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**Contact Address:**

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## Message from the Editor-in-Chief

### Hello from TOJNED

TOJNED welcomes you. TOJNED looks for academic articles on the issues of education science and teacher education. TOJNED contributes to the development of both theory and practice in the field of education science and teacher education and accepts academically robust papers, topical articles and case studies that contribute to the area of research in education science and teacher education.

The aim of TOJNED is to help students, teachers, academicians, scientists and communities better understand the development of education science and teacher education. The submitted articles should be original, unpublished, and not in consideration for publication elsewhere at the time of submission to TOJNED. It provides perspectives on topics relevant to the study, implementation of education science and teacher education.

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 will organize two international conferences. INTE (International New Horizons in Education – [www.int-e.net](http://www.int-e.net)) will be held between July 18-20, 2018 in Paris, France. ITEC (International Teacher Education Conference - [www.ite-c.net](http://www.ite-c.net)) will be held between August 8-10, 2018 in Indiana University, Bloomington, In, USA.

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

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## ANALYSIS AND DISCOVERY MODEL FOR LEARNING YELLOW BOOK IN PESANTREN

Apdoludin

Jambi University, Indonesia  
apdoludinludin@gmail.com

Mujiyono WIRYOTINOYO  
Jambi University, Indonesia

Hadiyanto  
Jambi University, Indonesia

### ABSTRACT

This study aimed to determine the effect of the Analysis and Discovery (AD) model in learning Yellow Book in pesantren (Islamic Boarding School) to improve students' critical thinking skills in order to find new knowledge. This was a research development or Research and Development (R & D) and continued with experiment. It was conducted in class XI of Pesantren Al-Hidayah Jambi, Saadatuddaren Tahtul Yaman Jambi and Nurul Iman Jambi. This study used two parallel classes, one class as a control group and one class as an experimental group. In this case, the classroom control applied conventional learning model and experimental class applied analysis and discovery model. As the result, analysis and discovery model can further improve students' critical thinking ability than conventional learning model which meant that analysis and discovery model in studying Yellow Book can improve critical thinking skills effectively in order to find new knowledge for each study. Through the assisted teacher of analysis and discovery model in the classroom, learning takes place more systematically implemented and significant in improving students' understanding and critical thinking skills.

**Keywords:** analysis, discovery, pesantren, yellow book

### INTRODUCTION

Pesantren is a vehicle for channeling and studying the Yellow Book by scholars' work and Muslim scholars conducted by pesantren for the development of thought and morals of the Islam generation in the future. However, the learning model applied in the learning process is sometimes not appropriate, for example; the use of less appropriate learning model, preparation of less systematic material and the inappropriate use of time. One of the most important elements in learning Yellow Book in pesantren is the sentence / syntax or called *nahwu*, or *qawa'id* which is one of the sciences to understand *tafsir*. Syntax is the grammar discussing the relationship between words in speech (Verhaar 2006). According to Dahdah (1993), syntax in Arabic is synonymous with the term *al nachw* (النحو). While Hermawan (2011) states that *tarakib* or sentence is also one of the linguistic problems faced by non-Arab communities in learning Arabic.

The experience of researchers during the seven years of study in pesantren who have spent thirteen years teaching in various pesantren, it cannot be denied that the phenomenon occurred in pesantren until the current time, the learning process is still the same as before, such; the learning process applied in pesantren is centered on the teacher, students are only told to *mendhobit*, record and memorize *matan* book, learning only examines the basis Yellow Book, it is not profound, students are rarely given the opportunity to solve problems independently, and students are not trained to argue and analyze the learning materials in depth and not given refutation to the teacher.

In accordance with the statement of Lie (2002), and Suryani, Atmaja, and Natajaya (2013), teachers using conventional learning models and dominated by teachers will result in low active student. Based on the statement and the writer's experience, the development of instructional device oriented to the learning model is needed. One of the alternative models in learning Yellow book is to apply the Analysis and Discovery (AD) model. Learning with this model can improve student activity and learning outcomes, and able to analyze the material in depth based on the ability of reasoning or analysis by using logic and heart.

Nahar (2016), Chiu et al. (2002), Zulhammi (2015), Rusli and Kholik (2013), Zulhammi (2015), Son, Syahrudin, and Widiana (2014), Slavin (2000), Atwi (2012), Shah (2004), and Sanyata (2012) who conveyed the theory of behavioristic learning explain that learning is a behavior change that can be observed, measured and assessed concretely. Changes occur through stimuli engendered a reactive behavioral relationship or response based on mechanistic laws. Stimulants are from learning environment of children, both internal and



external. Meanwhile, the response is a result or an impact, a physical reaction to stimulants. Learning means strengthening the bonds, associations, traits and behavioral responses stimulus (Richar & Rebeca, 2005).

In short, it could be concluded that learning is a behavioral change that can be observed directly occurring through the related stimuli and responses according to mechanistic principles. Individuals will learn whether they do action that brings satisfaction, whether it does not bring satisfaction, then it will not be carried out, even eliminated.

In addition, Piaget (1964), Atwi (2012), and Muzakkir (2014) notice that building knowledge is a mental process through assimilation and accommodation. The imbalance of the cognitive structure (schemata) due to new knowledge is accommodated and then assimilated by interacting with learning resources to form a new, balanced cognitive structure (equilibrium). This process is different for every child due to five things; maturation, physical interaction experience, logical-mathematics experience, social interaction, and equilibrium through assimilation and accommodation process.

Hence, it is clear that cognitive flow is more focus on learning process as a result of our efforts to better understand the world, using all mental equipments for learning purposes. Thinking about situations, by utilizing knowledge, expectations, and feelings, will affect how and what we learn. Furthermore, there are two striking different views; behaviorism flow and cognitive flow. Behaviorism flow is deliberately studied, resulting in changes in the behavioral constellation. While in cognitive flow, knowledge is learned to change knowledge as well as behavior.

Further, Muslich (2009), Alan and Woollard (2010), and Sumarsih (2009) add that constructivism is a learning process that emphasizes the awakening of their own understanding actively in thinking, creatively in conceptualizing and productively in distributing meaning about things learned based on previous knowledge and from a meaningful learning experience. Knowledge is not a set of facts, concepts, and rules that are ready to be practiced. The human must construct knowledge first and give meaning through real experience. Knowledge cannot be moved simply from a teacher's scheme to his student scheme (Purnomo, 2011). Each student must build knowledge in his or her own scheme. The ability to think and create knowledge is a potential that can be developed (Puangtong & Petchtone, 2014). Putrayasa (2011) and Nurhajati (2014) argue that learning in a constructivist view is directed more towards the formation of meaning in learners for what they learn based on their previous knowledge and understanding. Additionally, learning will be meaningful with a clear purpose, it allows people involved in it to carry out more meaning to the world around them. Learning more realistic things is characterized by more active, constructive, intentional, authentic and cooperative learning (Berry, 2012).

Indeed, based on constructivism theory, students acquire knowledge due to the activeness of the students themselves. The concept of learning according to constructivism theory is a learning process that conditions students to perform an active process of building new concepts, new insights, and new knowledge based on the data. Therefore, the learning process must be designed and managed in such a way to encourage students organizing their own experiences into meaningful knowledge.

Furthermore, Bruce (2011), Mahyudin (2014), Winataputra (2005), Arends, (2010), and Apdoludin (2017) also add that learning model is a planning or a pattern used as a guide in planning classroom lessons or learning in tutorials to determine learning tools including books, films, computers, curriculum, etc. Learning model is a conceptual framework describing a systematic procedure in organizing learning experiences to achieve specific learning goals, and serves as a guide for learning designers and teachers in planning and executing learning activities (Winataputra, 2005). It is also a conceptual framework describing a systematic procedure in organizing learning experiences to achieve certain learning objectives and serves as a guide for learning designers and teachers in designing and implementing the process of learning.

According to Solihatin and Raharjo (2007), Purnamasari (2014), Kumara (2004), and Hermana (2010), basically cooperative learning implies an attitude or behavior together in work or assists among others in a regular group structure of cooperation, consisting of two or more persons where success is greatly influenced by the involvement of each member of the group itself. It can also be interpreted as a common task structure in an atmosphere of togetherness among fellow group members. Arends (2004, p. 356) notices "The three instructional goals of cooperative learning are academic achievement, tolerance and acceptance of diversity, and development of social skills." The accelerator explains that cooperative learning model is very helpful for students in growing cooperation, critical thinking, helping group friends in understanding the material and completing the tasks together.

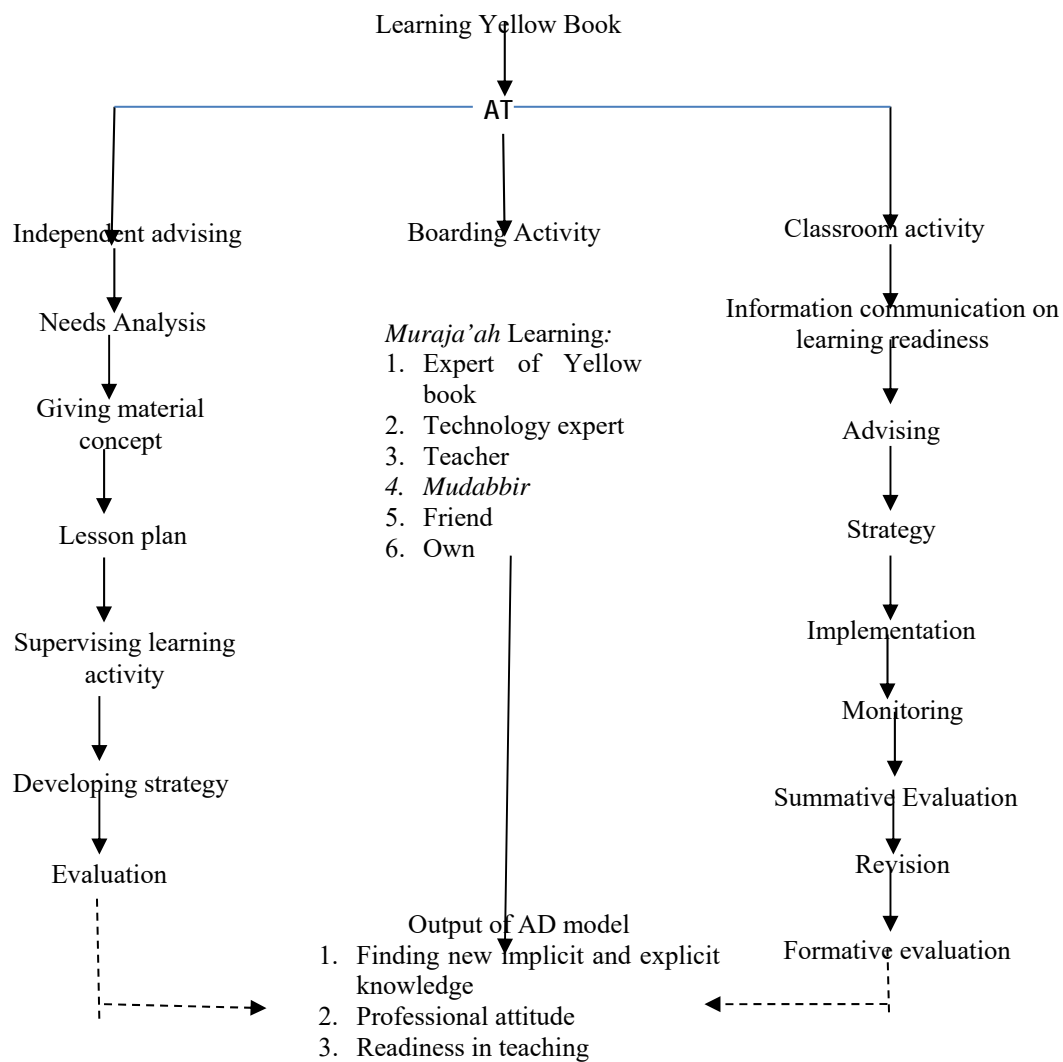
Contextual learning aims to help learners understand the subject matter they are learning by connecting the subject matter with its application in daily life (Yamin, 2011; Sanjaya, 2007; Muslich, 2009). It means that the model of learning CTL is a learning concept involving students to see the meaning of the material learned and relates it to real life situations that encourages students to apply it in their lives. Problem based instruction is a constructivist-based learning model that accommodates students' involvement in authentic learning and problem solving (Arends et al., 2001; Amelia, Hartono, & Sari, 2014). In grabbing information and developing an understanding of topics, students learn how to construct problem frameworks, organize and investigate problems, collect and analyze data, construct facts, and construct arguments about problem solving, individual work or collaboration in solving problem.

On the other hand, Problem Based Learning (PBL) is a learning process delivered by way of presenting a problem, asking questions, facilitating an investigation, and opening a dialogue (Masek & Sulaiman, 2011; Khumsikiew, Donsamak, & Saeteaw, 2015; Rudtin, 2013; Kartikasari et al., 2015; Daryanto, 2014). In short, it is a strategy used in problem based learning, in learning process of students formed group, then given problems discussed with the group created, so the students can play actively, critical thinking, and exchange ideas in solving problems.

**The analysis and discovery (AD) model in learning yellow book**

The concept referred to as syntax illustrates how Analysis and Discovery model provides concrete experience in three core stages having several different phases and characteristics to gain more experience. The framework concept on the development of this model and the implementation strategy can be seen in the following figure;

**Figure1: AD model for learning yellow book**



Supportive social system in the Analysis and Discovery (AD) model is cooperation, intellectual freedom, and group equality. In the process of cooperation, student interaction is forced and encouraged. The intellectual environment is characterized by an open nature of relevant ideas. The participation of teachers and students in learning is based on equality paradigm in accommodating all developing ideas.

**Role or duty of teacher**

*Taba* provides guidance to teachers in responding at every stage of instruction. When using cognitive tasks in every teaching strategy, teachers must be confident that these cognitive tasks come with optimal instruction and also at the right time. Organizing tasks requires the teacher to review the whole set of data before categorizing, and proceed with looking for relationships. The main mental task of the teacher in working of these strategies is to monitor how students process information and then ask relevant questions. An important task for teachers is to feel the readiness of students to experience new experiences and cognitive activities by assimilating and using these experiences.

**Supporting System**

The supporting system in the Analysis and Discovery (AD) model is everything that students need to be able to dig up appropriate information in achieving learning objectives, such as student worksheets, instructional media, and books or supporting books. The main application of the supporting system of the Analysis and Discovery (AD) model is to develop thinking capacity. Students should be required to digest and process information. This model can be applied in learning Yellow Book in pesantren. Inducing students to go beyond the data provided is a conscious effort to improve productive and creative thinking patterns. Inductive processes then include creative information processing, such as convergent use of information to solve problems.

**Learning effect in using analysis and discovery model**

Learning Effect with the Analysis and Discovery (AD) model is a deeper understanding of the concept in students' mind to find implied knowledge, professional attitude, and preparedness of preaching. While an escort effect is to increase the enthusiasm of students in learning Yellow Book, and to raise the critical attitude and habits of students' creative thinking.

**METHODOLOGY**

**Participants**

The method used in this study was the development model or Research and Development (R & D) followed by experiment (Borg & Gall, 1983; Gay, 1990; Plomp, 1997). This study was carried out in one of pesantren in Jambi named Pondok Pesantren Sa'adatuddarein.

**Instrument**

The research instruments used are test and questionnaire (Nurgiyantoro, 2001; Sudaryono, 2016; Sukardi, 2003; & Widoyoko, 2014). Preliminary tests were performed to determine the students' learning knowledge before being treated. The final test was conducted to find out the knowledge and debate skills as well as the material analysis by the students after being treated. This test was performed before the treatment (pre- test) and after being treated (post-test), for both the experimental group and control group (Creswell, 2009).

**Table 1:** Research design of control group (pre- test and post- test)

Group	Pre- test	Perlakuan	Post- test
1	2	3	4
Exsperimental	O <sub>1</sub>	X <sub>1</sub>	O <sub>2</sub>
Control	O <sub>3</sub>	X <sub>2</sub>	O <sub>4</sub>

**Note:**

- O<sub>1</sub> : Pre- test of experimental group
- O<sub>2</sub> : Post- test of experimental group
- O<sub>3</sub> : Pre- test of control group
- O<sub>4</sub> : Post- test of control group
- X<sub>1</sub> : Learning Yellow Book by using Analysis and Discovery model
- X<sub>2</sub> : Learning Yellow Book by using conventional model

**Data procedure and analysis**

Collecting data in order to get empirical data on learning Yellow Book in Pesantren Sa'adatuddarein was carried out after formulating the issue. The data were used to arrange learning model design developed. The empirical data were collected from the third grade students in Pesantren Sa'adatuddarein Tahtul Yaman in Jambi.

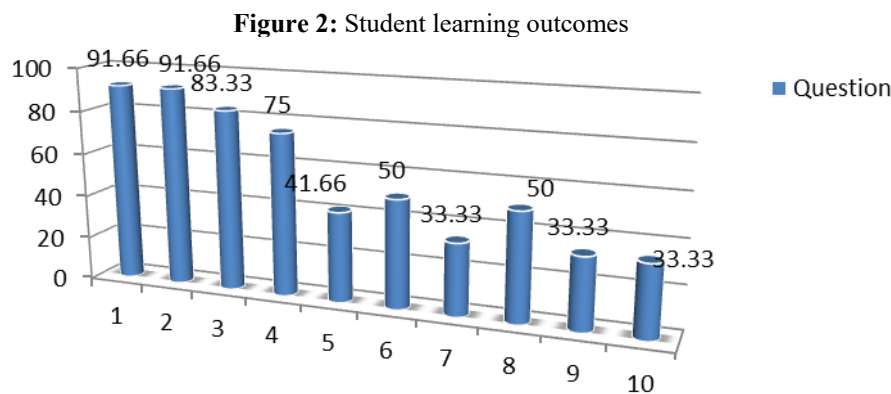
**Table 2:** Research design of control group (pre- test and post- test)

Group	Pre- test	Perlakuan	Post- test
1	2	3	4
Exsperimental	0 <sub>1</sub>	X <sub>1</sub>	0 <sub>2</sub>
Control	0 <sub>3</sub>	X <sub>2</sub>	0 <sub>4</sub>

## RESULTS

### Students' results on a limited trial

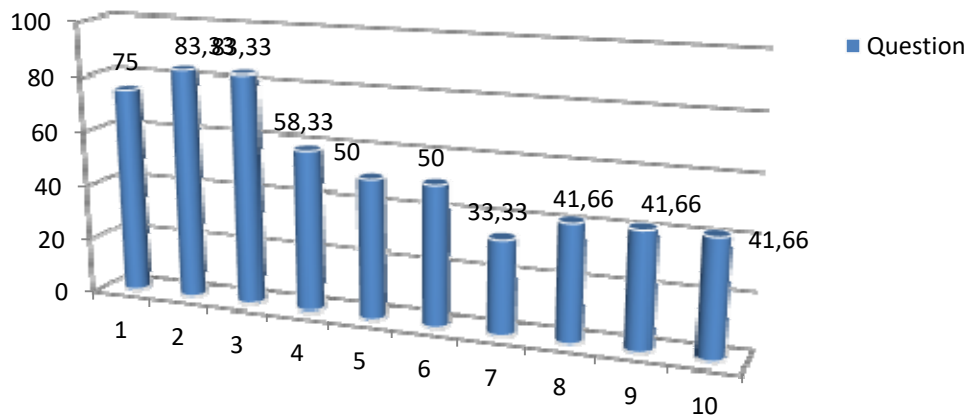
The students' results in class XI A on *tafsir* subject in pesantren Saadatuddaren was shown by the average score of 58.33 from 13 students. The first question with the score reached 91.66%, the second question with the score reached 91.66%, the third question with the score reached 83.33%, the fourth question with the score reached 75.00%, the fifth question with the score reached 41.66% , the sixth question with score reached 50.00%, the seventh question with the score reached 33.33%, the eighth question with the score reached 50.00%, the ninth question with the score reached 33.33%, and the last question with the score reached 33.33 %. Student learning outcomes (%) of each item can be seen in Figure 2 below:



Based on figure 2, the results (%) of student learning in class XI A as the user of Analysis and Discovery model in learning process of Yellow Book on *nahwu* subject in pesantren Sa'adatuddarein.

The results of class XI A on *nahwu* subject in pesantren Saadatuddaren was shown by the average score of 55.83 from 13 students. The first question with the score reached 75.00%, the second question with the score reached 83.33%, the third question with the score reached 83.33%, the fourth question with the score reached 58.33%, the fifth question with the score reached 50.00% , the sixth question with score reached 50.00%, the seventh question with the score reached 33,33%, the eighth question with the score reached 41,66%, the ninth question with the score reached 41,66%, and the last question with the score reached 41,66 %. Student learning outcomes (%) of each item can be seen in Figure 3 below.

**Figure 3:** Student learning outcomes



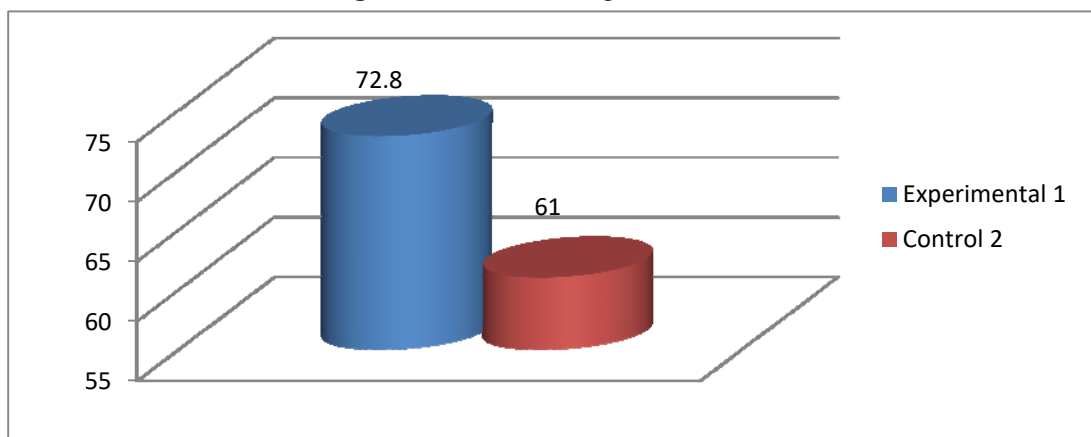
Based on figure 3, the results (%) of student learning in class XI A as the user of Analysis and Discovery model in learning process of Yellow Book on *nahwu* subject in pesantren Sa'adatuddarein.

