifying the probable performance of students before taking the test. The file was loaded into the tool to apply the linear regression technique and as a result, students who pass or fail the exam have been identified and the possible percentage rate from the batch of students was determined which is an interpretation if the institution will or will not qualify for the national passing rate.

Table 1 (a): Defines the age data field used as a valid variable. It is used to identify the age of board takers which is considered as a factor in determining student performance.

Table 1(b): Defines the GPA or Grade Point Average of the student at the end of the program. It is used to determine the academic performance of the student before taking the board exam.

Table 1(c): Defines the gender of the board taker. It consists of nominal values only.

Table 1 (d): Defines the pre-board exam scores which could be the basis of student performance during the review process. Scores were taken before taking the actual board exam.

Table 1 (a) Age data field

Data Name	Age
Description	Age of the board taker
Data Types	Number [NUMERIC]
Length	2
Format	0-9
Use in	Determine the age of the board takers

Table 1 (b) GPA data field

Data Name	GPA
Description	GPA of board takers
Data Types	Number [NUMERIC]
Length	3
Format	0-9
Use in	Determine the GPA of the board takers

Table 1 (c) Gender data field

Data Name	Gender
Description	Gender of board takers
Data Types	VARCHAR
Length	1
Format	m/f
Use in	Determine the gender of the board takers

Table 1 (d) Pre-board data field

Data Name	Preboard
Description	Preboard grade of the examinee
Data Types	Number [NUMERIC]
Length	3
Format	0-9
Use in	Determine the grade of the board takers in Preboard

Figure 2: Illustrates the data flow of the proposed tool which started from the import historical data that has the records of the students who previously took the board exam. The tool only accepts the correct file that is saved in *.XLS* format and rejects the incorrect file. Then, data are plotted into a relation named as SPerformance where linear regression technique is applied. Finally, the predicted class result (Pass or Fail) is generated as well as the computed percentage rate.

Figure 2.0 Data flow diagram of predictive tool

RESULTS AND DISCUSSION
This part consists of two parts: Predictive tool screenshots and the Model evaluation using a machine learning tool to determine the accuracy of the proposed prediction tool.
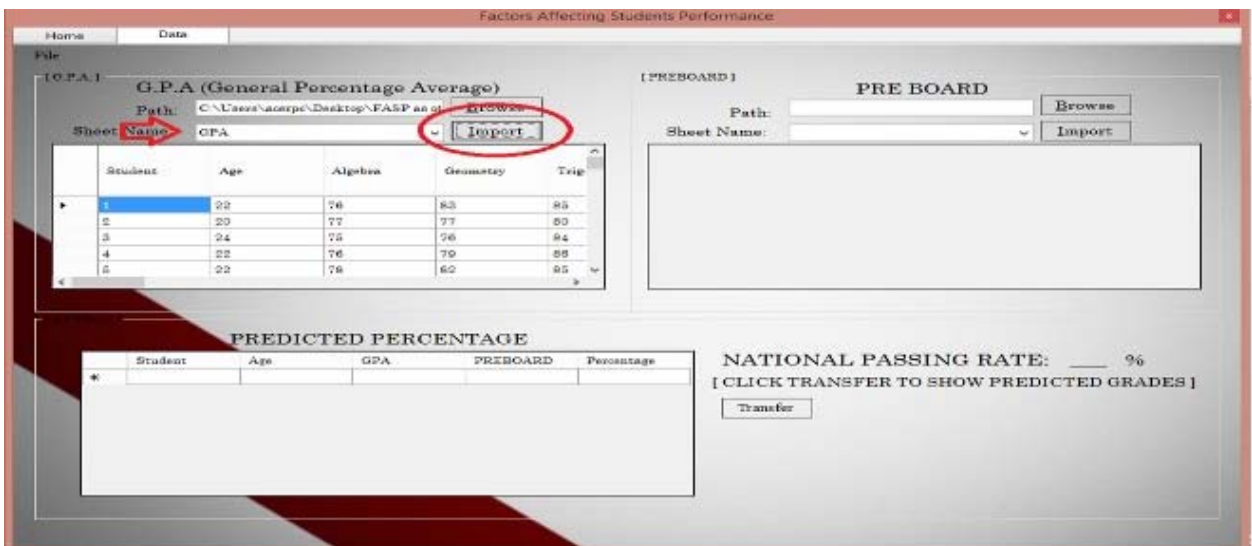
Predictive Tool
The following illustrations are presentation capability of the predictive prototype that was developed and presented as Figure 3, Figure 4, Figure 5 and Figure 6.

Figure 3: The loading window allows the user to open a file that is to be evaluated. The file contains the records of probable students who will take the board exam.

Figure 3.0 File loading window

Figure 4: A valid file will be loaded into a sheet table presented in columns and rows.