**Experiment data result**

Students' learning outcomes on *nahwu* material for experimental class using the Analysis and Discovery (AD) model in Pesantren Saadatuddaren, for the maximum achievement score was 90 and the minimum achievement score was 50 with the average score of 72.80 . From 25 students in class XI A, there were 18 complete students and 7 incomplete students. For student learning outcomes in control class that did not use the Analysis and Discovery (AD) model, the maximum achievement score was 80 and the minimum achievement score was 30 with an average score of 61.00. Out of 30 students in class XI B, there were 18 complete students and 12 incomplete students. Thus, the experimental class is higher complete than the control class.

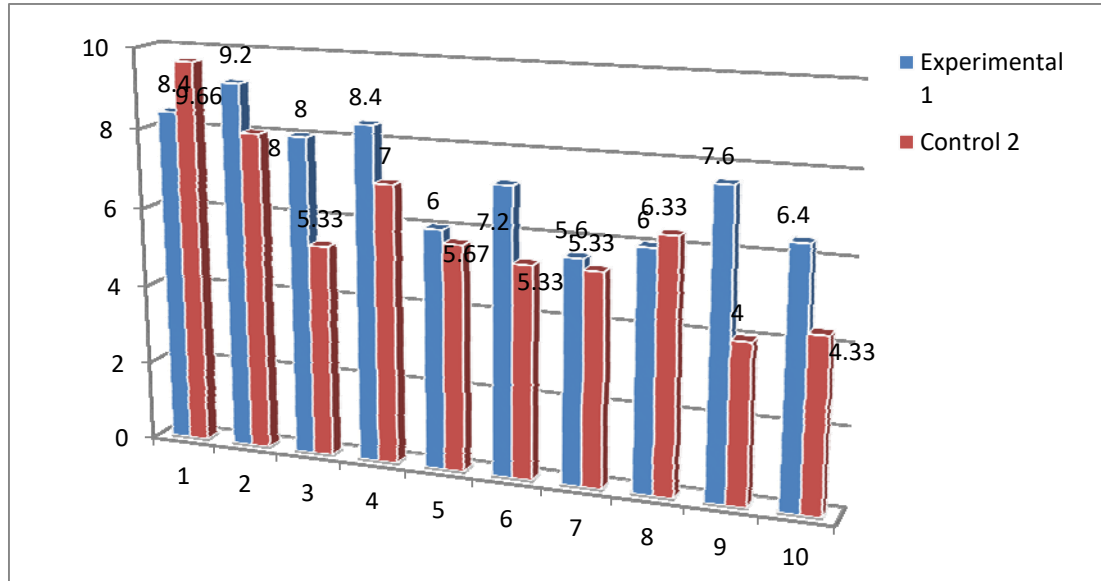
Therefore, hypothesis in this study that there was the difference between student learning result in a class using the Analysis and Discovery (AD) model and a class not using this model in learning process of Yellow Book on *nahwu* subject in Pesantren Sa'adatuddaren. The difference is indicated by the average score of student learning outcomes of 72.80 on completion of learning outcomes on each item in the experimental class and 61.00 completion of learning outcomes on each item in the control class as shown in Figure 4 below:

**Figure 4:** Student learning outcomes



Based on figure 4, there was the difference between the results of student learning in class XI A as the user of the Analysis and Discovery (AD) model and class XI B that does not use the Analysis and Discovery (AD) model in the learning process of Yellow Book on *nahwu* subject in Pesantren Sa'adatuddaren. This difference can be determined by comparing the average score of student learning outcomes in an evaluation test activity on each item between the experimental class and the control class as described in Figure 5 below:

**Figure 5:** The experimental class and the control class

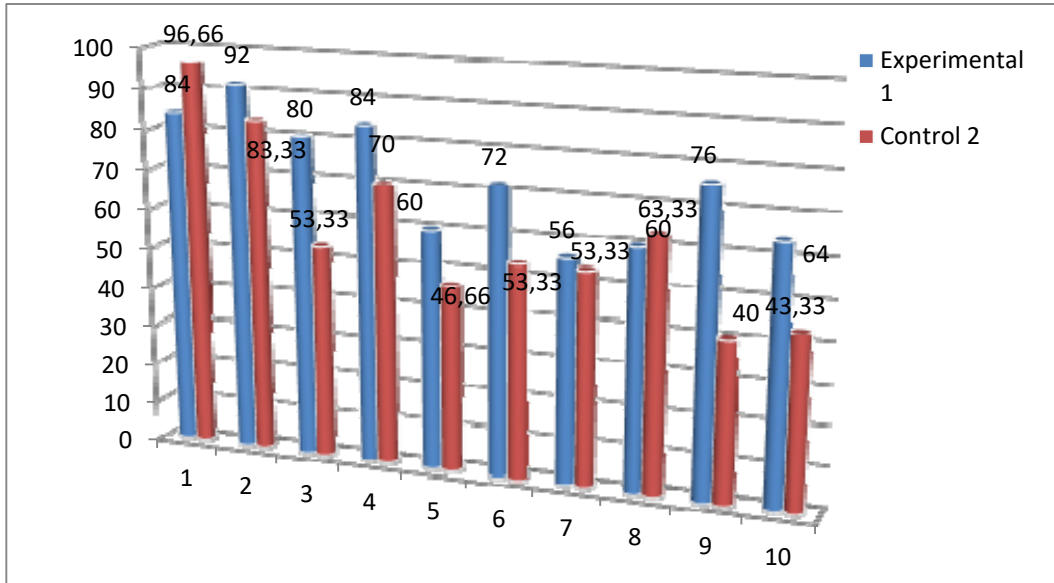


Based on the figure above, it showed the average score of student learning outcomes on the first, second, third, fourth, fifth, sixth, seventh, eighth, ninth and tenth. There was the difference in learning outcomes in the experimental class taught by using the Analysis and Discovery (AD) model and in the control class that does not use the Analysis and Discovery (AD) model.

The first question with the achievement score of experimental class reached 84.00% and control class reached 96.66%, the second question with the achievement score of experimental class reached 92.00% and control class reached 83.33%, the third question with the achievement score of experimental class reached 80.00% and control class reached 53.33%, the fourth question with the achievement score of experimental class reached 84.00% and control class reached 70.00%, the fifth question with the achievement score of experimental class reached 60.00% and control class reached 46.66% , the sixth question with the achievement score of experimental class reached 72.00% and control class reached 53.33%, the seventh question with the achievement score of experimental class reached 56.00% and control class reached 53.33%, the eight question with the achievement score of experimental class reached 60.00% and control class reached 63.33%, the ninth question with the achievement score of experimental class reached 76.00% and control class reached 40.00%, and the last question with the achievement score of experimental class reached 64.00% and control class reached 43.33% .

Comparison scores of student achievement result (%) from each item between an experimental class and control class can be seen in figure 6 below:

**Figure 6:** The experimental class and the control class

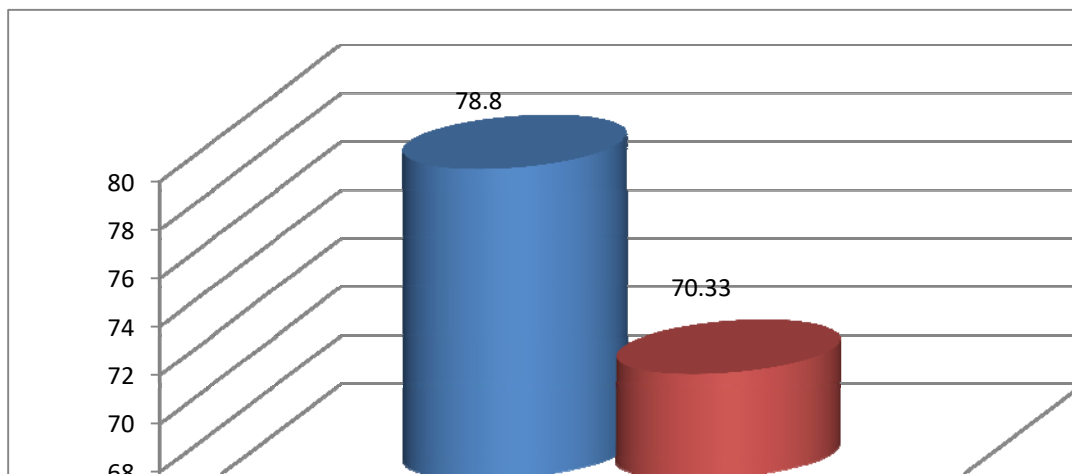


Based on the figure above, there was the difference between the result (%) of student learning in class XI A as the user of the Analysis and Discovery (AD) model and class XI B which does not use the Analysis and Discovery (AD) model in in learning process of Yellow Book on *nahwu* subject in Pesantren Sa'adatuddaren.

Students' learning outcomes on *nahwu* material for experimental class using the Analysis and Discovery (AD) model in Pesantren Saadatuddaren, for the maximum achievement score was 90 and the minimum achievement score was 60 with the average score of 78.80 . From 25 students in class XI A, there were 20 complete students and 5 incomplete students. For student learning outcomes in control class that did not use the Analysis and Discovery (AD) model, the maximum achievement score was 80 and the minimum achievement score was 60 with an average score of 70.33. Out of 30 students in class XI B, there were 20 complete students and 10 incomplete students. Thus, the experimental class is higher complete than the control class.

Furthermore, hypothesis in this study that there was the difference between student learning result in a class using the Analysis and Discovery (AD) model and a class not using this model in learning process of Yellow Book on *nahwu* subject in Pesantren Sa'adatuddaren. The difference is indicated by the average score of student learning outcomes of 78.80 on completion of learning outcomes on each item in the experimental class and 70.33 completion of learning outcomes on each item in the control class as shown in Figure 7 below:

**Figure 7:** Completion of learning outcomes on each item in the experimental class



Based on figure 4, there was the difference between the results of student learning in class XI A as the user of the Analysis and Discovery (AD) model and class XI B that does not use the Analysis and Discovery (AD) model in the learning process of Yellow Book on *nahwu* subject in Pesantren Sa'adatuddaren. This difference can be

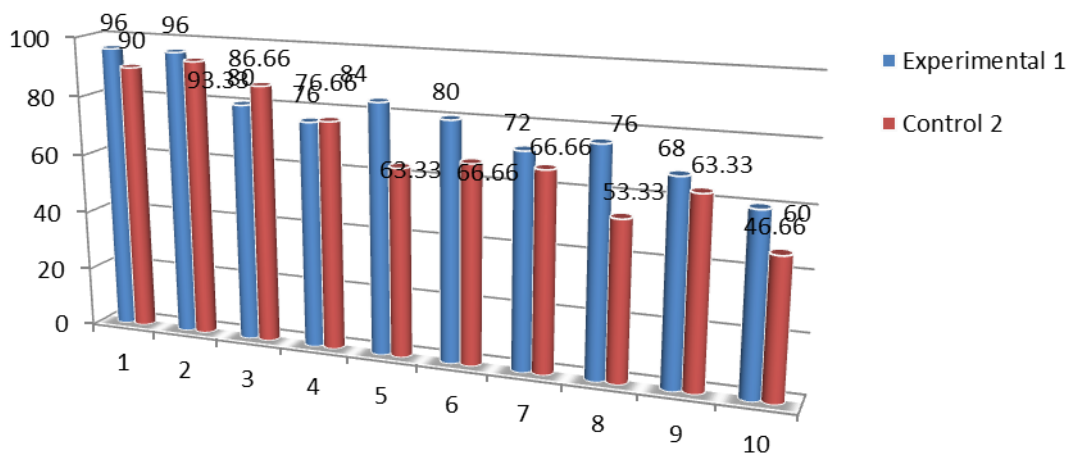
determined by comparing the average score of student learning outcomes in an evaluation test activity on each item between the experimental class and the control class.

Based on the figure above, it showed the average score of student learning outcomes on the first, second, third, fourth, fifth, sixth, seventh, eighth, ninth and tenth. There was the difference in learning outcomes in the experimental class taught by using the Analysis and Discovery (AD) model and in the control class that does not use the Analysis and Discovery (AD) model.

The first question with the achievement score of experimental class reached 96,00% and control class reached 90,00%, the second question with the achievement score of experimental class reached 96,00% and control class reached 93,33%, the third question with the achievement score of experimental class reached 80,00% and control class reached 86,66%, the fourth question with the achievement score of experimental class reached 76,00% and control class reached 76,66%, the fifth question with the achievement score of experimental class reached 84,00% and control class reached 63,33% , the sixth question with the achievement score of experimental class reached 80,00% and control class reached 66,66%, the seventh question with the achievement score of experimental class reached 72,00% and control class reached 66,66%, the eighth question with the achievement score of experimental class reached 76,00% and control class reached 53,33%, the ninth question with the achievement score of experimental class reached 68,00% and control class reached 63,33%, and the last question with the achievement score of experimental class reached 60,00% and control class reached 46,66% .

Comparison scores of student achievement result (%) from each item between an experimental class and control class can be seen in figure 8 below:

**Figure 8:** Comparison scores of student achievement result



Based on the figure above, there was the difference between the results of student learning in class XI A as the user of the Analysis and Discovery (AD) model and class XI B that does not use the Analysis and Discovery (AD) model in the learning process of Yellow Book on *nahwu* subject in Pesantren Sa'adatuddaren.

## CONCLUSION

Students' learning outcomes on *nahwu* materials for experimental class using the Analysis and Discovery (AD) model in Pesantren Sa'adatuddaren Tahtul Yaman in Jambi showed that the maximum achievement score was 90 and the minimum achievement score was 50 with a total score of 72.80. Of the 25 students in class XI A, there were 18 complete students and 7 incomplete students. For students' learning outcomes in the control class in which did not use the Analysis and Discovery (AD) model, the maximum achievement score was 80 and the minimum achievement score was 30 with an average score of 40.00. Of the 30 students in grade XI B, there were 18 complete students and 12 incomplete students.

Students' learning outcomes on *Tafsir* material for the experimental class using the Analysis and Discovery (AD) model in Pesantren Saadatuddaren Tahtul Yaman in Jambi revealed that the maximum performance score was 90 and the minimum achievement score was 60 with an average score of 60.00. Of the 25 students in class XI A, there were 20 complete students and 5 incomplete students. For students' learning outcomes in the control class in which did not use the Analysis and Discovery (AD) model, the maximum achievement score was 80 and the



minimum achievement score was 60 with an incomplete average score of 60.00. Of the 30 students in class XI B, there were 20 complete students and 10 incomplete students.

In conclusion, field test results showed that there was a significant increase and difference between the experimental class by using the Analysis and Discovery (AD) model and the control class by using the conventional model.

## REFERENCES

- Chiu, M. L., Chiu, M. H., & Ho, C. Y. (2002). *Using cognitive-based representations to diagnose students' conceptions of the characteristics of matter. Proc Natl Sci Coun ROC (D)*, 12 (3), 91–99.
- Richard, F., Rebeca, B. (2005). Understanding student differences. *Journal of Engineering Education*, 94 (1), 57-72.
- Alan, P., & John, W. (2010). Psychology for the classroom: Constructivism and social learning, *Library of Congress Cataloging-in-Publication Data*.
- Al-Munawwir, A.W. (2002). *Kamus Arab Indonesia Terlengkap*. Surabaya: Pustaka Progressif.
- Amelia, A., Hartono & Sari D. K. (2014). Penerapan model Problem Based Instruction (PBI) untuk meningkatkan keterampilan proses sains di Sekolah Menengah Atas. *Jurnal Pendidikan Kimia*, 1(1), 1-8.
- Apduludin & Mujiyono, W. (2017). Model DAT dalam Pembelajaran Kitab Kuning di Pesantren. *Jurnal Ilmiah Universitas Batanghari Jambi*, 17 (1), 14-27.
- Apduludin, Saidek A. R., & Islami R. (2016). Model debate for the Yellow Book Learning in Islamic Boarding School. *Journal of Education and Practice*, 7(23),1-7.
- Arends, R. I., Wenitzky, N. E., & Tannenboum, M. D. (2001). *Exploring teaching: An introduction to education*. New York: McGraw-Hill Companies.
- Arrends. (2004). *Learning to teach*. Sixth Edition. United States of America: The McGraw Hill Companies.
- Atwi, S. (2012). *Desain instruksional modern*. Jakarta: Erlangga
- Berry, B. (2010). *Teaching 2030*. New York: Teacher College Press.
- Borg, W. R., & Gall, M. D. (1983). *Educational research*. New York & London: Longman.
- Bruce, J., Marsha, W., & Emily, C. (2009). *Models of Teaching*. Edisi Kedelapan. Allyn and Bacon.
- Bruce, J., Marsha, W., & Emily, C. (2011). *Models of teaching model-model pengajaran*. Yogyakarta : Pustaka Pelajar.
- Bruinessen & Van, M. (2015). In The Tradition or Outside Reflections on Teachers and Influences. *Journal of Islamic Studies*, 53(1), 53-103.
- Daryanto. 2009. *Panduan proses pembelajaran kreatif dan inovatif*. Jakarta: AV Publisher.
- Dick, Walter, Carey., & Lou. (2001). *The systematic design of instructional*. USA: Scott Foresman and Company.
- El-Dahdah, A. (1993). *Encyclopedia of Arabic grammar: A dictionary of Arabic in chart and tables*. Beirut: Librarie du Liban Publishers.
- Etin, S., & Raharjo. (2007). *Cooperative learning analisis model pembelajaran IPS*. Jakarta: Bumi Aksara.
- Gay, L. R. (1990). *Educational evaluation and measurement, competencies for analysis and application*. New York: Macmillan Publishing Compan.
- Hadiyanto. (2010). The development of core competencies at Higher Education: A suggestion model for universities in Indonesia. *International Journal for Educational Studies*, 3(1),11-22.
- Hermana, D. (2010). Pengantar Lesson Study: *Makalah seminar internasional lesson study untuk peningkatan pedagogik guru di IAIN Walisongo Semarang, 7 Maret 2010*.
- Hermawan, A. (2011). *Metodologi pembelajaran bahasa Arab*. Bandung: Remaja Rosdakarya.
- Kartikasari, I., Rusdi, M., & Asyhar, R. (2016). A problem-based instructional design model construction and validation to develop students' creativity. *Jurnal Edu- Sains*, 5(1),56-68.
- Khumsikiew, J., Donsamak, S., & Saeteaw, M. (2015). A model of small-group problem-based learning In Pharmacy Education: Teaching in the Clinical Environment. *Journal of Education*, 3 (2), 95-108.
- Krulik, S., & Rudnick, J. A. (1996). *The new sourcebook for teaching reasoning and problem solving in Junior and Senior High School*. Boston: Allyn and Bacon.
- Kumara, A. (2004). Model pembelajaran "Active Learning" mata pelajaran sains tingkat SD Kota Yogyakarta sebagai upaya peningkatan "Life Skills". *Jurnal Psikologi*, 2, 63-91.
- Lie, A. (2002). *Cooperative learning: Mempraktekkan Cooperative learning di ruang-ruang kelas*. Jakarta: Gramedia
- Mahyudin, E. (2014). Model pembelajaran diskoveri sebagai strategi pembelajaran bahasa Arab, *Arabiyat Jurnal Pendidikan Bahasa Arab dan Kebahasaan*, 1(2), 196-208.
- Masek, A., & Sulaiman Y. (2011). The effect of problem based learning on critical thinking ability: A theoretical and empirical review. *International Review of Social Sciences and Humanities*, 2 (1), 215-221.
- Muslich & Mansur. (2009). *KTSP Pembelajaran berbasis kompetensi dan kontekstual*. Jakarta: Bumi Aksara.

- Muzakkir, Sansudi., & Rifa'I, A. (2014). Pengembangan perangkat pembelajaran berbasis inkuiri berbantuan multimedia untuk meningkatkan hasil belajar Geografi. *Innovative Journal of Curriculum and Educational Technology* 3(1), 1-7.
- Nahar, N. I. (2016). Penerapan teori belajar behavioristik dalam proses pembelajaran. *Jurnal Ilmu Pengetahuan Sosial, 1*, 64-74.
- Nurgiyantoro, B. (2001). *Menulis secara populer*. Jakarta: Pustaka Jaya.
- Nurhayati. (2014). Pengaruh penerapan pendekatan konstruktivisme dengan model pembelajaran kooperatif berbantuan program *Cabri 3D* terhadap kemampuan penalaran dan koneksi matematis siswa SMA di Kota Tasikmalaya. *Jurnal Pendidikan dan Keguruan, 1* (1), 1-11.
- Nurhayati. (2014). Teori belajar Al-Māwardi: Studi analisis tujuan dan indikator keberhasilan belajar. *Jurnal Studi Keislaman, 18* (1), 41-58.
- Piaget, J. (1964). Development and learning. *Journal of Research in Science Teaching, 2*, 176-186.
- Plomp, T. 1997. *Educational and training system design*. Enschede, The Netherlands: University of Twente.
- Puangtong & Petchtone. (2014). The development of instructional model integrated with thinking skills and knowledge constructivism for undergraduate students. *Procedia - Social and Behavioral Sciences, 116* (1), 4283-4286.
- Purnomo. (2011). Keefektifan model penemuan terbimbing dan *Cooperative Learning* pada pembelajaran matematika. *Jurnal Kependidikan, 41*(1), 23-33.
- Putrayasa, I. B. (2011). Studi penelusuran miskonsepsi dalam pembelajaran tata kalimat dengan model konstruktivisme berpendekatan inkuiri pada siswa kelas I SMP Negeri di Kota Singaraja, Kabupaten Buleleng, Provinsi Bali (*Prosiding KIMLI, 2011*).
- Rudtin, N. A. (2013). penerapan langkah polya dalam model *Problem Based Instruction* untuk meningkatkan kemampuan siswa menyelesaikan soal cerita persegi panjang. *Jurnal Elektronik Pendidikan Matematika Tadulako, 1*(1),18-31.
- Rusli & Kholik. (2013). Theory of learning according to educational psychology. *Jurnal Sosial Humaniora, 4* (2), 62-67.
- Sanjaya, W. (2007). *Strategi Pembelajaran*. Jakarta: Kencana.
- Sanyata, S. (2012). Teori dan aplikasi pendekatan behavioristik dalam konseling. *Jurnal Paradigma, 14* (7),1-11.
- Sudaryono. (2016). *Metode penelitian pendidikan*. Jakarta: Prenada Media Group.
- Sukardi. (2003). *Metodologi penelitian pendidikan kompetensi dan praktiknya*. Jakarta: PT Bumi Aksara.
- Sumarsih. (2009). Implementasi teori pembelajaran konstruktivistik dalam pembelajaran mata kuliah dasar-dasar bisnis. *Jurnal Pendidikan Akuntansi Indonesia, 8*(1), 54-62.
- Verhaar, J. W. M. (2006). *Asas-asas linguistik umum*. Yogyakarta: Gadjadara University Press.
- Widoyoko, E. P. (2013). *Teknik penyusunan instrumen penelitian*. Yogyakarta: Pustaka Belajar.
- Widoyoko, P. E. (2014). *Teknik penyusunan instrumen penelitian*. Yogyakarta: Pustaka Belajar.
- Winataputra, (2005). *Model-model pembelajaran inovatif*. Jakarta: Universitas Terbuka.
- Yamin, M. (2013). *Strategi dan metode dalam model pembelajaran*. Jakarta: Gaung Persada Press.
- Zulhammi. (2015). Teori belajar behavioristik dan humanistik dalam perspektif pendidikan islam. *Jurnal Darul Ilmi, 3*(1),105-127.

## COLLEGE STUDENT SUCCESS: CONQUERING STEREOTYPED EXPECTATIONS WITH PERCEIVED SOCIAL SUPPORT

Taylor Smith

Experimental Psychology, Missouri State University, Hill 418  
smith6192@live.missouristate.edu

Adena Young-Jones

Experimental Psychology, Missouri State University, Hill 418  
ayoung@missouristate.edu

Jacqueline Byrket

Experimental Psychology, Missouri State University, Hill 418  
byrket0835@live.missouristate.edu

Becky Otwell

Experimental Psychology, Missouri State University, Hill 418  
botwell@ParElectric.com

Shannon Hayden

Experimental Psychology, Missouri State University, Hill 418  
shannon90291@live.missouristate.edu

Kimberly Koch

Experimental Psychology, Missouri State University, Hill 418  
kimberly1980@live.missouristate.edu

### ABSTRACT

The present study explores the relationship of academic success with basic psychological needs (i.e., autonomy, competence, and relatedness) and perceived social support of friends, family, and instructors. These components are examined in the context of historically underrepresented (i.e., generational status, ethnicity, and gender) college students versus those in traditional majority groups. This assessment of perceived social support is essential to creating beneficial and supportive environments for all students. Results indicate a relation between motivation and group identities; concurrently, instructor support has the greatest impact on academic success. Institutions often neglect to emphasize the importance of connections among students and faculty. Our research suggests that significant focus should be placed on increasing promotion of instructor support and resources.

Keywords: perceived social support; student success; basic psychological needs; first-generation; academic motivation

### INTRODUCTION

#### *Social Support and College Adjustment*

Perceptions of the American higher education landscape are infiltrated with contradictory information. Historically underrepresented groups are often bombarded with negative impressions and expectations which facilitate failure; however, achievement is possible if they possess knowledge of tactics for success and support structures when entering higher education. Successful adjustment to college mandates the mastery of skills beyond basic essentials for coursework completion. In fact, the transition to college for most freshmen requires social adaptation, as well as substantial academic and personal restructuring, which can be tremendously stressful. High school graduates must shift from courses that contain accountability checks to an environment of increased workload and less explicit instruction. This may weaken motivation and lead to a perceived lack of personal relevance (Eccles & Midgley, 1989; Jang, 2008). While students are proximally and/or emotionally distanced from usual sources of social support, new avenues of assistance are available to provide opportunities for student success and academic achievement. In particular, minority groups (i.e., ethnic background, generational status, and gender) are perceived to be less capable of adjusting to the college environment; establishing effective support systems may be integral to counteracting negative stereotypes and, hence, reducing potential risk(s) for dropping out (Bui, 2002).

Establishing support systems (i.e., social and academic) in conjunction with interactions among staff, peers, and leaders on campus is central to Tinto's (1975, 2007) theory. Through this framework of integrating students more deeply into their academic environments, not just the classrooms, instructors/mentors can better assist first year student retention and success. Tinto (2007) posits that though institutions may know why students leave,

their reasons for staying are just as important and are often not direct opposites for departure reasons. Thus examining support systems of successful students versus those who struggle is vital in determining where university faculty and staff should focus their efforts.

Barrera (1986) distinguished between received support (i.e., actual support) and perceived support (i.e., the belief that social support exists). Interestingly, perceived social support only slightly related to support received (Sarason, Shearin, Pierce, & Sarason, 1987). Wethington and Kessler (1986) found that perceived support is more important than received support in regard to adjustment. Other research has shown perceived social support predicts psychosocial adjustment (Dubow, Tisak, Causey, Hryshko, & Reid, 1991; Halamandaris & Power, 1999; Rahat & Ilhan, 2016), reduces ill effects related to a lack of social support (e.g., risk of suicide, loneliness, and physical illnesses, Coyne & Downey, 1991; Cornwell, 2003; Wright, King & Rosenberg, 2014; Gautam, 2016), and buffers the negative impact of stress on adjustment (Çivitci, 2015; Gutman, Sameroff, & Eccles, 2002; Sandler, Wolchik, Braver, & Fogas, 1991; Wills, Blechman, & McNamara, 1996). Overall, the social network enhances general well-being.

Social support includes social assets, resources, or associations that provide individuals with aid, advice, approval, comfort, or assistance (Cobb, 1976). A social network enables one to feel esteemed. The values of an individual's social network (i.e., family, teachers, and peers) mold personal perceptions of learning and development. Favorable and unfavorable experiences with these people can lead to diverse views on education and differing capacities to adjust in academic settings. Availability of support results in feelings of safety within the educational domain, while perceived lack of support may inhibit secure adjustment (Vedder, Boekaerts, & Seegers, 2005). Students' recognition of their connections (actual and perceived) is essential.

Perceived social support is related to various aspects of functioning and well-being. It predicts psychosocial adjustment (Dubow, Tisak, Causey, Hryshko, & Reid, 1991; Halamandaris & Power, 1999; Sheets & Mohr, 2009) including minimizing the risks of suicide, loneliness, and physical illnesses (Cornwell, 2003; Coyne & Downey, 1991; Hefner & Eisenberg, 2009; Wang & Castañeda-Sound, 2008; Wright, et. al., 2014). Awareness of support also buffers the negative influence of stress on adjustment (Bernardon, Babb, Hakim-Larson, & Gragg 2011; Gutman, Sameroff, & Eccles, 2002; Sandler, Wolchik, Braver, & Fogas, 1991; Wills, Blechman, & McNamara, 1996). Each of the aforementioned variables impact university students, particularly, college freshmen.

Wethington and Kessler (1986) theorize that perception of support is essential for incoming freshman to build effective coping skills in day-to-day life. When students feel they possess a solid support system, these individuals are more likely to initiate self-directed coping strategies, gain a sense of life competency, and access social support as needed. Concurrently, peers perceiving limited support resources struggle because they do not experience the same social 'safety net'. The current project seeks to examine academic motivation and achievement linked to perceived social support for all students, primarily evaluating this dynamic via ethnic background, generational status, and gender; historically underrepresented groups are often viewed as having a social disadvantage on college campuses leading to academic burdens.

### ***Demographic Variables in Perceived Social Support and Academic Success***

Evaluating diverse backgrounds (i.e., ethnicity, gender, and first-generation status) of incoming freshmen provides insight regarding student adjustment. First-generation students are described as those whose parents did not attend college, while non-first-generation students have at least one parent with postsecondary education experience. Often, first-generation students differ significantly by ethnicity, experience higher levels of 'culture shock', and have parents who are less involved in the college process (Brown & Burkhardt, 1999; Choy, Horn, Nunez, & Chen, 2000; Fallon, 1997; Hossler, Schmit, & Vesper, 1999; Inman & Mayes, 1999; Ramos-Sanchez & Nichols, 2007; Riehl, 1994; Terenzini, Springer, Yaeger, Pasarella, & Nora, 1996; Williams & Ferrari, 2015). Previous research indicates that these students face more obstacles than non-first-generation students.

Background characteristics contribute to lower retention rates among first-generation college students. For example, Choy (2001) found that first-generation college students are significantly more likely to leave a four-year university prior to their second year than peers. Ishitani (2006) stated fewer of these individuals were expected to complete college and be less successful than non-first-generation students. Furthermore, McCarron and Inkelas (2006) found the majority (62.1%) of first-generation college students did not attain their original educational aspirations within eight years. Comparatively, only a small percentage (28.4%) of non-first-generation students failed to achieve their goals.

Gender differences significantly impact psychological adjustment among first-generation undergraduates. Traditionally, academia has been a male dominated environment, and female undergraduates report greater distress compared to their male counterparts (Misra, McKean, West, & Russo, 2000). Despite having greater perceptions of social support, college women face more depressive symptoms and less life satisfaction (Jenkins, Belanger, Londoño Connally, Boals, & Durón, 2013). Regarding psychological well-being variables (i.e., mood, social relationships, and subjective well-being), first-generation women are significantly disadvantaged in comparison to first-generation men. Therefore, first-generation women may require supplemental coping strategies.

An extensive review of generational status conveyed differences across family involvement, ethnic group, and socioeconomic status (SES). Previous research verifies first-generation students have less parental involvement and face more obstacles than their peers (Brown & Burkhardt, 1999; Choy et al., 2000; Fallon, 1997; Hossler et al., 1999; Inman & Mayes, 1999; Ramos-Sanchez & Nichols, 2007; Riehl, 1994; Terenzini et al., 1996; Blackwell & Pinder, 2014). The effects of generational status may also be compounded within ethnic minority groups. For instance, Bui (2002) revealed that first-generation students are more likely to be of an ethnic minority (i.e., primarily Asian and Latinos with a small percentage represented by Black students). These first-generation individuals typically pursue degrees to financially support their extended families after graduation, gain respect/status, and honor their family.

To further examine familial impact, McCarron and Inkelas (2006) investigated the role of parental involvement in educational endeavors for first-generation versus non-first-generation college students. Based on the National Education Longitudinal Study (NELS), familiarity with maneuvering college life may be deficient among first-generation students. In essence, a lack of experience and knowledge is correlated with SES. Results revealed the largest percentage of first-generation students occurred in the lowest SES quartile and consisted primarily of minority ethnicities compared to the non-first-generation sample, which was significantly represented in the highest SES quartile. Interestingly, despite low SES barriers, parental involvement (i.e., discussions about school issues and encouragement toward education) best predicted aspirations of non-first-generation students. In contrast, first-generation college students' perceptions of good grades, and other external influences, correlated with optimal educational ambitions.

Other research indicates the aspirational differences between first- and non-first-generation college students link to perceptions of family support. Dennis, Phinney, and Chuateco (2005) supported the above findings through focus groups. Results demonstrated that first-generation college students believe their families can be emotionally supportive (e.g., encouraging, praising, reinforcing, etc.); however, they did not consider their families to be instrumentally supportive (e.g., providing funding, academic guidance, prior impressions, etc.) in relation to college adjustment.

Further investigations by Dennis et al. (2005) examined the absence of perceived social support in minority, first-generation college students. When a student requires guidance through funding issues, campus life choices, and motivational struggles, parents with educational experience are recognized as a viable resource; these adults convey the value of higher education and provide helpful insight. Without this source, individuals view peers (who often possess the same amount of knowledge) to be more competent at supporting them in the academic domain. Previous research indicates that family and peer support combine to set non-first-generation students at a distinct advantage (Brown & Burkhardt, 1999; Choy et al., 2000; Fallon, 1997; Hossler et al., 1999; Inman & Mayes, 1999; Ramos-Sanchez & Nichols, 2007; Riehl, 1994; Terenzini et al., 1996; Williams & Ferrari, 2015).

Family support is a vital element of academic achievement and graduation, particularly, for historically underrepresented individuals (Brown & Robinson Kurpius, 1997; Cauce, Reid, Landesman, & Gonzalez, 1990; Endecavage, 2000; Gloria & Rodriguez, 2000; Griffin, 1991; Harris & Molock, 2000; Kidwell, 1994; LaFramboise, Berman, & Sohi, 1994; Lango, 1995; Portes, 1998; Steinberg, Lamborn, Dornbush, & Darling, 1992). Grade point average (GPA) reflects these differences in the academic setting. In earlier studies, White students have higher GPAs than Non-White students (Gutman, Sameroff, & Eccles, 2002; Perrakis, 2008). This is attributed to a collection of multiple risk factors instead of any one specific reason. Students' background and family life, including low SES, single-parent households, and number of children in the household impacts GPA. Yet, these detrimental influences can be counterbalanced with positive factors such as home-life consistency, discipline, and perceived social support.

In addition to family support, college adjustment appears to be enhanced when students form relationships with peers from similar ethnic backgrounds. Research conveys that these friendships increase the comfort level of African American and Latino students, thus, enhancing matriculation rates (Fiske, 1988; Gloria & Robinson

Kurpius, 1996) and reducing considerations of withdrawal from undergraduate programs (DeFour & Hirsch, 1990). Success may be due, in part, to support garnered from sharing a unique membership of a specific ethnic group (Gloria, Robinson, Kurpius, Hamilton, & Willson, 1999; Utsey, Ponterotto, Reynolds, & Cancelli, 2000; Gummadam, Pittman & Ioffe, 2016).

Along with family and peer support, professors can also play a significant role in the adjustment and success of college students in the university setting. Within and outside the classroom, instructors are a pivotal source available for all students. Yet, Johnson and Johnson (1989) reviewed 106 studies to find that peer social support was more important than instructor support in regard to academic achievement and psychosocial adjustment. Once Ghaith (2003) expanded Johnson and Johnson's study, findings actually reveal a more significant effect for instructor support.

Clifton, Perry, Stubbs, and Roberts (2004) illustrated increased interaction with professors significantly improved students' psychosocial dispositions and grades; these interactions with professors promoted academic control and coping strategies. Moreover, the type of interaction within the classroom impacted student performance. Analysis showed that collaborating with other students improved overall performance. This research suggests teaching through student-centered cooperative learning methods, when cognitive demands are neither too high nor low, improves students' sense of academic control and coping strategies. Consequently, such a pedagogical environment would increase students' GPAs, which in turn may increase rates of graduation.

In general, family, peers, and faculty are sources of support that fulfill the basic psychological needs (i.e., autonomy, competence, and relatedness; Deci & Ryan, 1985, 2002); however, demographic differences lead to individualized experiences and expectations of social support. Perceptions of social support vary depending on students' unique backgrounds, present situations, and available opportunities. Individuals must decide where, when, how, and from whom they seek support; students may have a pool of resources from whom they obtain social support and then make decisions about who can best fulfill their basic needs in specific circumstances.

#### ***Self-Determination Theory: Academic Support, Basic Psychological Needs, and Motivation***

While backgrounds and social support play crucial roles in collegiate success, the present study evaluated inherent factors for academic motivation and psychological well-being. Previously, the interplay between motivation (i.e., intrinsic, extrinsic, and amotivation) and demographic elements, regarding social support, has been underemphasized. Deci and Ryan's Self-Determination Theory (SDT; 1985, 2002) is an optimal framework for investigating these variables. SDT contends that motivation and functioning are enhanced through satisfaction of an individual's basic psychological needs: competence, relatedness, and autonomy (Deci & Ryan, 2002). When individuals experience greater need satisfaction, they move along the SDT continuum of motivation thus strengthening their intrinsic academic drive (Deci & Ryan 1985; Deci, Vallerand, Pelletier, & Ryan, 1991; Levesque, Copeland, Patti, & Deci, 2010; Niemiec, & Ryan, 2009; Young-Jones, Levesque-Bristol, & Cara, 2014). Intrinsic motivation is defined by the inherent desire to accomplish a task. Conversely, extrinsic motivation occurs with limited need satisfaction and encompasses the engagement of activities as a means to an end. When these needs are thwarted, amotivation occurs.

Research suggests that perceived support may contribute to intrinsic and self-determined extrinsic motivation within the collegiate setting (Chao, 2012; Vedder et al., 2005). Regrettably, deficient social support, in any form, results in basic psychological need thwarting within the educational domain. Legault, Green-Demers, and Pelletier (2006) discovered that insufficient perceptions of social support were associated with academic amotivation among high school students; parallel assumptions can be made in university domains. Findings promote the theoretical construct that perceived social support from both family and peers contribute to students' needs for autonomy, competence, and relatedness, in turn, bolstering academic motivation (Stice, Regan, & Randall, 2004).

Each of the three basic psychological needs have the potential to augment social support. Competence refers to the perception of mastering new techniques and skills to overcome obstacles. Instructors play a prominent role in assisting students with satisfying, or thwarting, this basic need. Deci and Ryan (2002) found that educators contribute to competence by providing information and valuable feedback necessary to promote academic motivation through individual meetings, classroom interactions, and/or course structural climate. Instructors can present challenging material in a manner which enables successful application and boosts competence. Outside the classroom, assisting students with exam preparation or group activities may reinforce this sense of competence. Likewise, if courses are designed to evoke and encourage participation, this allows students to contribute successfully and witness positive achievements.

Relatedness is feeling connected to and/or respected by other individuals. This basic psychological need derives from an extensive web of teachers, peers, and friends. The campus community is an optimal environment for networking to occur. Professors have the capacity to enhance social connection both within and outside of the classroom; this involvement is essential for fulfillment of relatedness. Similarly, relatedness is influenced by meaningful advisory affiliations. Furthermore, students' personal perceptions of school are connected with peer influence. Relationships with friends impact student perceptions of belongingness and relatedness. Overall, individuals must feel linked to each other; this is why undergraduates yearn for social support from a variety of sources.

The third need, autonomy, is obtained by producing meaningful decisions without coercion. In academia, this begins with families encouraging students to develop educational values and pursue a degree of their choice (Lewinsohn, Roberts, Seeley, Rohde, Gotlib & Hops 1994; Misra, Crist & Burant, 2003). Peer and instructor support for various preferences, and ensuing life processes, also solidifies autonomy. Additionally, professors may create autonomous environments by permitting students to elicit discretion when making judgments or selecting between options within academic settings; edifying guidance throughout the learning process strengthens this basic need.

Conclusively, educational research from SDT asserts that intrinsic motivation is fostered in environments where basic psychological needs are satisfied from a variety of sources (Deci & Ryan 1985; Deci, Vallerand, Pelletier, & Ryan, 1991; Levesque, Copeland, Pattie, & Deci, 2010; Young-Jones, Levesque-Bristol, & Cara 2014). In academia, peers, instructors, and other supportive individuals on campus (i.e., academic advisors, adjunct faculty, mentors, practicum supervisors, etc.) are instrumental in enhancing basic needs success. As these needs are met and bolstered, students can enjoy eudemonia in academic life (Deci & Ryan, 1985; Deci, Vallerand, Pelletier, & Ryan, 1991).

### ***Present Study***

Determining social support factors that allow first-generation and minority students a successful transition to collegiate expectations are essential. Perceived social support is associated with enhanced levels of student adjustment within a college environment through feelings of security which, in turn, leads to better academic outcomes; meanwhile, the perceived lack of support can inhibit secure college transitions (Chao, 2012; Vedder, Boekaerts, & Seegers, 2005). Students from varying backgrounds may express perceptions of social support (or its absence) differently. These deviations potentially explain differences of academic success across a diverse college student population.

Based on Self-Determination Theory (SDT; Deci & Ryan, 1985, 2002) of motivation, the current investigation examined three demographic categories (i.e., ethnic identification, generational status, and gender) in relation to perceived social support (i.e., family, friends, and instructors). This study expands the body of literature by illuminating how perceived social support increases academic motivation and, therefore, positively impacts educational outcomes. In particular, the interrelationship between perceived social support, GPA, and academic motivation was examined to ascertain variations in student performance.

## **METHOD**

### ***Participants***

Participants included 454 college students (134 male, 317 female, 3 unreported) recruited from a regional university in the southwest. The majority of students were full-time (n = 353), but many part-time (n = 93) students participated as well. Ages ranged from 17 to 54 years. Juniors (n = 226) and seniors (n = 126) were the most common respondents, with sophomores (n = 65), freshmen (n = 33), and unclassified (n = 1) comprising less of the sample. Among respondents, 271 identified themselves as European American, 96 as African American, 43 as Hispanic American, 10 as Asian American, and 34 as other categories. Over half of the sample were classified as first-generation college students (n = 231) while the remaining had at least one parent that attended college (n = 217), unreported (n = 2), or data was entered incorrectly (n = 4).

### ***Instruments***

To assess motivation and perceptions of support, researchers utilized two multidimensional scales: the Academic Motivation Scale (AMS; Vallerand, Blais, Brière, & Pelletier, 1989) and a revised Multi-Dimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988). Permission was received from the MSPSS authors to remove 'significant other' terminology and replace it with instructor support. In addition, participants completed a basic demographic form with self-reported GPA, generational status, ethnic group identification, and gender items.