Figure 4.0 GPA loading window
Figure 5: Pre-board data was also loaded into the sheet table for evaluation vis-à-vis with the GPA records of the students
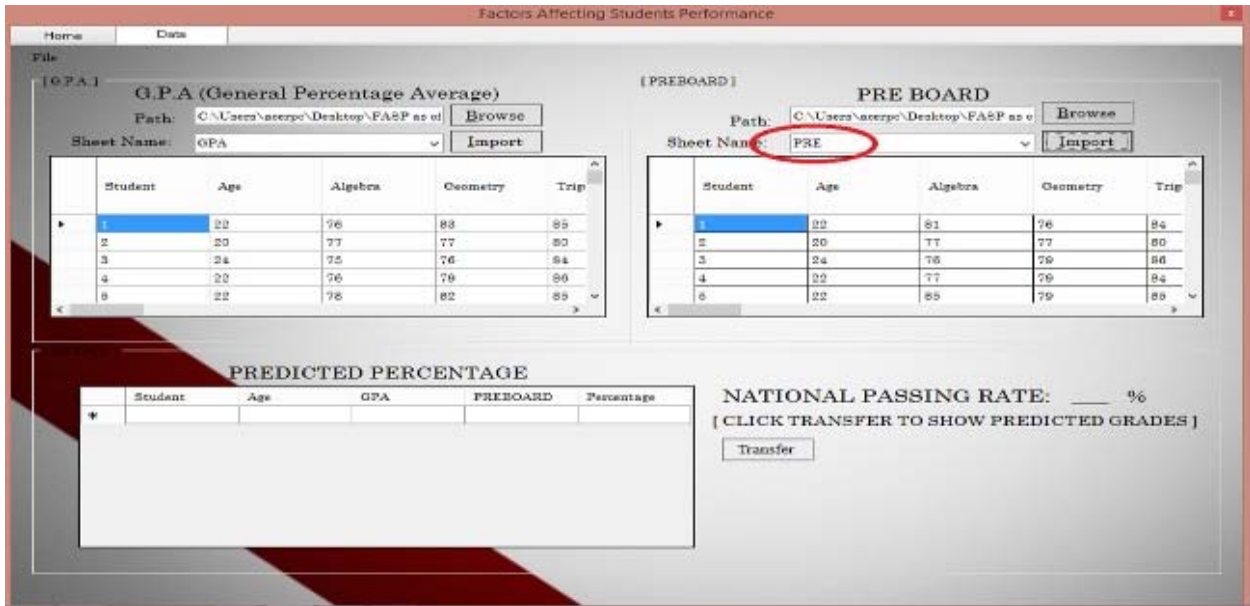
Figure 5.0 Pre-board file window

Figure 6.0: The "Transfer" button will evaluate GPA data with that of Pre-board data and the predicted percentage will be displayed which identifies the possible students who will pass or fail the exam. Based on the predicted percentage from a pool of data, the probable percentage rate will also be displayed to determine if the institution meets the required national passing rate.
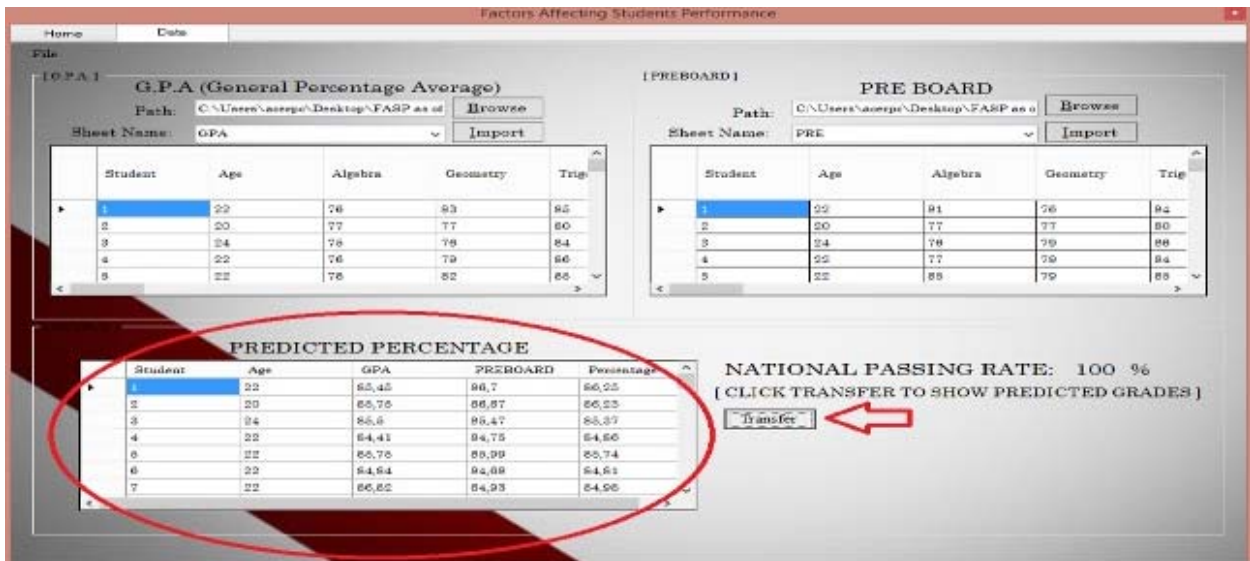

Figure 6.0 Final predicted result

MODEL EVALUATION
Data was evaluated using WEKA which is a machine learning tool from WAIKATO University, with the implementation of training set as a test option.

Table 2: Defines the Correlation Coefficient having a value ranging from +0.70 to +0.99 means there is a strong relationship between the actual value and the predicted value. Both the Mean Absolute Error (MAE) and Root Mean Squared Error (RMSE) can range from 0 to ∞ and lower values show better results.

Table 2.0 Evaluation result using WEKA

TRAINING SET	
Correlation Coefficient	0.7003
Mean Absolute Error	8.5073
Root Mean Squared Error	10.3021

CONCLUSION AND RECOMMENDATION

With the new prediction tool, institutions can forecast the number of possible board passers from a batch of examinees and can also determine the percentage of passing rate. Results also revealed that factors such as age, gender, GPA and pre-board results can be used as determinants in predicting students' licensure examination performance. However, recommendations are advised such as:

- Implementation of other data mining techniques for prediction other than regression analysis
- Use of a larger dataset to be assessed using the proposed predictive tool to determine the behavior of the proposed tool
- Other factors to be considered as determinants for prediction

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