The AMS assesses five types of academic motivation (four items each). Using a 7-point scale (1 = not at all, 7 = exactly), participants noted the extent to which they pursue their education out of intrinsic motivation (IM), identified regulation (IDR), introjected regulation (INR), external regulation (ER), or amotivation (AM). From these dimensions, a Self-Determination Index (SDI) was obtained using the following formula  $(((IM/3) \times 2) + (IDR) - ((INR + ER)/2) - (AM \times 2))$ , from Vallerand's (2001) recommendations, which is a validated method commonly used to evaluate self-determined motivation. The students' SDI is a relational measure of satisfaction within the three basic psychological needs. Higher scores indicate intrinsic motivation, and lower/negative scores represent extrinsic or amotivation on the AMS. Example questions from the AMS include items that represent extrinsic motivation 'Because with only a high-school degree I would not find a high-paying job later on', intrinsic motivation 'Because I experience pleasure and satisfaction while learning new things', and amotivation 'Honestly, I don't know; I really feel that I am wasting my time in school'.

Three sources of social support employed subscales of the altered Multi-Dimensional Perceived Social Support Scale: family, friends, and instructors. Using a 7-point scale similar to the AMS (1 = very strongly disagree, 7 = very strongly agree), participants specified which sources they accessed most often and how strong they perceived the support. Higher scores on the MSPSS equate to an increased perception of support from family, friends, or instructors. Sample items include statements regarding family 'I get the emotional help and support I need from my family', friends 'I can count on my friends when things go wrong', and instructors 'There is an instructor who is around when I am in need'.

## RESULTS

The data set was screened for missing responses and outliers. Since the focus was academic outcomes, 71 cases were deleted for lacking university GPA. Additionally, 99 were omitted for missing more than 50% of their responses. Outliers were identified employing Mahalanobis ( $X^2(5) = 15.09$ ), Cook's (.011), and Leverage (.086) criteria. Seven were voided for surpassing two of the three cutoff values. The final sample ( $N = 277$ ) met all assumptions for normality, linearity, and homoscedasticity.

### Means Comparisons

A new variable was calculated for cultural identity. Three categories were created: White (European American;  $n = 234$ ), Non-White (African American and Hispanic;  $n = 93$ ), and Other ( $n = 21$ ). Random sampling generated equal groupings of the White ( $n = 99$ ) and Non-White categories. All assumptions were met after the sampling procedure. Significance tests were restricted with Bonferroni's adjustment for six tests ( $p < .01$ ). Independent t-tests evaluated differences between these two groups for GPA, SDI, and both the summation scores and subscale scores for the MSPSS. Significant differences were discovered in GPA [ $t(191) = 3.11, p = .002, d = .45$ ] and the MSPSS summation score [ $t(191) = 1.82, p = .05, d = .05$ ], with Whites scoring higher than Non-Whites on both measures (See Table 1 or Figure 1).

**Table 1:** Means and standard deviations by demographic status.

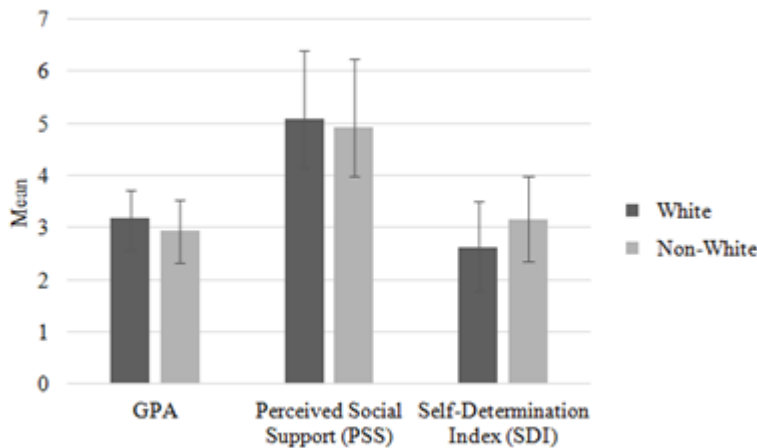
Item	<i>M</i>	<i>SD</i>
Group		
GPA		
White	3.18	.53
Non-White	2.93	.60
Instructor (MSPSS)		
White	3.60	1.56
Non-White	3.23	1.70
Friend (MSPSS)		
White	5.88	1.44
Non-White	5.84	1.42
Males	5.57	1.54
Females	6.06	1.29
Family (MSPSS)		
White	5.72	1.22
Non-White	5.50	1.44
Males	5.31	1.38
Females	5.86	1.34
Summation Score (MSPSS)		
White	5.08	1.31
Non-White	4.92	.92
SDI		



White	2.61	.90
Non-White	3.17	.82
First-Generation	3.92	.73
Non First-Generation	1.41	.96
Males	-1.1696	.96
Females	1.14	.75

Note. This table only includes Ms and SDs from variables determined to be significantly different ( $p < .05$ ) across groups.

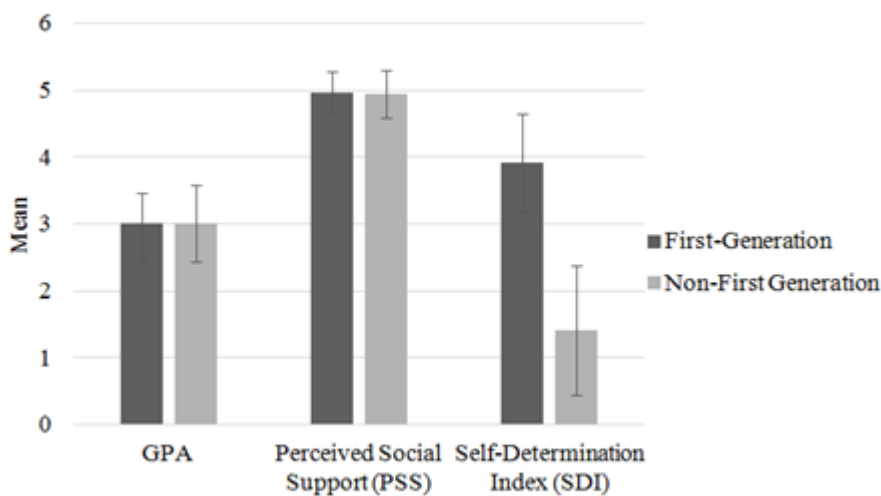
Figure 1. Means comparison by ethnic group.



Note: Error bars represent  $\pm$  one standard deviation.

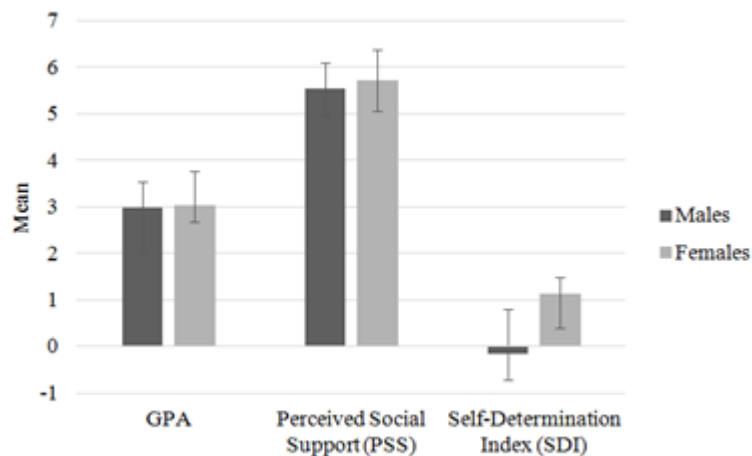
Additional t-tests were utilized to measure differences between students reporting as First-Generation and Non-First-Generation. The same dependent variables were evaluated (GPA, SDI, MSPSS summation, MSPSS subscales). Only the SDI scores were significantly different; First-Generation attendees scored higher on this measure of motivation [ $t(272) = 2.41, p = .02, d = .29$ ]. After Bonferroni's correction this test was no longer significant (See Table 1 or Figure 2). To assess gender differences, a random sampling of Females was generated to create equal groups (Males:  $n = 94$ ; Females:  $n = 100$ ). T-tests uncovered a significant difference in means on the friend and family subscales of the MSPSS and in the SDI scores; Females scored higher on all three variables (See Table 1 or Figure 3). All significance tests were restricted with Bonferroni's adjustment for six tests ( $p < .01$ ).

Figure 2. Means comparison by generational status.



Note: Error bars represent  $\pm$  one standard deviation.

Figure 3. Means comparison by gender.



Note: Error bars represent  $\pm$  one standard deviation.

A 2 (gender) X 2 (ethnicity) X 3 (GPA,SDI, MSPSS) multivariate ANOVA was used to investigate interaction effects. All interactions were non-significant: GPA [ $F(3,110) = .000, p = .997, \eta^2 = .000$ ], SDI [ $F(3, 110) = .040, p = .798, \eta^2 = .000$ ], MSPSS [ $F(3, 110) = 2.78, p = .11, \eta^2 = .02$ ]. Nevertheless, there were main effects for both gender and ethnicity on GPA [gender:  $F(3, 110) = 5.98, p = .007, \eta^2 = .06$ ; ethnicity:  $F(3, 110) = 4.44, p = .038, \eta^2 = .04$ ]. Females, overall, reported higher GPAs than Males (Mdiff = .247, SE = .10), and Whites reported higher GPAs than Non-Whites (Mdiff = .214, SE = .10). There was also a main effect of gender on the participants' total perceived support score [ $F(3, 110) = 10.88, p < .001, \eta^2 = .08$ ] with Females outscoring Males (Mdiff = .506, SE = .15). Gender exhibited a main effect for the SDI measure [ $F(3, 110) = 11.77, p < .001, \eta^2 = .09$ ], with Females once again outscoring Males in academic motivation (Mdiff = 1.29, SE = .27; See Figure 3). All significance tests were restricted accordingly with Bonferroni's adjustment ( $p < .02$ ).

### Predictor Modeling

For the entire sample, a multiple linear regression was applied to estimate a predictor model for GPA. Participant age, SDI score, summation score of the MSPSS scale, and three MSPSS subscales (family, friend, and instructor) were entered as independent variables. The overall model was significant [ $F(6, 257) = .01, p = .950, R^2 = .188$ ], with SDI [ $\beta = .275, t(257) = 4.80, p < .001, pr^2 = .08$ ], instructor subscale [ $\beta = .185, t(257) = 3.56, p < .001, pr^2 = .04$ ], and age [ $\beta = .188, t(257) = 3.31, p = .001, pr^2 = .04$ ] as positive predictors of GPA. However, the MSPSS summation score [ $\beta = -.121, t(257) = -2.15, p = .031, pr^2 = .02$ ] was a negative predictor of GPA, and both friend [ $\beta = -.076, t(257) = -1.26, p = .21, pr^2 = .01$ ] and family subscales [ $\beta = .118, t(267) = 1.92, p = .06, pr^2 = .04$ ] were non-significant.

Similar regression analysis uncovered GPA predictors according to ethnic group with participant age, SDI, and summation score of the MSPSS as independent variables. Surprisingly, the model was only significant in the White category [ $F(3,54) = 3.75, p = .016, R^2 = .172$ ] but not the Non-White category [ $F(3, 33) = 1.85, p = .206, R^2 = .078$ ]. In addition, SDI was the only significant positive predictor of GPA for White students [ $\beta = .337, t(54) = 2.67, p = .01, pr^2 = .12$ ]. When these predictors were evaluated by gender, the model was only significant for Males [ $F(3, 53) = 2.87, p = .045, R^2 = .140$ ] but not for Females [ $F(3, 53) = 1.18, p = .328, R^2 = .062$ ]. Again, SDI was the only significant predictor for GPA explaining over 30% of variance in grades for Male participants [ $\beta = .292, t(53) = 2.26, p = .028, pr^2 = .09$ ].

### CONCLUSION

The current investigation examined dynamics of ethnicity, gender, and generational status differences in relation to perceived social support (i.e., family, friends, or instructors) within the Self-Determination Theory (SDT; Deci & Ryan, 1985, 2002) of motivation. At the same time, predictors of academic success, as measured by GPA, were evaluated. This project aimed to establish how perceived social support can enhance academic motivation and positively impact educational outcomes across college students' backgrounds; Tinto's (1975, 2007) idea of integrating students more thoroughly into their academic environments through relationships to promote success and retention was reflected within this goal.

Our study supported previous findings for higher GPAs among White students compared to Non-White students (Gutman, Sameroff, & Eccles, 2002; Perrakis, 2008). Specifically, Whites students and females reported higher

GPA's; in addition, Non-White males claimed the lowest GPA's. We theorize that self-confidence or self-efficacy differences may be attributed to gender and ethnic groups. Society could contribute to gender roles manifesting as a lack of motivation in specific domains or reflect students' upbringing, cultural value systems, and/or family SES.

Females also outscored their male counterparts in academic motivation as exhibited with a main effect for the Self-Determination Index (SDI). Furthermore, while White and Non-White females outscored White males on the SDI, Non-White males performed the worst. This indicates that gender may have a greater influence on academic motivation than ethnicity. Females are more inclined to seek support outside of the classroom, while male students may need encouragement before they are willing to visit a tutor or faculty member after class to garner supplementary assistance (Jenkins et al., 2013). It is possible that males require different types of motivational encouragement not currently provided by the academic community. Future research should explore collegiate environment resources for male students and how/what is lacking.

Expounding on this deficiency, our results exhibited a main effect of gender on total perceived support. Once again, we found that females outscored males. These implications may suggest that male students do not feel as socially supported as female counterparts or communicate this need as openly. Yet, the results held true only for White students; no significant findings existed between Non-White males or Non-White females for overall MSPSS scores. A reasonable explanation for the unexpected similarities between Non-White males and Non-White females connects with friends, family, and other individuals of similar backgrounds fulfilling and creating a bond to provide social interconnectivity for marginalized students (Misra et al.; Sheets & Mohr, 2009).

In regard to psychological well-being variables (i.e., mood, social relationships, and subjective well-being), first-generation women are more inclined to seek assistance from friends and family when necessary which would appear to reduce or eliminate depressive symptoms and increase life satisfaction. These results seem to refute previous conclusions of females experiencing more negative psychological indicators and less contentment with life than their male counterparts (Jenkins et al., 2013). Furthermore, supplemental coping strategies demonstrate that females may actually be more advantaged regarding MSPSS and SDI.

### ***First-Generation Status***

Secondary analysis compared first-generation students to non-first-generation students for examination of differences in academic success (i.e., GPA), academic motivation (i.e., SDI), and/or perceived social support (i.e., MSPSS). Interestingly, only SDI scores revealed significant differences with first-generation students scoring higher in academic motivation. Results from this sample led us to theorize that factors beyond parental education contribute to motivation at the collegiate level. While previous research attests that first-generation students have less parental involvement and face more difficulties than their non-first-generation counterparts (Brown & Burkhardt, 1999; Choy et al., 2000; Fallon, 1997; Hossler et al., 1999; Inman & Mayes, 1999; Ramos-Sanchez & Nichols, 2007; Riehl, 1994; Terenzini et al., 1996; Williams & Ferrari, 2015), it is plausible that parents of first-generation students demonstrate coping mechanisms to surmount these obstacles by exhibiting a strong work ethic (Blackwell & Pinder, 2014). Combined, these studies demonstrate that diligence, study habits, and use of resources were all predictive of academic success. For students in our sample, first-generation status may be a motivating factor itself as students attempt to overcome generational barriers to achieve an increased socioeconomic status.

As stated earlier, parental involvement is the best predictor of aspirations for non-first-generation students; for first-generation students, perceptions of good grades and other external influences correlated with ideal educational outcomes. According to Dennis, Phinney, and Chuateco (2005), non-first-generation students possess the distinct advantage of having an instrumentally supportive familial system (e.g., providing funding, academic guidance, prior perceptions) who experienced the trials and tribulations associated with attaining higher education. They [non-first-generation students] may receive advice regarding issues that parents of first-generation students cannot offer because they are not familiar or cannot empathize with the exact struggles. However, these first-generation students acknowledge their families can be emotionally supportive (e.g., encouraging, praising, reinforcing) when relating to college adjustment. An examination of social support displayed congruent findings to Wang and Castañeda-Sound (2008) with no significant statistical differences between first-generation and non-first-generation MSPSS scores. We believe this is a reflection of all students, despite generational status, requiring encouragement and assistance upon entering college. However, when gender is combined with generation status, differences are revealed in motivation and family/friend domains of perceived social support. Females scored higher on all three variables than their male counterparts. This could be attributed to expectations that females are more social and open with emotional and social trials than their

male cohorts. Generally, if students are not directly asking questions or seeking help, assumptions are made that they either do not require or desire assistance.

### ***Predictors of Academic Success (GPA)***

When these same variables (SDI and MSPSS) were evaluated as predictors of GPA by gender, the overall model was only significant for males. Academic motivation was the sole significant predictor for GPA accounting for over 30% of the variance in grades for male participants. It is necessary to note GPA fluctuations may result from faulty memory, impression management, and/or self-report. Future research should focus on specifics within the male student population, other than academic motivation, to investigate why females excel more consistently. Being aware of stereotypical influences can help re-shape teaching and outreach guidelines.

In predicting GPA for ethnic background, the model was only significant for the White category. Age, SDI, and MSPSS summation scores were not significant for the Non-White group; SDI was the only significant positive predictor of GPA for White students. We believe the three predictors vary on a cultural basis and may elucidate why SDI was the only significant positive predictor for White students. Regardless, comparisons in the current study conveyed that gender differences overshadowed the impact of ethnic identification influences for academic motivation and success.

Instructor support may establish a prominent component of academic success for all groups. Positive predictors for GPA included instructor support, age, and SDI. This implies that students reported better GPAs when they felt supported by their instructors and were motivated. Nevertheless, the MSPSS summation score was a negative predictor of GPA, and both the friend and family subscales were non-significant. Though you would expect a positive relationship between higher GPAs and increased support, our sample reported lower GPAs when they experienced enhanced support from friends and family; perhaps non-collegiate avenues detract from use of educational resources. Thus, support of friends and family did not have an equivalent influence on GPA compared to instructor support. These findings oppose the stereotype that both non-first-generation and Non-White students are at a disadvantage. Both marginalized groups have equal access to instructors and demonstrate similar perceptions of support from this resource.

### **LIMITATIONS AND FUTURE RESEARCH**

Within the current study, several variables could account for the gender and ethnic group differences in GPA. Academic success includes inherent biases through self-report measures; in addition, GPA calculations of success are not always indicative of true achievement and potential. Another limitation occurred due to high correlations between the family and friends category on the social support scale. This measurement was chosen to investigate students' use of potential sources of social support, and it allowed choice for support by family, friends, or instructors. We believe the item wording may not create a definite distinction between friends and family. Regardless, perceived support from family and friends may significantly impact student ability to adjust in a new environment.

Despite results for familial and peer support, when viewed from the perspective of academic success, little doubt exists regarding the instructor's role. The present results support Wethington and Kessler's (1986) notion that perceived support, regardless of the source type, is imperative for student adjustment and academic achievement. When students receive actual support, data indicates they are far more likely to move along the self-determination index toward intrinsic motivation resulting in enhanced success within the educational arena (Levesque et al., 2010; Niemiec & Ryan, 2009).

Future research should focus on increasing instructor support. Instructors perform a pivotal, though overlooked, role in the academic success of students. These individuals are often viewed solely as conveyors of course information. Our research suggests that their impact extends beyond the four walls of the classroom. The combination of factors within an academic environment (i.e., group dynamics, teaching paradigms, and student autonomy/competence/relatedness) can enhance positive student-teacher rapport and thus result in an increased likelihood for students to seek instructor(s) assistance/insight. When professors utilize a variety of methods, they bolster basic need satisfaction in the classroom; options for exploration include individual guidance, written feedback, verbal communication, presentation of challenging material, and creation of a classroom climate to increase autonomy, competence, and relatedness.

Research on instructor support should expand to incorporate explicit variables regarding both first-and non-first-generation college students. Typically, first-generation students are thought to be at a distinct disadvantage (Brown & Burkhardt, 1999; Choy et al., 2000; Fallon, 1997; Hossler et al., 1999; Inman & Mayes, 1999; Ramos-Sanchez & Nichols, 2007; Riehl, 1994; Terenzini et al., 1996). Further research regarding support for

generational status is essential to determining the origin of perceived lack of evidence for this stereotype. A combination of factors might lead to the gap being closed. One justification is that individual motivation can override barriers, both real or imagined, regardless of status. Furthermore, various programs currently in place to help first-generation college students may indeed benefit their academic navigation. Social support could be more important for some groups than others, but every student benefits from a variety of support sources regardless of their gender, ethnic group, or SES status.

## REFERENCES

- Barrera, M. (1986). Distinctions between social support concepts, measures, and models. *American Journal of Community Psychology*, 14(4), 413-445.
- Bernardon, S., Babb, K.A., Hakim-Larson, J., & Gragg, M. (2011). Loneliness, attachment, and the perception and use of social support in university students. *Canadian Journal of Behavioural Science*, 43(1), 40–51. DOI: 10.1037/a0021199
- Blackwell, E., & Pinder, P.J. (2014). What are the motivational factors of first-generation minority college students who overcome their family histories to pursue higher education? *College Student Journal*, 48(1), 45-56.
- Brown, H. E., & Burkhardt, R. L. (1999). Predicting student success: The relative impact of ethnicity, income, and parental education. AIR 1999 Annual Forum Paper.
- Brown, L. L., & Robinson Kurpius, S. E. (1997). Psychosocial factors influencing academic persistence of American Indian college students. *Journal of College Student Development*, 38(1), 3-12.
- Bui, K. V. T. (2002). First-generation college students at a four-year university: Background characteristics, reasons for pursuing higher education, and first-year experiences. *College Student Journal*, 5(1), 9-10.
- Cauce, A. M., Reid, M., Landesman, S., & Gonzales, N. (1990). Social support in young children: Measurement, structure, and behavioral impact. In B. R. Sarason, I. G. Sarason, & G. R. Pierce (Eds.), *Social support: An interactional view*. Wiley series on personality processes (pp. 64-94). Oxford England: John Wiley & Sons.
- Chao, D. C., (2012). Managing perceived stress among college students: The roles of social support and dysfunctional coping. *Journal of College Counseling*, 15, 11-17.
- Choy, S. (2001). Students whose parents did not go to college: Postsecondary access, persistence, and attainment. *Findings from the Condition of Education*, 3-34.
- Choy, S. P., Horn, L. J., Nunez, A.-M., & Chen, X. (2000). Transition to college: What helps at-risk students and students whose parents did not attend college. *New Directions for Institutional Research*, 27(3), 45-63.
- Çivitci, A. (2015). The moderating role of positive and negative affect on the relationship between perceived social support and stress in college students. *Educational Sciences: Theory & Practice*, 15, 565-573.
- Clifton, R. A., Perry, R. P., Stubbs, C. A., & Roberts, L. W. (2004). Faculty environments, psychosocial dispositions, and the academic achievement of college students. *Research in Higher Education*, 45(8), 801-828.
- Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine*, 38(5), 300-314.
- Cornwell, B. (2003). The dynamic properties of social support: Decay, growth, and staticity, and their effects on adolescent depression. *Social Forces*, 81(3), 955-78.
- Coyne, J. C., & Downey, G. (1991). Social factors and psychopathology: Stress, social support, and coping processes. *Annual Review of Psychology*, 42, 401-425. doi:10.1146/annurev.ps.42.020191.002153
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Press.
- Deci, E. L., & Ryan, R. M. (Eds.), (2002). *Handbook of self-determination research*. Rochester, NY: University of Rochester Press.
- Deci, E. L., Vallerand, R. J., Pelletier, L. G., & Ryan, R. M. (1991). Motivation and education: The self-determination perspective. *Educational Psychologist*, Current issues and new directions in motivational theory and research, 26(3-4), 325-346. doi:10.1207/s15326985ep2603&4\_6
- DeFour, D. C., & Hirsch, B. J. (1990). The adaptation of Black graduate students: A social network approach. *American Journal of Community Psychology*, 18(3), 487-503. doi:10.1007/BF00938119
- Dennis, J. M., Phinney, J. S., & Chuateco, L. I. (2005). The role of motivation, parental support, and peer support in the academic success of ethnic minority first-generation college students. *Journal of College Student Development*, 46(3), 223-236.
- Dubow, E. F., Tisak, J., Causey, D., Hryshko, A., & Reid, G. (1991). A two-year longitudinal study of stressful life events, social support, and social problem-solving skills: Contributions to children's behavioral and academic adjustment. *Child Development*, 62(3), 583. doi:10.1111/1467-8624.ep9109090183

- Eccles, J. S., & Midgley, C. (1989). Stage/environment fit: Developmentally appropriate classrooms for young adolescents. *Research on Motivation and Education*, 3, 139-186.
- Endecavage, C. (2000, June). The role of internal attribution and social support in the college success of African American males. US: ProQuest Information & Learning.
- Fallon, M. V. (1997). The school counselor's role in first generation students' college plans. *School Counselor*, 44(5), 384-393.
- Fiske, E. B. (1988, June 23). School integration patterns change. *New York Times*. New York, NY.
- Gautam, A. (2016). Psychological interpersonal needs and suicidal ideation among college students: The moderating role of social support. *Indian Journal of Positive Psychology*, 7, 297-301.
- Gloria, A. M., & Robinson Kurpius, S. E. (1996). The validation of the cultural congruity scale and the university environment scale with chicano/a students. *Hispanic Journal of Behavioral Sciences*, 18(4), 533-49.
- Gloria, A. M., & Rodriguez, E. R. (2000). Counseling Latino university students: Psychosociocultural issues for consideration. *Journal of Counseling & Development*, 78(2), 145-154.
- Gloria, A. M., Robinson Kurpius, S. E., Hamilton, K. D., & Willson, M. S. (1999). African American students' persistence at a predominantly white university: Influence of social support, university comfort, and self-beliefs. *Journal of College Student Development*, 40(3), 257-268.
- Griffin, O. (1991). Minority student education: Concepts and policies. *Western Journal of Black Studies*, 15, 235-240.
- Gummadam, P., Pittman, L. D., & Ioffe, M. (2016). School belonging, ethnic identity, and psychological adjustment among ethnic minority college students. *Journal of Experimental Education*, 289-306.
- Gutman, L. M., Sameroff, A. J., & Eccles, J. S. (2002). The academic achievement of African American students during early adolescence: An examination of multiple risk, promotive, and protective factors. *American Journal of Community Psychology*, 30(3), 367.
- Halamandaris, K. F., & Power, K. G. (1999). Individual differences, social support and coping with the examination stress: A study of the psychosocial and academic adjustment of first year home students. *Personality and Individual Differences*, 26(4), 665-685. doi:10.1016/S0191-8869(98)00172-X
- Harris, T. L., & Molock, S. D. (2000). Cultural orientation, family cohesion, and family support in suicide ideation and depression among African American college students. *Suicide and Life-Threatening Behavior*, 30(4), 341-53.
- Hefner, J., Eisenberg, D., (2009). Social support and mental health among college students. *American Journal of Orthopsychiatry*, 79(4), 496-497. doi: 10.1037/a0016918
- Hossler, D., Schmit, J., & Vesper, N. (1999). Going to College. How Social, Economic, and Educational Factors Influence the Decisions Students Make.
- Inman, W. E., & Mayes, L. (1999). The importance of being first: Unique characteristics of first-generation community college students. *Community College Review*, 26(4), 3-22.
- Ishitani, T. T. (2006). Studying attrition and degree completion behavior among first-generation college students in the United States. *The Journal of Higher Education*, 77(5).
- Jang, H. (2008). Supporting students' motivation, engagement, and learning during an uninteresting activity. *Journal of Educational Psychology*, 100(4), 798-811.
- Jenkins, S. R., Belanger, A., Connally, M. L., Boals, A. and Durón, K. M. (2013), First-generation undergraduate students' social support, depression, and life satisfaction. *Journal of College Counseling*, 16(2), 129-142. doi: 10.1002/j.2161-1882.2013.00032.x
- Johnson, D. W., & Johnson, R. T. (1989). Cooperation and competition: Theory and research. Edina, MN US: Interaction Book Company.
- Kidwell, C. S. (1994). Higher education issues in Native American communities. *Minorities in Higher Education*. Phoenix, AZ: American Council on Education and the Oryx Press.
- LaFramboise, T. D., Berman, J. S., & Sohi, B. K. (1994). American Indian women. In L. Comas-Díaz & B. Greene (Eds.), *Women of color: Integrating ethnic and gender identities in psychotherapy*. (pp. 30-71). New York, NY US: Guilford Press.
- Lango, D. R. (1995). Mexican American female enrollment in graduate programs: A study of the characteristics that may predict success. *Hispanic Journal of Behavioral Sciences*, 17(1), 33-48.
- Legault, L., Green-Demers, I., & Pelletier, L. (2006). Why do high school students lack motivation in the classroom? Toward an Understanding of Academic Amotivation and the Role of Social Support. *Journal of Educational Psychology*, 98(3), 567-582.
- Levesque C., Copeland, K. J., Pattie M. D., and Deci E. L. (2010). Intrinsic and extrinsic motivation. In: Penelope Peterson, Eva Baker, Barry McGaw, (Eds). *International Encyclopedia of Education*, 6, 618-623.

- Lewinsohn, P. M., Roberts, R. E., Seeley, J. R., Rohde, P., Gotlib, I. H., & Hops, H. (1994). Adolescent psychopathology: II. Psychosocial risk factors for depression. *Journal of Abnormal Psychology*, 103, 302-315.
- McCarron, G. P., & Inkelas, K. K. (2006). The gap between educational aspirations and attainment for first-generation college students and the role of parental involvement. *Journal of College Student Development*, 47(5), 534-549.
- Misra, R., Crist, M., & Burant, C. J. (2003). Relationships among life stress, social support, academic stressors, and reactions to stressors of international students in the United States. *International Journal of Stress Management*, 10(2), 137-157. doi:10.1037/1072-5245.10.2.137
- Misra, R., McKean, M., West, S., & Russo, T. (2000). Academic stress of college students: Comparison of student and faculty perceptions. *College Student Journal*, 34(2), 236.
- Niemiec, C., & Ryan, R. (2009). Autonomy, competence and relatedness in the classroom: Applying self-determination theory to educational practice. *Theory and Research in Education*, 7(2), 133-144.
- Perrakis, A. I. (2008). Factors promoting academic success among African American and white male community college students. *New Directions for Community Colleges*, 142. doi: 10.1002/cc.321
- Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology*, 24, 1-24. doi:10.1146/annurev.soc.24.1.1
- Rahat, E., & Ilhan, T. (2016). Coping styles, social support, relational self-construal, and resilience in predicting students' adjustment to university life. *Educational Sciences: Theory & Practice*, 16, 187-208. <http://dx.doi.org/10.12738/estp.2016.1.0058>
- Ramos-Sanchez, L., & Nichols, L. (2007). Self-efficacy of first-generation and non-first-generation college students: The relationship with academic performance and college adjustment. *Journal of College Counseling*, 10-14.
- Riehl, R. J. (1994). The academic preparation, aspirations, and first-year performance of first-generation students. *College and University*, 70(1), 14-19.
- Sandler, I., Wolchik, S., Braver, S., & Fogas, B. (1991). Stability and quality of life events and psychological symptomatology in children of divorce. *American Journal of Community Psychology*, 19(4), 501-520. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/1755433>
- Sarason, B. R., Shearin, E. N., Pierce, G. R., & Sarason, I. G. (1987). Interrelations of social support measures: Theoretical and practical implications. *Journal of Personality and Social Psychology*, 52(4), 813-832. doi:10.1037/0022-3514.52.4.813
- Sheets, R. L. and Mohr, J. J., (2009). Perceived social support from friends and family and psychosocial functioning in bisexual young adult college students. *Journal of Counseling Psychology*, 56(1), 152-163. doi: 10.1037/0022-0167.56.1.152
- Steinberg, L., Lamborn, S. D., Dornbush, S. M., & Darling, N. (1992). Impact of parenting practices on adolescent achievement: Authoritative parenting, school involvement, and encouragement to succeed. *Child Development*, 63(5), 1266-1281.
- Terenzini, P. T., Springer, L., Yaeger, P. M., Pascarella, E. T., & Nora, A. (1996). First-generation college students: Characteristics, experiences, and cognitive development. *Research in Higher Education*, 37(1), 1-22. doi:10.1007/BF01680039
- Tinto, V. (1975), "Dropout from higher education: a theoretical synthesis of recent research", *Review of Educational Research*, Vol. 45, pp. 89-125.
- Tinto, V. (2007), "Research and practice of student retention: what next?", *Journal of College Student Retention: Research, Theory, and Practice*, Vol. 8, pp. 1-19.
- Utsey, S. O., Ponterotto, J. G., Reynolds, A. L., & Cancelli, A. A. (2000). Racial discrimination, coping, life satisfaction, and self-esteem among African Americans. *Journal of Counseling & Development*, 78(1), 72-80.
- Vallerand, R. J. (2001). A hierarchical model of intrinsic and extrinsic motivation in sport and exercise. In G.C. Roberts (Ed.), *Advances in motivation in sport and exercise* (pp. 263-319). Champaign, IL: Human Kinetics.
- Vallerand, R. J., Blais, M. R., Brière, N. M., & Pelletier, L. G. (1989). Construction et validation de l'échelle de motivation en éducation (EME). *Canadian Journal of Behavioural Science/Revue, Canadienne des Sciences du Comportement*, 21(3), 323-349. doi:10.1037/h0079855
- Vedder, P., Boekaerts, M., & Seegers, G. (2005). Perceived social support and well being in school: The role of students' ethnicity. *Journal of Youth & Adolescence*, 34(3), 269-278. doi:10.1007/s10964-005-4313-4
- Wang, C., Castañeda-Sound, C. (2008). The role of generational status, self-esteem, academic self-efficacy, and perceived social support in college students' psychological well-being. *Journal of College Counseling*, 11, 112-115.
- Wethington, E., & Kessler, R. C. (1986). Perceived support, received support, and adjustment to stressful life events. *Journal of Health & Social Behavior*, 27(1), 78-89.

- Williams, S. M., & Ferrari, J. R. (2015). Identification among first-generation citizen students and first-generation college students: An exploration of school sense of community. *Journal of Community Psychology*, 43, 377-387.
- Wills, T. A., Blechman, E. A., & McNamara, G. (1996). Family support, coping, and competence. In E. M. Hetherington & E. A. Blechman (Eds.), *Stress, coping, and resiliency in children and families*. Family Research Consortium: Advances in family research (pp. 107-133). Hillsdale, NJ England: Lawrence Erlbaum Associates, Inc.
- Wright, K. B., King, S., & Rosenberg, J. (2014). Functions of social support and self-verification in association with loneliness, depression, and stress. *Journal of Health Communication*, 19, 82-99.
- Young, A., Johnson, G., Hawthorne, M., & Pugh, J. (2011). Cultural predictors of academic motivation and achievement: A self-deterministic approach. *College Student Journal*, 45(1), 151-163.
- Young, A., Johnson, G., Arthur, H., & Hawthorne, M., (2011). Cultural and socioeconomic differences in academic motivation: A self-determination approach. *Journal info?*
- Young-Jones, A., Levesque-Bristol, C., & Cara, K. C. (2014). Verbal and behavioural cues: Creating an autonomy-supportive classroom. *Teaching in Higher Education*, 19(5), 1-13.  
doi: 10.1080/13562517.2014.880684
- Zea, M. C., Jarama, S. L., & Bianchi, F. T. (1995). Social support and psychosocial competence: Explaining the adaptation to college of ethnically diverse students. *American Journal of Community Psychology*, 23(4), 509-531. doi:10.1007/BF02506966
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, 52(1), 30-41. doi:10.1207/s15327752jpa5201\_2



# EFFECTIVENESS OF DIRECT INSTRUCTION LEARNING STRATEGY ASSISTED BY MOBILE AUGMENTED REALITY AND ACHIEVEMENT MOTIVATION ON STUDENTS COGNITIVE LEARNING GEOMETRY RESULTS

Achmad Buchori<sup>1</sup>, Punaji Setyosari<sup>2</sup>, I Wayan Dasna<sup>3</sup>, Saida Ulfa<sup>4</sup>, I Nyoman Sudana Degeng<sup>5</sup>, and Cholis Sa'dijah<sup>6</sup>

<sup>1</sup>Universitas PGRI Semarang, Central Java, Indonesia  
<sup>2,3,4,5,6</sup>Universitas Negeri Malang, East Java, Indonesia

<sup>1</sup>E-mail: achmadbuchori@upgris.ac.id

<sup>2,3,4,5,6</sup>E-mail: pun\_pasca@yahoo.com, idasna2006@yahoo.co.id, saida.ulfa@gmail.com,  
nyoman.sudana.d.fip@um.ac.id, cholis.sadjah.fmipa@um.ac.id

## ABSTRACT

The study aims are to determine whether there is a difference in the average learning outcomes between students who are subject to Direct instruction model aided by mobile augmented reality and Direct instruction model supported by non mobile augmented reality. The presence or absence of significant differences in cognitive learning outcomes between groups of students with high achievement motivation, moderate achievement motivation, and low achievement motivation group. There is no interaction between learning strategies and achievement motivation toward cognitive learning outcomes.

Population in this research is all student of semester 1 academic year 2016/2017 Sample is taken by using sampling cluster random sampling technique in mathematics education study of Universitas PGRI Semarang. Methods of data collection in this study are obtained by using interview methods, test methods, and method documentation. The results showed that: (a) There were significant differences in cognitive learning outcomes between groups of students treated with direct instructional strategies with MAR and group of students who were treated with direct instruction learning strategies with non-MAR. (B) There is a significant difference of cognitive learning outcomes between groups of students with high achievement motivation, moderate achievement motivation and low achievement motivation group. (C) There is an interaction between learning strategies and achievement motivation toward cognitive learning outcomes.

**Keywords:** Direct instruction, Mobile Augmented Reality, Achievement motivation, cognitive learning results

## INTRODUCTION

In producing a good learning process require a variety of learning strategies appropriate with the conditions in the classroom, if students are less active then they are given the model student learning center that is able to make them more active, if students understanding on the subject are not too much then they are given the model of a teacher center learning so that students can easily understand the Material. (Sunandar, 2016), in the learning process at PGRI University of Semarang, especially the subject matter of the students' geometry subject had experienced many difficulties in understanding the material because the geometry material needs procedural capability by mastering the definition, theorem, axiom, postulate and so on therefore required model or Strategies that can fit the characteristics of students and the conditions of learning in the classroom, one of the appropriate learning model is direct instruction model or direct instruction because it can focus in guiding students in mastering the material (Arends, 1997)

Direct Instruction model demands and assists students in improving their learning capabilities. This is reinforced by Reynold's (1996) study which found that one of the factors that led to differences in student learning outcomes in both the UK and Singapore is the use of whole-class interactive teaching which is one of the main factors of Direct Instruction (DI). This contradicts Hanafiah (2010) which mentions the difference between teacher-centered and student-centered classes, where the classroom taught by the teacher makes the student less active, while the class taught by the active student model makes the class more active and creative, This is well responded by Magliaro (2005) explaining that the revised direct instruction model is able to integrate computer-assisted learning when the classroom practice process is helpful in understanding the concept of learners and making the class more active and interactive. This is reinforced by Ozdemir (2017) that shows that direct learning can be applied in learning with the help of technology, teachers in Turkey is greatly helped by the computer media in explaining the material to the students.

In choosing learning media that match the characteristics of learning geometry, one of such is augmented reality media because this media is able to display two-dimensional objects into three-dimensional objects that enable students to understand the material geometry interesting and attractive, the number of renewable media today has an impact or effect Which is significant in the learning process, because learning acts occur when interacting with the media (Degeng, 2013), in the process of learning mathematics in schools and colleges the effects of technology or renewable media such as mobile phones, tablets and other communication media greatly affect the way they learn. (Herrington, 2009). One of them mobile learning media that can be used to solve the problems of traditional learning systems that are usually face to face which makes the learning process more flexible. (Sarrab, 2012)

Mobile learning media that can be selected and in accordance with the characteristics of the geometry course is a mobile augmented reality media. This is because with mobile augmented reality is able to add the existing reality becomes more interesting and easy to understand by the students in adding or completing the reality of a material. (Shearer, 2016). Mobile media augmented reality is the combined learning media of print technology and computer / mobile (Craig, 2013). Augmented Reality or also called embedded reality is a technology used to combine 2D / 3D objects in the virtual world into the real world in real-time (Kauffman, 2000). Mobile Augmented Reality is a technology that combines two-dimensional and three-dimensional virtual objects into a real three-dimensional environment and projects those virtual objects in real time with mobile phones (Azuma, 1997).

Basically geometry has a greater opportunity for students to understand compared to other branches of mathematics. This is because geometric ideas have been known by students since before they entered school. Nevertheless, the evidence in the field shows that the learning outcomes of geometry are still low and need to be improved (Budiarto, 2000) In fact, among the various branches of mathematics, geometry occupies the most apprehensive position (Sudarman, 2000). In Muin's research (1997) shows that mastery of geometry concept of new student of FPMIPA IKIP, FKIP University, and STKIP of State and Private in East Java ranged from 7,14% to 80% meaning that the mastery of student geometry concept is still not maximal. Further strengthened by research by Suparyan (2007) indicates that the mathematics students in Semarang State University is still weak in the mastery of geometry subject material especially its spatial learning results

To produce the maximum result of geometry subject learning require a maximum student achievement motivation, this as shown by Keller (1987) that with the achievement motivation then the student will follow the learning with earnest and get the desired target with maximal, in which is supported by according Supraswati (2016) and Yulistian (2013) shows that achievement motivation is divided into 3 kinds of high achievement motivation, moderate and low, in order to facilitate to map motivation learners. Which student learning outcomes will be influenced by their achievement motivation personally.

From the support of these theories it can then be formulated how the effectiveness of the use of direct instruction learning strategy with mobile augmented reality media and achievement motivation to the cognitive learning outcomes of students in geometry courses.

## METHODOLOGY AND DATA

### Type Of Research

This research uses quasi experimental design method (quasi experiment), is a form of experimental design development from true experimental design (Sugiyono, 2009). The experimental design in this study was posttest Only Control Design, in which there were three groups, each selected randomly, the first and second group were treated and called the experimental group and the third group which was not treated was called the control group (Setyosari, 2013 ). The research design can be seen in the following table:

**Tabel 1. Research Design**

Group	Treatment	End Result
<b>Experiment</b>	Direct Instruction learning model with mobile augmented reality	Post test
<b>Control</b>	Direct Instruction learning model with non mobile augmented reality	Post test

**Subject**

The subject to try of this research is student of mathematics education of (FPMIPATI) of University PGRI Semarang on their first semester, in the course of Geometry which consists of 245 students, and then use a randomly selected sampling from 1E class experiment of 32 students and 1C class control of 32 students.

**Instrument Data Collectors**

The method of data collecting are thru Interview, test and documentation developed by the researcher.

**Data analysis**

Data analysis techniques in this study includes: 1) analysis of cognitive learning outcomes test data; 2) initial data analysis (homogeneity and normality test); 3) learning effectiveness analysis (one way anova test, t test).

**RESULT AND DISCUSSION**

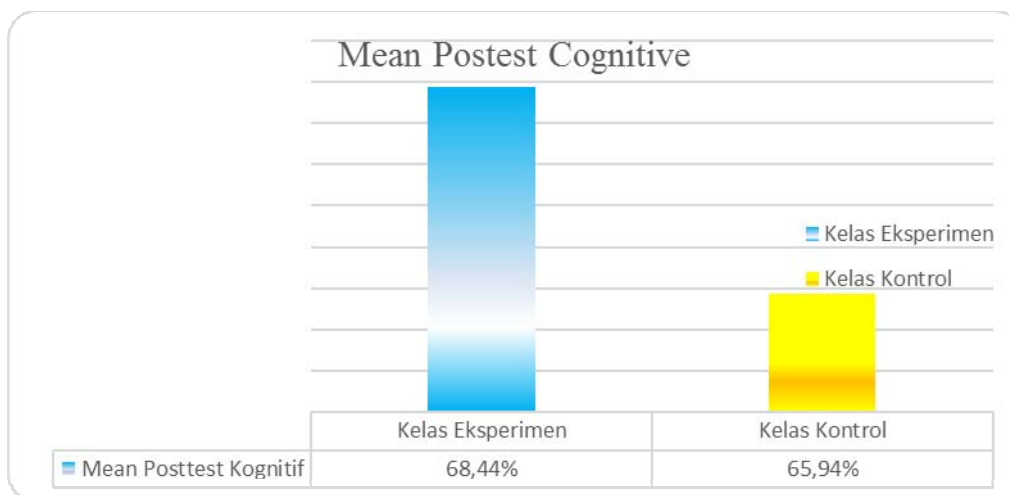
After fulfilling the prerequisite test analysis, it can then be continued with the parametric analysis, that is the analysis of hypothesis test research. Results obtained as follows :

- a) **Learning Outcomes of Cognitive Learning by Direct Instruction Learning with MAR and students Taught by Direct Instruction Learning with non MAR.**

**Table 2. One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
Control_Class	32	65.94	12.144	2.147
Experiment_Class	32	68.44	8.930	1.579

From the data above, it can be seen that the student's cognitive learning outcomes that are taught using Direct Instruction learning with MAR (experimental class) are higher than those taught using Direct Instruction learning strategy with non MAR (control class), with mean at 68,44 > 65 , 94. For more details can be seen in the graph below :



*Figure 1 Mean Learning Outcome of Student's Cognitive Learning by Direct Instruction Learning With MAR and Students Taught by Direct Instruction Learning with non MAR*

Figure above are then followed by t test, shows that there is a difference of learning result of cognitive learning result between student taught by Direct Instruction learning strategy with MAR and Direct Instruction learning with non MAR.  $H_1$  is accepted and  $H_0$  is rejected, because from the t-test data for Equality of Means obtained  $t_{count}$  of 2.189 and  $t_{table}$  with (df) 64 and alpha 5% is about 2,000. This means that There is a difference in

cognitive learning outcomes between students taught using Direct Instruction learning with MAR and Direct Instruction learning with non MAR", because  $2,189 > 2,000$

**Table 3. Independent Samples Test**

	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	1.286	.261	-2.189	62	.032	-8.057	3.680	-15.413	-.701
Equal variances not assumed			-1.949	18.113	.067	-8.057	4.134	-16.739	.624

The findings of this study, in accordance with the results of previous studies conducted by Fitzgerald (1998) who use learning with hypermedia-assisted direct instruction as a research variable. Showed that instructional strategies with direct instruction improve cognitive learning outcomes. Also supported by research by Frieberg (2000) that learning with problems improve the results of better cognitive learning of concepts and solutions so that there is an increase in the structure of meaningful materials in professional development. The results of cognitive and spatial learning are influenced by the learning strategies as reported by previous researchers (Gersten, 2001), and the results of Viadero's (2002) study suggest that there is an increase in the students' cognitive learning outcomes in mathematics learning.

Subsequent research, conducted by Schunk, (2000) suggests the regularity of both cognitive and spatially-minded media consciousness has increased significantly from the first year to the second year and the third year. Furthermore Swanson (2001). In his research revealed that 80% of respondents of disabled children experience improvement in cognitive learning outcomes with direct instruction instruction significantly and significantly different with groups that follow the conventional learning.

Magliaro (2005) explains that understanding in the domain is an absolute requirement for higher cognitive learning outcomes such as: application, analysis, evaluation, and creativity. So Buchori et al (2016) Learning outcomes-cognitive learning outcomes with the understanding include: critical thinking, creative, decision-making, and problem solving. So, to improve the thinking skills needed learning that can improve understanding of the concepts being taught.

**b) Differences in cognitive learning outcomes of students who have high achievement motivation, moderate and low achievement motivation**

From the result of spss obtained shows that  $H_1$  received and  $H_2$  is rejected, because from the t-test data for Equality of Means obtained  $t_{hitung}$  of 2.177 and  $t_{tabel}$  with (df) 63 and alpha 5% is about 2,000. This means "There are differences in cognitive learning outcomes of students who have high achievement motivation, moderate and low achievement motivation", because  $2.177 > 2,000$

**Tabel 4. Independent Samples Test**

	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.214	.645	2.177	62	.033	6.623	3.042	.542	12.703
Equal variances not assumed			2.379	23.927	.026	6.623	2.783	.877	12.369

Several research results, showing that the application of learning strategies with modified direct instruction gives a better effect on cognitive learning outcomes found by Gujjar (2007); This proves that the direct instruction learning strategy with the media is one of the efforts to familiarize and assist the students in using their cognitive and spatial learning outcomes. Improving the results of cognitive learning will certainly have an impact on student learning outcomes.

The results of this study show that learning strategies Direct Instruction by MAR can improve student learning outcomes in cognitive and spatial learning result achievement better because the learning process provides an opportunity to the process actively and creativity where students can build their knowledge and skills, students are encouraged to able to solve problems. This is in consistency with the results of research conducted previously by some experts Ewing (2002) stated that learning with direct instruction has the potential to improve cognitive learning outcomes and results of spatial learning of students, as well as the attachment of class by combining the interests of students with a variety of challenges, tasks solving An authentic problem.

Similarly, proposed by Bessellieu (2001) that learning by direct instruction, for example modified develop essential skills of critical thinking, problem solving strategies, self-regulated learning, and collaboration within the team. Correspondingly, Farkota (2003) states that learning with direct instruction develops cognitive learning outcomes. Learning by direct instruction can help to overcome the deficit in the reasoning of students (Flores, 2007) and it is also consistent with the statement and the views of various experts that Arends (2008) suggested that learning with direct instruction modified is an approach to learning that uses real-world problems as a context for students To learn about spatial thinking.

**c) There is an interaction between learning strategies and achievement motivation toward cognitive learning outcomes**

From the results if the spss obtained: H<sub>1</sub> accepted and H<sub>0</sub> rejected. This means "There is an interaction between learning strategies and achievement motivation toward cognitive learning outcomes", because 0.008 < 0.05

**Table 5. Tests of Between-Subjects Effects**

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Noncent. Parameter	Observed Power <sup>c</sup>
	Cognitive_Learning Results	2461.687 <sup>a</sup>	5	492.337	4.207	.002	21.034	.942
	Spatial_Learning Results	2534.528 <sup>b</sup>	5	506.906	3.167	.014	15.834	.850
	Cognitive_Learning Results	279016.976	1	279016.976	2384.085	.000	2384.085	1.000
	Spatial_Learning Results	307650.810	1	307650.810	1922.024	.000	1922.024	1.000
	Cognitive_Learning Results	1327.646	2	663.823	5.672	.006	11.344	.845
	Spatial_Learning Results	2038.608	2	1019.304	6.368	.003	12.736	.886
	Cognitive_Learning Results	47.645	1	47.645	.407	.526	.407	.096
	Spatial_Learning Results	203.504	1	203.504	1.271	.264	1.271	.198
	Cognitive_Learning Results	1221.428	2	610.714	5.218	.008	10.437	.812
	Spatial_Learning Results	312.304	2	156.152	.976	.383	1.951	.212
	Cognitive_Learning Results	6787.922	58	117.033				
	Spatial_Learning Results	9283.831	58	160.066				
	Cognitive_Learning Results	300175.000	64					
	Spatial_Learning Results	341725.000	64					
	Cognitive_Learning Results	9249.609	63					
	Spatial_Learning Results	11818.359	63					

- a. R Squared = .266 (Adjusted R Squared = .203)
- b. R Squared = .214 (Adjusted R Squared = .147)
- c. Computed using alpha = .05

Findings mentioned above according to the results of research by Hempenstall (2004). Reveals that modified direct instruction learning strategies have a better effect on improving students' spatial skills compared to ordinary straightforward learning strategies. In line with Magliaro (2005) which states that learning with modified direct instruction can also encourage spatial learning outcomes and lifelong effect in students motivation. So he can try to understand all the material form given by the lecturer, as well as stimulate their thinking patterns to be able to develop in accordance with the circumstances so that all forms of problems that can be solved.

This is in line with the opinion of Arends (2008) which explains that direct instruction learning can help students develop cognitive and spatial thinking skills, problem-solving skills, and intellectual skills as well as student understanding outcomes. In addition Marchand (2004) also outlined some of the benefits of direct instruction learning such as: encouraging students to focus more on relevant knowledge, encouraging to understand, critical thinking, and reflective, building teamwork, leadership and social skills, building learning skills, and can motivate student learning. Similarly, with the results of research conducted by Snider (2004) on the application of learning with direct instruction with the media can improve students' spatial learning outcomes.

In addition to the results of this study, also in accordance with the results of research conducted by Stein (2006) on "The use of learning with direct instruction in improving students' spatial learning outcomes in learning mathematics" found that after learning with MAR media students become increasingly critical in issuing opinions, ask , Identify problems and provide solutions to problems presented by lecturers. In line with that statement, the instructional strategy with direct instruction can make the students progressively become more responsible for their education and make the students grow independent in learning against the dominance of lecturer's role (Stotsky, S.: 2006).

The results show that Direct Instruction learning strategy with MAR is superior to Direct Instruction non MAR learning strategy, it is possible, because in Direct Instruction learning with MAR there is a serious effort to involve students actively in solving problems related to context Learning geometry. Wilson (2006) states that learning involving students can earnestly develop students' cognitive learning outcomes to understand the mathematical material in detail. Various studies show that learning with problems has a very positive impact on learning outcomes both cognitive learning outcomes and spatial learning outcomes, some of which are conducted by Wood (2006) which explains that learning with problems has an effect on students having average results Higher learning compared to non direct instruction instruction MAR.

## CONCLUSION

In conclusion, the results of this study are divided into two conclusions as follows :

- a. There were significant differences in cognitive learning outcomes between groups of students treated with direct instructional strategies with MAR and group of students who were treated with direct instruction instructional treatment with non-MAR. Acquisition of learning outcomes of cognitive learning outcomes of the group of students with the treatment of direct instruction learning strategy with MAR is superior compared to the student group with the treatment of direct instruction strategy with non-MAR
- b. There are significant differences in cognitive learning outcomes between groups of students with high achievement motivation, moderate achievement motivation, and low achievement motivation group. Achievement of learning outcomes of cognitive learning outcomes group of students who have high achievement motivation are more superior compared with groups of students who have low achievement motivation
- c. There is an interaction between learning strategies and achievement motivation toward cognitive learning outcomes

## REFERENCES

- Arends, Richard I. (1997). *Classroom Instruction and Management*. New York: Mc Graw Hill.
- Azuma, R. A (1997), Survey of Augmented Reality. *PRESENCE: Teleoperators and Virtual Environments*, 6,(4), 355-385
- Bessellieu, F., Kozloff, M., & Rice, J. (2001). Teachers' perceptions of direct instruction teaching. *Direct Instruction News*, 1(1), 14-18.
- Buchori A, Setyosari P, Dasna I W, Ulfa S (2016) Developing Character Building Learning Model Using Mobile Augmented Reality On Elementary School Student In Central Java, *Global Journal of Pure and Applied Mathematics* 12 (4) pp. 3433-3444
- Budiarto, M.T..2000. Pembelajaran Geometri dan Berpikir Geometri.Dalam prosiding Seminar Nasional Matematika "Peran Matematika Memasuki Milenium III".Jurusan Matematika FMIPA ITS Surabaya. Surabaya, 2 Nopember.
- Craig A.B. (2013). *Understanding Augmented Reality: Concepts and Applications*. Newnes
- Coimbra (2015) Augmented Reality: an Enhancer for Higher Education Students in Maths learning? 6th International Conference on Software Development and Technologies for Enhancing Accessibility and Fighting Infoexclusion , *Procedia Computer Science* 67 ( 2015 ) 332 – 339
- Ewing, R. (2002). Framing a professional learning community: An Australian case study. *Curriculum Perspectives*, 22(3), 23–32.
- Farkota, R. (2003). The effects of a 15 minute direct instruction intervention in the regular mathematics class on students' mathematics self-efficacy and achievement. Faculty of Education, retrieved from <http://www.acer.edu.au/documents/FarkotaThesis.pdf>
- Flores, M., & Kayler, M. (2007). The effects of a direct instruction program on the fraction performance of middle school students at-risk for failure in mathematics. *Journal of Instructional Psychology*, 34(2), 84-94.
- Friberg, H. J., & Driscoll, A. (2000). *Universal teaching strategies* (3rd ed.). Boston: Allyn & Bacon.
- Gersten, R., Baker, S., Pugach, M., Scanlon, D., & Chard, D. (2001). Contemporary research on special education teaching. In V. Richardson (Ed.), *Handbook of research on teaching* (4th ed.) (pp. 695-722). Washington, DC: American Educational Research Association
- Hanafiah, Nanang & Suhana, Cucu. (2010). *Konsep Strategi Pembelajaran (The Concepts of Instructional Strategies)*. Refika Aditama, Bandung.
- Reynold D (1996) *Turning around ineffective schools: some evidence and some speculations*, London, Cassell
- Heinich, Molenda, et. all (2005). *Instructional Technology and Media for Learning*. Ohio: Pearson Merrill Hall
- Herrington, A, Herrington, J and Mantei, J, (2009), "Design principles for mobile learning, in *New technologies, new pedagogies: Mobile learning in higher education*, Faculty of Education, University of Wollongong, 4 (2) 138-145.
- Hempenstall, K. (2004). The importance of effective instruction. In N. Marchand-Martella,T., Slocum, & R., Martella, (Eds.), *Introduction to direct instruction* (pp. 1-27). Boston: Pearson.
- Fitzgerald (1998), *Expert and Novice Performance in a Hypermedia Learning Environment for Classroom Observation Skills: The Impact of Prior Teaching Experience*, *Journal of Educational Computing Research* (19) 2, pp 115-131
- Degeng, I Nyoman Sudana. (2013). *Ilmu Pembelajaran Klasifikasi Variabel untuk Pengembangan Teori dan Penelitian*. Bandung: PT Aras Media
- Keller J., and Suzuki K. (2004), *Learner Motivation and e-learning design* . *Journal of Educational Media* 29(3) 233-236.
- Kaufmann, H., Schmalstieg, D., and Wagner (2000), *M.Construct3D: A Virtual Reality Application for Mathematics and Geometry Education*. *Education and Information Technologies* 5(4) 263-276.
- Kumar Behera Santosh. (2013), *M-Learning: A New Learning Paradigm*, *International Journal on New Trends in Education and Their Implications*, 4 (3), 24-34.
- Magliaro, S., Lockee, B., & Burton, J. (2005). Direct instruction revisited: A key model for instructional technology. *Educational Technology Research & Development*, 53(4), 41-55.
- Marchand-Martella, N., Blakely M. & Schaefer, E., (2004). Aspects of schoolwide implementations. In N. Marchand-Martella, Slocum, T., & Martella, R. (Eds.), *Introduction to direct instruction* (pp. 304-331). Boston: Pearson.



- Muin dkk (1997) profile penguasaan geometri mahasiswa baru FPMIPA IKIP, FKIP UNIVERSITAS dan STKIP Ngeri Sasta di jawa timur, pusta penelitian surabaya
- Quinn, C. (2000). Mlearning, Mobile Wireless in Your Pocket Learning. [Online]. Tersedia:<http://www.linezine.com/2.1/feature/cqmmwiyp.htm>
- Sarrab Mohamed, Laila Elgamel, Hamza Aldabbas. (2012), Mobile Learning (M-Learning) and Educational Environments, International Journal of Distributed and Parallel Systems, 3 (4), 31-38.
- Schunk, D. H. (2000). Learning theories: An educational perspective. Upper Saddle River, NJ: Merrill
- Setyosari, Punaji. (2013). "Metode Penelitian Pendidikan & Pengembangan" edisi Keempat. Penerbit Prenadamedia Group, Jakarta
- Shearer (2016) pengenalan mobile augmented reality di UGM.kompas media published (28 Maret 2016)
- Stein, M., Kinder, D., Silbert, J., & Carnine, D. (2006). Designing effective mathematics instruction: A direct instruction approach - Chapter 1: Direct instruction. Direct Instruction News, 6(1), 20-31.
- Stotsky, S. (2006). Progress in mathematics research base. Retrieved 21/02/17, from [http://www.sadlier-oxford.com/docs/pdf/90656-F\\_PIM\\_Research\\_FINAL.pdf](http://www.sadlier-oxford.com/docs/pdf/90656-F_PIM_Research_FINAL.pdf)
- Subagyo dkk (2015) pengenalan rumus bangun ruang matematika berbasis augmented reality prosiding snatif ke -2 tahun 2015 hal 29-32 UMK Kudus
- Sugiyono. (2009). Metode Penelitian Pendidikan: Pendekatan Kualitatif, Kuantitatif, dan R&D. Bandung: Alfabeta
- Sunandar, Buchori. A, Rahmawati. N.D (2016) Development of Media Kocerin (Smart Box Interactive) To Learning Mathematics in Junior High School, Global Journal of Pure and Applied Mathematics 12 (6) pp. 5253-5266
- Suparyan (2007) . Kajian kemampuan keruangan dan kemampuan penguasaan materi geometri mahasiswa pendidikan matematika Universitas Negeri Semarang , Tesis Pascasarjana UNNES.
- Supraswati (2016) The Correlation Between Achievement Motivation And Teacher Performance In Teaching At Elementary Schools In Silawe Kajoran Magelang Jurnal Pendidikan Sekolah Dasar 14 (5) hal 1-10
- Swanson, H. L. (2001). Searching for the best model for instructing students with disabilities. Focus on Exceptional Childre,n 34 (2), 1-15
- Viadero, D. (2002). Studies cite learning gains in direct instruction schools. Education Week 21 (31), p. 15.
- Yingprayoon, (2015) .Teaching Mathematics using Augmented Reality Proceedings of the 20th Asian Technology Conference in Mathematics (Leshan, China, 2015) page 384-391
- Yulistian (2013) program bimbingan belajar untuk meningkatkan motivasi berprestasi dan prestasi belajar peserta didik, repository. upi.edu
- Wilson, L., Andrew, C., & Below, J. (2006). A comparison of teacher/pupil interaction within mathematics lessons in St Petersburg, Russia and North-East of England. British Educational Research Journal, 32(3), 411-441.
- Wood, T., Shin, S., & Doan, P. (2006). Mathematics education reform in three US classes. In D. Clarke, C., Keitel, & Y., Shimizu, (Eds.), Mathematics classrooms in twelve countries: The insider's perspective (pp. 75-86). Rotterdam: Sense Publishers.

# EXPLORING THE POTENTIAL OF DIFFERENT TEACHING AIDS IN THE CONCEPTUAL DEVELOPMENT OF STUDENTS IN THE CHEMISTRY SUBJECT IN SECONDARY SCHOOLS: USING DIDACTIC POSTERS AND LOCALLY AVAILABLE MATERIALS

Amália Uamusse  
Eduardo Mondlane University  
Maputo, Mozambique  
amaliauamusse@gmail.com

## ABSTRACT

One major problem in the teaching and learning process of Chemistry in Mozambique is the inadequate provision of teaching aids and laboratory resources. This study is based on a constructivist approach and describes the results of a teaching strategy that uses locally available materials to stimulate students' conceptual understanding and learning process. In this work there was used a mixed methodology research approach based on qualitative and quantitative methods. Two groups of students were taught, the experimental group with the new teaching resources and the control group with the conventional methods. Overall the results show a successful implementation of the teaching strategy that can be used to motivate school teachers to explore their environment and search for everyday materials and objects that can be used for teaching chemistry.

**Keywords:** potential of didactic posters, locally available materials, chemistry teaching, constructivist approach.

## INTRODUCTION

Different studies revealed that student's poor performance in science subjects in many African countries is linked to lack of financial resources, inadequate teaching aids, shortage of basic materials and equipment (Nieuwoudt et al., 2007; Hattingh et al., 2007).

Despite recent changes in school curriculum emphasizing experimentation and problem solving, so called "doing science", no significant improvement of students' performance has been achieved, because teachers did not adapt their teaching strategies. There is a need to develop innovative teaching materials to support contextualization of science teaching (Hattingh et al., 2007; Dlamini, 2008).

In the large majority of Mozambican schools there are no minimal teaching materials or aids, not even books. The teaching of chemistry is limited to the use of blackboard, chalk, eraser and student handbook, thus the teaching of chemistry is very theoretical and not attractive, contributing to students' academic poor performance (Mendonça, 2006; Kuleshov and Sacate, 2007). These findings were corroborated by chemistry and biology teachers during a Training Program, who stated that science teaching is constrained by inappropriate conditions that vary from the lack of adequate infra-structures, laboratory equipment and supplies, to overwhelming classrooms, time allocated to laboratory sessions and pressure to finish the extensive syllabus (Cossa and Uamusse, 2014).

Interviews and lessons observations in Maputo city schools revealed that students faced difficulties in understanding the concepts of chemical bonds and chemical reactions, especially the chemical properties of substances and the factors influencing the reaction rate. The present study focus on exploring combined innovative teaching strategies, locally affordable materials and didactic posters, in the teaching and learning process of Chemistry.

## THEORETICAL FRAMEWORK

The conceptual framework used in this research is underpinned by the constructivist theory. The central characteristic of constructivist learning theory is the idea that the development of understanding requires active engagement of learners (Jenkins, 2001) and learners discover all knowledge about the world through their own activity (Tholo, 2008). According to Rankhumise and Lemmer, 2008, the challenging task of science educators is to select appropriate teaching strategies and techniques that will enhance the learning of the correct meaning and usage of scientific concepts.

In a study based on a constructivist approach reported by Uamusse et al., 2008, locally available indigenous technologies were used to teach chemistry concepts and processes and the results showed a significant positive performance of students. Previously, a successful intervention on understanding chemical equilibrium concept also based on the constructivist theory was successfully described (Akkus et al., 2003). Therefore, these studies reinforce the findings by Hattingh et.al, 2007, that doing practical work is not significantly dependent on

whether teachers have physical resources (eg. Laboratories, science apparatus or portable laboratory stations), those who are motivated to do practical work will find ways to do so even in the poorest schools.

In the last educational reforms, the Ministry of Education places an emphasis on learner centred curriculum in science subjects, moving away from content driven curriculum (MINED, 2004). For the successful implementation in the chemistry syllabus taking into account the current school conditions in Mozambique, chemistry teaching should include the adoption of interactive teaching methodologies that privileges the use of affordable and easily accessible materials from everyday life, providing opportunities for learners to develop problem solving skills and a critical thinking, through their active involvement in knowledge construction.

Hence, this research proposes the development and joint use of different teaching methods and demonstrates their effectiveness in the teaching - learning process of Chemistry. Didactic posters and laboratory work using locally available materials were combined in a teaching strategy that focused on student centered activities.

### RESEARCH METHODOLOGY

The study took place in a public junior secondary school in Maputo city. A mixed approach involving both qualitative and quantitative methods was used. Document analysis, classroom observations, semi-structured interviews, closed and open-ended questionnaires were employed.

Prior to intervention, the current school chemistry syllabus and textbooks were analyzed, and school teachers were interviewed. The results indicated that students face major difficulties in understanding the topic of chemical bond and chemical reactions. Teachers also pointed out the lack of appropriate teaching resources as a main cause for students' poor performance.

Two classes of grade 9 students were selected; the sample consisted of one hundred and seventeen (117) pupils and six (6) chemistry teachers. One of the classes was used as the control group and taught with conventional methods and the class used as the experimental group was taught with the developed methods.

Written pre and posttest were administered to the sample before and after intervention. The researchers produced the new teaching materials consisting of didactic posters and selected everyday materials for the chemical reactions that were employed for teaching the experimental group, while traditional teaching methods (exposition, blackboard, chalk, and eraser) were used to teach the control group.

An elaborated didactic poster example is shown in figure 1. Two chemical experiments were performed using eggshells and vinegar to demonstrate the influence of surface area and concentration on the rate of a chemical reaction. Prior to intervention, students were instructed to collect eggshells from their households. During the lessons, in the experimental group, there was an interaction between students, presenting and discussing their views on the subject.

### RESULTS

During classroom observations and interviews, it was observed that teachers rarely or never used didactic posters and low-cost materials in the teaching and learning process. Teachers were unanimous in stating that the chemistry syllabus was extensive and they used expository methods to summarize the content and conclude the program.

Lack of financial resources for practical demonstrations of the phenomena and students' lack of interest in chemistry were also pointed out as main constraints.

The pre-test aimed to determine students' level of understanding and skills on basic concepts on the subject matter. Test results showed that there were no significant differences in the responses of the two groups (Table 1).

The post-test was intended to see the changes on the responses of students after the application of different teaching methodologies in the classroom.

The results obtained indicated that there were noteworthy differences in the responses of the two classes, the percentage of positive responses was higher in the experimental class (Table 2).

During the teaching of the experimental group, students were able to apply their prior knowledge in the classroom, they also showed interest in discussing the topic and asked for similar interventions in the future.

The didactic posters facilitated the demonstration of the chemical structures of the compounds, chemical bonds and the steps of atomic changes during chemical reactions were easily visible for students understanding. One more advantage of didactic posters is that, teachers prepare them before lessons and can save the time they would need to write chemical reactions on the blackboard and use this time for more interactions and classroom discussions. On the other hand, the use of easily accessible materials enabled the implementation of experiments with minimal costs, for example eggshells are discarded everyday in households and restaurants.

The effectiveness of the methods used ( $\eta$ ), in this research was calculated based on the following formula by Kuleshov, 2007 :

$$\bar{K} = \frac{\sum_{i=n}^N n_i}{nN}$$

Where  $n_i$  is the number of characters assimilated by the student  $i$ ,  $n$  is the number of characters (elements) of the concept, in this case the number of questions that the test contains and  $N$  is the number of students who participated in the test.

Experimental class

$$\sum_{i=n}^N n_i = 692$$

$$n = 16$$

$$N = 55$$

$$\bar{K}_{\text{exp}} = 0.786$$

Control class

$$\sum_{i=n}^N n_i = 651$$

$$n = 16$$

$$N = 62$$

$$\bar{K}_{\text{con}} = 0.656$$

The coefficient of effectiveness in the given case was calculated as the ratio between

$$\eta = \frac{\bar{K}_{\text{ex}}}{\bar{K}_{\text{con}}}$$

$$\eta = \frac{0.786}{0.656} = 1.198$$

$$\eta > 1$$

The results of the calculations of effectiveness coefficient ( $\eta > 1$ ) demonstrate that the methods used in this research produced positive results and pedagogical experimentation took place successfully.

## CONCLUSIONS

This research has highlighted the possible strengthens of using didactic posters and locally available materials in the teaching and learning process of chemistry.

The use of the methods proposed by the researchers in the experimental group seems to have induced positive changes in the understanding of concepts and students motivation to learn chemistry. Furthermore, the used didactic means captivated students 'attention and willingness to share their own knowledge, interact with others and acquire new scientific knowledge.

In conclusion, the strategy implemented in this study has a strong potential to be expanded to other chemistry and science topics and can help to overcome the difficulties faced by teachers in teaching science in schools.

## REFERENCES

- Akkus, H., Kadayifci, H. and Atasoy, B. 2003. Effectiveness of intervention based on constructivist approach on understanding chemical equilibrium concepts. *Research in Science and Technological Education*, 21: 209-227.
- Cossa, E. and Uamusse, A. 2014. Effects of an In-service Program on Biology and Chemistry Teachers' Perception of the Role of Laboratory Work. *Procedia - Social and Behavioral Sciences* 00 (2014) 000–000. Available online at [www.sciencedirect.com](http://www.sciencedirect.com).
- Dlamini, B., 2008. What works? Features of the contextualized science teaching materials used in Swaziland primary schools. *Proceedings of the 16<sup>th</sup> Annual Conference of the Southern African Association for Research in Mathematics, Science and Technology Education*. Maseru, Lesotho 684-690.
- Hattingh, A., Aldous, C. and Rogan, J. 2007. Some factors influencing the quality of practical work in science classrooms. *African Journal of Research in Mathematics, Science and Technology Education* 11(1):75-90.
- Jenkins, E. W. 2001. Constructivism in school science education: powerful model or the most dangerous intellectual tendency? In F. Bevilacqua, E. Gianneto and M.R. Mathews (Eds). *Science Education and Culture: The contribution of History and Philosophy of Science* 153-164. Dordrecht Kluwer Academic Publishers.
- Kuleshov, V., Sacate, A. R. 2007. Reflexão sobre o uso do conhecimento indígena para o ensino de ciências (Física) em Moçambique. V. seminário de Investigação da Universidade Eduardo Mondlane, Maputo, Mozambique.
- Mendonça, M., 2006. A colaboração mútua na formação em exercícios dos professores de ciências naturais do 1<sup>o</sup> ciclo de ESG. In *Proceedings of the 32<sup>a</sup> International Conference of the Southern African Society for Education*. Maputo, Mozambique 21-26.
- MINED. 2004. Programa da disciplina de Química do 1<sup>o</sup> ciclo do Ensino Secundário geral, Maputo. Mozambique.
- Nieuwoudt, S., Nieuwoudt, H. and Monteith, J. 2007. Influence of a video class system on learners study and learning strategies and their achievement in mathematics. *African Journal of Research in Mathematics, Science and Technology Education* 11(1):1-16.
- Rankhumise, C. and Lemmer, M. 2008. effective teaching of energy in grade 10 mechanics: a case study. *Proceedings of the 16th Annual Conference of the Southern African Association for Research in Mathematics, Science and Technology Education*. Maseru, Lesotho 596-610.
- Tholo, T. 2008. Assessing learners performance in technology education using the technological process. *Proceedings of the 16th Annual Conference of the Southern African Association for Research in Mathematics, Science and Technology Education*. Maseru, Lesotho 870-883.
- Uamusse, A., Mutimucuo, I. V. and Bonga, T. 2008. Integrating indigenous knowledge and technologies in a grade 10 chemistry classroom the use of analogies. *Proceedings of the 16th Annual Conference of the Southern African Association for Research in Mathematics, Science and Technology Education*. Maseru, Lesotho 884-893.

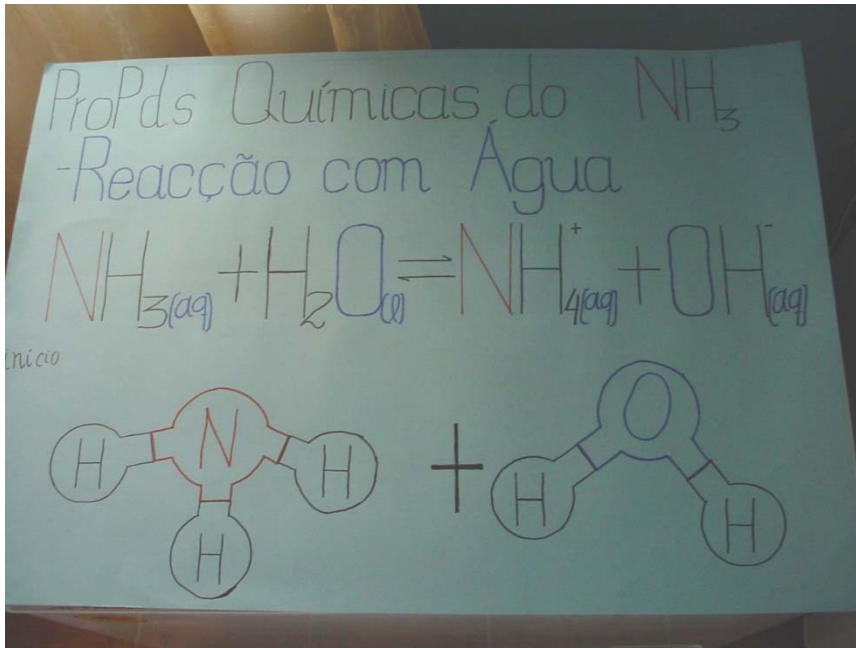


Fig. 1 Representation of a Chemical reaction

Table 1: Pretest results

	Results (%)	
	X <sub>exp</sub>	X <sub>cont</sub>
Yes	100	98.33
No	0	1.66
Yes	93.3	83.33
No	6.66	13.33
Yes	88.88	80
No	11.11	20
R.C	6.66	11.66
R.D	17.77	16.66
R.Exo	0	16.66
R.Endo	8.88	15
R.Redox	100	83.33
Mendeleiv	6.66	63.33
Lavoisier	73.33	18.33
John Dalton	20	18.33
Yes	86.66	58.33
No	13.33	41.66
Yes	44.44	23.33
No	55.55	76.66
Laboratory work	4.4	8.33
Posters	35.55	13.33
Experiments with easily accessible materials	4.4	1.66

R.C = reaction of combination or synthesis  
 R.D = decomposition reaction  
 R.Exo = exothermic reaction  
 R.Endo = endothermic reaction  
 R.Redox = Redox reaction  
 exp= experimental group  
 cont= control group

Table 2: Posttest positive results

Question	Results (%)	
	$X_{exp}$	$X_{cont}$
a)	80.0	80.64
b)	63.63	95.16
c)	96.36	95.16
d)	100	95.16
a)	89.09	30.65
b)	74.54	46.77
c)	83.63	38.71
d)	58.18	58.06
d')	58.18	72.58
a)	94.54	91.93
b)	94.54	93.55
a)	89.09	77.42
b)	87.27	70.96
c)	74.54	30.65
c')	30.90	4.83
4 a)	86.63	67.74



# IDENTIFYING THE PROFESSIONAL KNOWLEDGE BASE FOR MULTI-GRADE TEACHING

M. J. Taole<sup>1</sup>, Linley Cornish<sup>2</sup>

<sup>1</sup>Department of Curriculum and Instructional Studies, University of South Africa, PO Box 392, Pretoria, South Africa taolemj@unisa.ac.za

<sup>2</sup>School of Education University of New England Australia linley.cornish@une.edu.au

## ABSTRACT

Most countries have made significant progress towards achieving the Millennium Development Goal of Universal Primary Education by setting up multi-grade schools in rural and remote areas. The new Sustainable Development Goal for education specifies Quality Education. This paper reports a small-scale qualitative study of teachers and teaching principals in multi-grade rural schools in Australia, focusing on identifying the professional knowledge base required for teachers in such contexts. Such a knowledge base is essential for improving the quality of multi-grade teaching. Interviews and observations revealed that multi-grade teachers need to develop the skills of learner grouping, organisation and routines, curriculum mapping, differentiating the curriculum, multi-level assessment, planning, and time management. Professional learning for multi-grade teachers will help them to implement increasingly effective methods for providing a quality education for the diverse range of learners in their classrooms.

**Keywords:** Multi-grade teaching, types of teacher knowledge, quality education, curriculum mapping, routines, groupings, differentiation, planning

## INTRODUCTION

'Multi-grade teaching' describes the context where teachers have to teach, simultaneously in the same classroom, students in different grades. There are many different terms to describe classes that contain several grades (such as Grades 3, 4, 5 and 6), including multi-age, multi-grade, composite, combination, family, split-level, stage, multi-class and multi-year (Berry, 2010; Cornish, 2010; Juvane, 2005; Mulryan-Kyne, 2005; Little, 2001, cited in Ramrathan & Mzimela, 2016 p. 2). The type of class in this study is a multi-grade class.

Multi-grade classes exist in a number of countries for various reasons. Common reasons include a shortage of teachers and classrooms, low population density, or declining teacher-learner ratio (Little, 2005, pp. 4-5). Multi-grade classes are therefore formed by necessity (Cornish, 2010; Veenman, 1995). They are often found in rural areas or urban hinterlands where population is sparse and distances are too great for students to travel to an urban centre every day. Multi-grade teachers frequently teach the same class for several years.

Many countries have been working towards achieving the second Millennium Development Goal (MDG) of Education for All, or Universal Primary Education (<http://www.un.org/millenniumgoals>), by establishing multi-grade schools in rural and remote areas where communities are often small and poor. UNESCO (2015) regards multi-grade teaching as an important and appropriate way to help nations reach their internationally mandated Education For All targets. A school with multi-grade classes, in many instances, has only one or two classes in total — one for Grades 1 to 3 (foundation phase) and one for Grades 4 to 7 (intermediate and secondary/upper primary phases), and one of the teachers is also the principal. A teaching principal has a full teaching load as well as the principal role (du Plessis, 2014).

Many teachers and parents in these remote areas think multi-grade teaching is somehow "second class" — the last choice of poor systems and something to move away from as quickly as possible by building more classrooms and hiring more teachers, or closing small schools and forcing children to go long distances to larger ones (UNESCO, 2015, p. 2). Many of the multi-grade teachers in these countries are not confident about multi-grade teaching and do not feel well supported by training or resources (Hussain, 2006; Pridmore, 2006). We were interested to explore whether Australian multi-grade teachers feel more positive about multi-grade teaching and what they feel is necessary professional knowledge to be a successful multi-grade teacher. Our hope was that these teachers would be able to identify an essential professional knowledge base for multi-grade teaching. Such a knowledge base is important to identify because of the new global focus on Sustainable Development Goals (SDGs), with the fourth goal being Quality Education (<http://www.un.org/sustainabledevelopment/sustainable-development-goals>). Now multi-grade schools have been established worldwide, it is necessary to support multi-grade teachers so they can provide a quality education for their students.

This small-scale research project was carried out in rural multi-grade schools in the New England region of New South Wales, Australia. In this sparsely settled region, the majority of primary schools (62%) are multi-grade schools (School Education Director, pers. comm.). We 'shadowed' multi-grade teachers and interviewed them

about their experiences of multi-grade teaching. Loughran (2010, p. 38) holds the view that teaching is not just a matter of doing, it is about the doing informing the practice and how that doing is captured, reflected on, deconstructed and reconstructed in a genuine effort to learn from experience. In our research, we observed teachers' "doing" and used our observations as a basis to probe teacher reflections on their practice, in an attempt to identify what they have learned from their experience of teaching a multi-grade class. Our distillation of their responses forms our summary of the professional knowledge base they identified as essential to be an effective multi-grade teacher.

### **CONCEPTUAL FRAMEWORK**

The framework that underpins this article is drawn from two main sources: Shulman's (1986, 1987) delineation of seven different types of knowledge demonstrated by effective teachers, and social-constructivist theory (Vygotsky, 1978). Vygotsky believed that social interactions stimulate learning and that we "construct" understanding and meaning through these social interactions in a cultural context. Because of the special circumstances of their class, multi-grade teachers need to implement social-constructivist principles. Their necessity to work some if not most of the time with sub-groups (different grades) in their class means they must rely on the other learners being able to learn from and with each other. Peers are important for both academic and social development and learning (Cornish, 2006).

In turn, in order to implement successful social-constructivist principles, a multi-grade teacher must be able to match learning needs and learning strategies to the learners in the class. In other words, the teacher must demonstrate Shulman's different types of knowledge: content knowledge, general pedagogical knowledge, curriculum knowledge, pedagogical content knowledge, knowledge of learners and their characteristics, knowledge of educational contexts, and knowledge of educational ends, purposes and values. Shulman's work has been highly influential and his ideas about teacher knowledge have been developed by many other educators, as discussed in the next section.

### **TEACHER KNOWLEDGE**

Teaching is a highly complex activity that draws on many kinds of knowledge (Shulman, 1986, 1987). Calderhead (1991, p. 531) argues that an attempt to seek or to define teacher knowledge presumes that there is a specific knowledge base that underpins the practice of teaching and therefore by defining this knowledge, one is in a better position to prepare pre-service teachers for the teaching task. Buitink (2009, p. 126) holds the view that teacher knowledge is dynamic and encompasses rich and diverse components. Teacher competencies that have been identified include subject knowledge, teaching methodologies, knowledge of the curriculum, ability to manage classrooms, and assessment of learners (Jacobs, Vakalisa, & Gawe, 2011, p. 22). The multi-grade classroom is labour-intensive and requires more planning, collaboration, and professional development than the conventional graded classroom (Joubert, 2007; Juvane & Joubert, 2010; Little, 2001; Vithanapathirana, 2010). Teachers in multi-grade schools are confronted with significant challenges as they have to teach two or more age groups simultaneously and possibly more than one curriculum subject.

Grossman and Richert (1988, p. 54) define teacher knowledge as a body of professional knowledge that encompasses both knowledge of general pedagogical principles and skills and knowledge of the subject matter to be taught. This definition does not take into account the "practical knowledge" that is defined by the different contexts that teachers experience and that results from implementing these other types of knowledge. Loughran (2010, p. 41) reports Fenstermacher's description of teachers' practical knowledge as ways of knowing that are derived from their experiences of classroom teaching. The teacher knowledge they require is not qualitatively different from any other teacher's knowledge in these respects mentioned (subject and curriculum knowledge, methodologies, management, assessment) but the implementation of their knowledge is different because of their different context.

Borich (2000, p. 113) suggests that teachers possess a unique kind of knowledge and refers to that knowledge as "tacit knowledge" or "personal knowledge". It is often 'felt' rather than articulated and can therefore be difficult to extract from the minds of individuals. Borich adds that such tacit knowledge comes from experience and not through reading (although reading can influence tacit knowledge). He further adds that through everyday experiences, such as observation, experience in schools, lesson planning, and teaching, one compiles tacit knowledge that can guide one's actions as effectively as knowledge from texts and formal instruction.

The above discussion shows that most writers believe that teacher knowledge is dynamic and will vary according to different teaching contexts. In this paper we adopt the definition of teacher knowledge as advocated by Grimmer and MacKinnon (1992, p. 438, cited in Loughran, 2010, p. 45), namely, teacher knowledge is craft knowledge based on principles that teachers conceptualise in making tacit knowledge more explicit. Our aim in

this study was to identify a professional knowledge base specific to the multi-grade teaching context by asking teachers to articulate their tacit knowledge.

## METHODOLOGY

A simple case study method was used with multiple sites (Bishop, 2010). Data were gathered from both observation and interview. Teacher perceptions were identified through interview, and researcher perceptions through classroom observations and discussion. The interviews were carried out after the observation, to enable exploration and discussion of aspects observed during the teaching. A total of 9 teachers participated (7 Teaching Principals and 2 teachers).

The process of ‘shadowing’ teachers (Ts) or teaching principals (TPs), observing then discussing all the aspects of their daily work, allows a focus on aspects of the teacher’s work that might not otherwise be identified at interview. ‘Shadowing’ is an emerging methodology “developed in response to gaps in the literature and research responses” (Noone & Graham, 2015). It helps to uncover aspects of teachers’ tacit knowledge (Polanyi, 2002 [1958]) and “knowledge-in-action” (Schön, 1983) by allowing a researcher to “observe intimately the everyday life of the insiders” (Baker, 2006, p. 174).

A semi-structured format was used for interviews with the teachers, with additional questions in each interview related to specific aspects of the observations. Questions were designed to explore teacher perceptions of the challenges of multi-grade teaching, what the teachers liked and didn’t like about multi-grade teaching, the teaching and management strategies they used, their access to resources, their preparation for multi-grade teaching and the availability of support. Both the interview transcripts and the notes made during observations were analysed for themes and key words. Checking of the transcripts and of our interpretations of our observations helped to ensure trustworthiness of the data and give confidence in the credibility of the results (Lincoln & Guba, 1985).

## ETHICAL ISSUES

Participants were informed that their participation in the research was voluntary and that they could withdraw from the study at any time. Furthermore, participants were informed that audio recording of the interview was done to ensure accurate recall of the information provided. Participants were also informed that they would not be identified by name in any publication of the results. As a result, all names have been replaced by pseudonyms. Written consent was obtained from all participants, as required by the State Education Research Application Process (SERAP). In addition, the university where the researchers were conducting their research granted ethical clearance for the study.

## FINDINGS AND DISCUSSION

In this paper, we report the findings in terms of teachers’ knowledge related to their classroom practice and the ways in which they coped with the challenge of teaching children in different grades with greatly varied learning needs. The participating teachers were experienced primary-school teachers but their experience of *multi-grade* teaching varied from a few years to more than 30 years. Differences in their approach to teaching a multi-grade class varied because of the individual context of their school, such as the number of children in each grade, as well as their experience and personal beliefs about teaching and learning. One teacher succinctly summarised a common underlying aspect of all the teachers’ approaches: *the main thing that is needed is a learning culture [Kate, TP6]*.

In this paper we concentrate on seven common aspects of this learning culture that we identified as distinct parts of the teachers’ professional knowledge base: learner grouping, organisation and routines, curriculum mapping, differentiating the curriculum, multi-level assessment, planning, and time management. All teachers in this study used these strategies in some way, and many identified strong links between the strategies. For example, relevant group learning might mean identifying similarities in the curriculum of the different grades (curriculum mapping) so students in different grades can work together on a common activity (learner grouping). Although the activity is common, the teacher’s assessment of it might be different, with different expectations for different students (multi-level assessment). Alternatively, different groups might work on different activities (differentiating the curriculum), such as ability groups in mathematics. For successful learning in groups, children need to be trained in particular routines and need to learn to become independent and self-directed learners. When routines are established, classroom organisation is more efficient and time pressures are reduced. Implementing all these strategies requires careful planning, and planning was seen by all teachers as the ‘glue’ that holds the other strategies together.

### **LEARNER GROUPING**

“Frequent and flexible grouping” is identified in the literature (Cornish, 2006; Hoffman, 2002) as an essential aspect of successful mixed-grade teaching. All the teachers were flexible in their use of groups, using individual (group of 1), pairs (group of 2), grade group (all the children in a particular grade), cross-grade group (older children working with younger children), ability group (within-grade or cross-grade), and whole-class group. As Kate expressed it: *I had to quickly work out, one shoe can't fit every child, so I had to get group work happening [Kate, TP6].*

Genuine cooperative or collaborative learning occurs when learners are grouped together and given a common learning goal to be demonstrated by a group product. This type of learning with and from others has a strong record as a way of encouraging learning (Jacobs et al., 2011; Johnson & Johnson, 1994; Marzano, Pickering, & Pollock, 2001). Teachers in these multi-grade contexts recognised that the purpose of the learning should determine the structure of the grouping (Cornish, 2006, p. 34) and they therefore selected different types of grouping for different purposes, including both management and learning purposes: *I use a lot of group work in terms of the way in which I operate the classroom. [I use] grade groups, but also ability groups depending on where the children are sitting on the learning continuum [Adrian, TP1].* If, for example, the aim is to consolidate a particular skill in mathematics, then ability grouping will be suitable while whole-class grouping helps with classroom management and time pressure. Individual and small groups help children take more responsibility for their own learning, encouraging them to become independent learners: *it's about independent learning, getting the kids, from Kinder really, so that they can do work independently [Diana, TP5].*

All the teachers used whole-class grouping where possible, and some used it for the majority of the day. Lily described how her teaching strategy had evolved over 11 years of teaching K–2 multi-grade, from teaching children separately in grade groups to teaching them all together: *I have an approach where I provide the same activity. My expectation is what changes, that to me over the time I've been here has had the most success [Lily, T1].* Nelson concurred: *You just teach a group of children and like any group of children you look at the diversity within that group, be that diversity cultural or age, learning difficulties, gifted and talented, all the components that make up a classroom and then you look at that diversity and you teach that way ... with different expectations [Nelson, TP7].*

A common approach was to have a joint introduction and conclusion to a lesson, while in-between children sometimes worked on the same activity and sometimes on different activities: *I tend to start with the whole group with me on the floor ... [After the introduction, some groups move off to do their activities.] I tend to keep one group with me on the floor at a time. ... New concept for them, they stay with me on the floor [Lily, T1].*

Teachers mentioned a range of subjects as appropriate for whole-class teaching:

*I use whole-class grouping for a lot of our creative activities in terms of arts and science. ... parts of our English I do together as a whole group especially for looking at language conventions or grammar and punctuation-type activities and certainly writing as well [Adrian, TP1].*

*You can teach them [literacy] as a whole class so the strategies are the same, so you've got predicting, you've got monitoring, you've got summarising ... with our maths, we do a short sharp focus at the beginning of our maths lessons and that's basically to the whole class, and that's to reinforce whole-number combinations [Annabelle, TP4].*

*For the other Key Learning Areas [apart from Maths], it's whole class [Barry, TP2].*

### **ORGANISATION AND ROUTINES**

Putting students into groups for learning activities needs a lot of organisation and planning and works much more successfully when the students are taught routines for moving around the room, gathering resources, working together, helping each other, and tidying up. All teachers emphasised the necessity of children in a multi-grade class learning to be responsible and independent so that (1) they were not completely reliant on the teacher, and (2) they did not spend time waiting for the teacher but were able to use every minute of the day learning.

Routines were thus seen as essential and time spent training children to learn particular routines was seen as time regained later. Kate described how she used a ‘visual map’ to show students what they had to do now and what they needed to do after they had completed their first activity. A circle divided into quadrants was used and each student’s name was placed in one quadrant. All students in that quadrant then worked on the same activity: *They had name tags so the kids needed to learn to read their names, so their names went into this quadrant thing like a circle: “you are doing this, this group is doing that, you're doing that, and you're doing that”. When you've finished it had something coming off each one which showed them where to go. So, once we got that into our*

*head that we don't just sit there twiddling our thumbs, playing up, it's smooth sailing, but that all comes down to experience, classroom management, rules, routines [Kate, TP6].*

Lily described the way older students helped the younger students to learn the routines, including those related to behaviour: *we quite often just sit back as the educators and watch Kindergarten and Year 1 and Year 2 show new people what to do [Lily, T1].*

### **CURRICULUM MAPPING**

For students to be grouped for learning, including whole-class grouping, teachers must find topics with enough similarities that they can be taught to the whole class together. Teachers therefore need to engage in curriculum mapping to discover broad areas of similarity or topics that are reintroduced and extended via the spiral curriculum during the years of primary schooling: *I would have the same unit — if we were doing angles, we all did angles that week. The only way I could humanly possibly teach properly, to get my head around it, was to have a theme for the week and we stuck with it [Barry, TP2]; Just about everything that I do across all KLAs we would have the same theme or be studying the same topic [Diana, TP5]; if I'm doing a maths concept I can actually bring it down — you may not have seen that today but I can bring it down to Kinder level and extend it higher ... You only saw a snapshot but we do that quite a lot so I think that is an experience thing, to be able to teach across the levels [Sheree, TP3].*

Identifying topics that can be taught concurrently to different grades requires knowledge of the curriculum of all the grades. The process is not always easy or straightforward: *I couldn't do it, I couldn't get it into my head: "How am I going to achieve those outcomes and be sure that I'm preparing for the next part of the curriculum?" [Kate, TP6].*

With experience, however, a teacher learns to recognise similarities in the concepts being taught and is able to plan meaningful learning activities that can be easily managed: *I am able to then program so that we are doing the same concepts each day and then the next week we're changing it to get through the curriculum. That allows me to make sure I'm meeting the needs of the students plus the curriculum has been taught. ... Maths we do have to have the three different activities. They are all linked. So, I'll teach subtraction on the same day but you have your three different activities [Lily, T1].*

An advantage in multi-grade classrooms where students are taught together is the opportunities provided for consolidation and revision: *I do a lot of revision so I have them all together for that revision ... if you've got some very bright kids, you are really extending those because they are exposed to those concepts at a higher order but ... the kids that are up in another grade that might need revision, you're revising with the Kinders and they'll pick that up as well. So you kind of layer it [Sheree, TP3].* With a whole-class introduction to a lesson when a new topic or concept is being introduced to the younger students, older students get the review they need before the teacher goes on to extend their learning: *I think [repetition] is a wonderful advantage [of multi-grade]. We don't get bogged down in that scope and sequence all the time. Obviously there are things that we have to move on to, but ... we can revisit a lot of our work very, very regularly [Adrian, TP1].*

Another advantage in a multi-grade class is that the younger students overhear some lessons given to the older students. So when it is their turn to learn that content, they have already had an introduction to the topic: *They've got one ear on everything that's happening and so they are way ahead of you when you go to teach something new and they go, "no, I know that". So you can actually move your little learning line along and not be locked into the year [grade] thing, you can teach exactly where they are up to [Kate, TP6].*

Curriculum mapping and group learning also provide opportunities for peer tutoring, which is beneficial both to the explainer and the person receiving the explanation (Topping, 2005): *if you can teach somebody else or help them out you obviously understand what you've been asked to do [Diana, TP5].* Much peer tutoring happens informally, as children are working together, but it can also be deliberately arranged: *I formally prepared — I made sure all the materials were appropriate and wouldn't bring about any frustrations [Nelson, TP7].*

### **DIFFERENTIATING THE CURRICULUM**

When any class of students is learning together but particularly in a multi-grade class, there are times when a teacher needs to plan different activities for different groups of students. Curriculum differentiation refers to the mediation of the curriculum at an instructional, content and material level to accommodate learner diversity (Department of Education, 2002). Different students have different learning needs that cannot be ignored in a class where the ages range up to a seven-year difference and sometimes more.

Teachers who practise differentiation “accept and act on the premise that they must be ready to engage students in instruction through different approaches to learning, by appealing to a range of interests, and by using varied rates of instruction along with varied degrees of complexity and differing support systems” (Tomlinson, 2014, p. 2): *you individualise the programs so you differentiate the curriculum and you also are doing learning adjustments [Annabelle, TP4]; Of course we still had our year groups but at the same time, when you approach your teaching, you individualise the teaching. Forget about what year they’re in, you individualise for each child [Barry, TP2]; I write notes every night so the questions that I’ll often target to certain students that I know didn’t do that yesterday, or need to do it so I am always targeting the students because I’m well aware of what they know and what they don’t know [Sheree, TP3].*

While cooperative learning can be difficult to implement in a very small class because of a lack of critical mass, curriculum differentiation can be easy to implement either through advance planning or ‘on the spot’ reacting: *When you’ve only got a small group of kids, it’s so easy to be able to achieve that because you are walking around and you’re hearing a discussion and you’re seeing them struggle or you’re seeing them look [puzzled]. You can ask, “what do you need?” [Kate, TP6].*

The teachers in this study felt that advance planning of different activities is necessary in a sequential subject such as mathematics in order to give students activities relevant to their current level of learning. These teachers therefore differentiated the mathematics curriculum by planning, for each maths lesson, three maths activities at different levels of difficulty. Different activities are also relevant for curriculum differentiation in a non-sequential subject such as social science. In this case, the activities might not be at different levels of difficulty but rather they might allow students to demonstrate their learning in different ways: *So that was easy in [social science] because we followed that time-honoured “who, what, when, where” ... And that gave them something to hang it on and then I could, you know, set up a mock discussion or I could put props out and I could have a little play act [Kate, TP6].*

### **MULTI-LEVEL ASSESSMENT**

As indicated above, these multi-grade teachers often taught the whole class together but had different expectations for each student. In other words, they engaged in multi-level assessment of the learning activity, against the syllabus outcomes for the different grades: *there was a separation there so we could see how they were measuring up to the so-called grade [Nelson, TP7].* At the planning stage, a multi-grade teacher maps the relevant grade outcomes to the learning activity. After the activity, students are then assessed against the different outcomes.

Lily described how she began every lesson with the students together on the floor. When students felt confident to complete whatever activity had been planned for them, they moved to their desks while Lily stayed on the floor to provide further help to those who felt they needed it. This “peel off” strategy (Carleton, 2006) is another successful routine in multi-grade classes. At the same time as helping the classroom operate efficiently, it allows a teacher to assess the learning needs of the students. If a number of different activities have been prepared, a teacher observes the one that particular students feel confident to attempt. This type of assessment is an assessment of learning needs rather than an assessment of learning *per se*. It is also an example of self-assessment, of involving students in taking responsibility for their own learning, a trait that Kate [TP6] stressed was “vital”.

When students from several grades complete a common activity they need to be assessed against the outcomes relevant to their stage of learning. Lily described above how with this approach her expectations change for each student. The strategy has been described as “same group, different outcomes” (Ball, 2000) and differs from the strategy of dividing students into different groups to do different activities, as in maths. Both strategies, however, require multi-level assessment. In the first case, the activity is common and assessment occurs against the relevant grade outcomes: *For instance when we are doing a piece of writing related to a book, the Year 4 students might be expected to focus more on character and plot and using more descriptive words than the students in Year 1 who are being asked to do a recount [Diana, TP5].* In the second case of “different groups, different activities”, students are also assessed against different outcomes. By contrast, multi-level assessment can be implemented by assessing students according to their level of achievement of the outcome (e.g., emerging, developing, achieved).

### **PLANNING**

Planning was emphasised by all teachers as essential, time-consuming and more important than the actual teaching: *Lots of time [planning]. ... You get that right and kids are learning [Barry, TP2].* Teachers’ planning involved planning for relevant learning experiences but also for effective classroom organisation: *So with your*

*teaching, at the beginning of the year you spend a lot of time setting up your organisation in your classroom, and if you can do that, I think that makes your day flow a lot better. So your planning and your organisation are important [Annabelle, TP4].*

The study also showed that multi-grade teachers plan in advance to ensure that teaching and learning are not interrupted. Without planning, a teacher will not complete the lessons and cover the required curriculum: *You've got to work out what's doable for you [Diana, TP5].* Teachers also plan their lessons to ensure that learners are engaged and that the learning activities are relevant to their stage of learning: *If you don't understand how that curriculum unpacks, you can't guide them in their progress [Kate, TP6].* Jennifer describes her multi-level planning: *[When] I teach a topic, ... I say, Year 3 is core, Year 4 is when they advance to that, and then there's the extension on top of that. So, we'll often have the Year 6 [work] photocopied for Year 5 if they're able to achieve that [Jennifer, T2].*

It was noted during our observations that the teachers have lists of things to be done every day for different grades and they are placed where all learners can see them. Learners take responsibility for their own learning and will only consult the teacher if they are not sure about something. When a teacher has to divide his or her time between the different grades, students need to know what the teacher has planned and not spend time waiting for directions about what to do. Learners will do the first task and then proceed to another task. We observed that teachers have daily activities on the wall so that learners can know what needs to be done next. Kate's 'quadrant' strategy was described above. She explained why she feels it is important for the students to know how to proceed without her: *I had to carefully structure it so the activities were known to them and they were easily able to progress. They knew there was a start and a finish and then they could go on. Otherwise, they'd go over to the play corner and get the dolls out and do whatever and not actually have that idea of finishing anything and, you know, putting it back in its right place, all that sort of training [Kate, TP6].*

All teachers described the importance of planning and teaching routines in order to train learners to become independent and take responsibility for their own learning. Planning routines is important, as is teaching them to the children. The training begins in Kindergarten, and is then reinforced every year after that: *if I can provide the support and build that independence in kindergarten, by the time they are in Year 1, my next kindies then have my time devoted to them [Lily, T1]; usually if you have the same students, by the end of three years they're working really, really well on their own [Sheree, TP3].*

Curriculum mapping across the whole school allows many topics to be taught to the whole class rather than separately to the different grades. With many topics it does not matter in which order they are studied. Many topics in social studies or science, for example, can be arranged in a three-year cycle for a class with three grades. The curriculum rotates so that by the time a student leaves the class, s/he has studied all the topics: *[I had a] 4-year scope and sequence. Because you've got content you need to cover in Science and [Social Studies], I would teach those as a whole class and over the four years, the kids were exposed to every single thing that they needed to be exposed to and they were taught [Barry, TP2].* This strategy of curriculum rotation needs to be carefully planned across the whole school but the rewards are reaped when a teacher only has to prepare one lot of resources and teach one topic to the whole class.

The teachers recognised the role that experience plays in planning for a multi-grade class: *Once you become aware of how it can be done, I think that becomes easier and the more practice that you do at it, you become better at it [Adrian, TP1]; A lot on planning, a lot on planning but the longer you taught, the less time [it took]. Experience was a great help [Nelson, TP7].*

Another aspect of planning mentioned by the teachers was the use of parents to help with their children's learning: *Parents need to be able to take over the reins as well and be a partner in education and coach their kids or give their kids a little bit more direction and just a little bit of support [Kate, TP6].* Parental input was also valued because of its effects on improving relationships: *We encourage parental involvement so that that positive relationship is always there [Lily, T1].* When teachers are supported by parents, that will make them feel closer to the parents and thus enhance their relationship. Partnerships between schools and parents will ensure that parents know that the school appreciates and values their talents and their contribution to the school.

There are many reasons why multi-grade teachers should be recognised for the job they do and supported with resources to help them reduce the enormous amount of time they need to spend planning: *People who have resources, have experience, they're not readily available to you [in an isolated context]. ... You can't teach well if you've spent all night programming. It's impossible [Kate, TP6].* Differentiated lessons would be helpful for any teacher. Kate [TP6] commented that she taught her single-grade classes the same way that she taught her

multi-grade classes, while Jennifer expressed a common sentiment: *I'd probably add there that every class is multi-stage anyway [in terms of students' learning needs] [Jennifer, T2].* If Education Departments are looking to improve schooling and provide quality education, perhaps they should start by looking at the professional knowledge base of multi-grade teachers: *You know, when you work in a small school and a multi-grade class, you have to know how to teach [Barry, TP2].*

### **TIME MANAGEMENT**

With multiple grades to teach and multiple syllabus documents to implement, time management will also be an issue for multi-grade teachers. This simple fact explains why the teachers try to teach the whole class as much as possible while planning for multi-level assessment and differentiated outcomes. Routines were recognised as essential for translating the planning into classroom practice: *I would put them all together, "this is what we are doing today" and try and build on those routines. ... Very structured, very structured and when they'd finished they knew where they were going next [Kate, TP6].*

Annabelle [TP4] emphasised that time spent at the beginning of the year is repaid later, thus helping with time management: *in the first two weeks you will plan a whole lot of things but you'll keep going back over things so you won't get as much done but you're better off to spend that time doing that, at the beginning of the year.*

In spite of careful planning, teachers recognised that time management remains an issue:

*Getting around to every student is a challenge. ... We can become a little bit time deficient because we keep moving on to cover those key learning concepts and outcomes ... and because you've got that extensive range in the classroom then maybe each student doesn't quite get that time that they possibly should get with you ... that's probably more of a teacher time management problem than anything else [Adrian, TP1].*

*We can't do everything in the time [Kate, TP6].*

Jennifer described her routine for handling some of these time management issues: *We have children that are age Year 6 but working at a Year 3 level and we say, "alright, all of you start here [on the floor], stand up when you know what's happening" and they can move back, like a line. I have a big focus on our work on the floor. So, I say to the kids ... "if you don't feel confident, sit on the floor with me and we'll work through it. When you go to your desk, that's telling me that you feel confident enough to work at this independently" [Jennifer, T2].*

### **CONCLUSION**

In their lessons, the teachers in this study demonstrated the importance of a social-constructivist learning environment and Shulman's different types of teacher knowledge. Their curriculum knowledge, content knowledge, knowledge of learners, knowledge of educational context, knowledge of educational ends, pedagogical knowledge and pedagogical content knowledge were all evident in their differentiated lessons, their positive relationships with their students, and their classroom routines. In our discussions after the lesson observations, the teachers were able to articulate aspects of their experience and practice that allowed us to identify seven inter-related aspects of the professional knowledge base required for successful multi-grade teaching: grouping students for learning, organisation and routines, curriculum mapping, differentiating the curriculum, multi-level assessment, planning, and time management.

A resource for multi-grade teachers published over fifteen years ago (Vincent, 1999) identified six aspects of successful multi-grade teaching: (1) classroom organisation (of instructional resources and the physical environment); (2) classroom management and discipline (having clear expectations and classroom routines); (3) instructional organisation, curriculum, and evaluation (matching instruction to the needs of students); (4) instructional delivery and grouping; (5) self-directed learning (developing independent learners); and (6) planning and using peer tutoring. The multi-grade teachers in our study confirmed the importance of these aspects of a professional knowledge base for successful multi-grade teaching. Effective time management, an extra aspect identified in our study, underlies the six points listed above. In addition, our teachers gave more emphasis to the importance of planning and were more specific about multi-level assessment.

The conclusion of one teacher quoted above, that the provision of quality education relies on looking at the professional knowledge base of multi-grade teachers, is advice that cannot be ignored in the desire to improve the quality of teaching throughout the world in pursuit of the Sustainable Development Goal of Quality Education.



## REFERENCES

- Baker, L. M. (2006). Observation: A complex research method. *Library Trends*, 55(1), 171-189.
- Ball, T. (2000). How are children taught in multiage groups? *Free to Learn* (Journal of the MultiAge Association of Queensland), 6(1), 4-5.
- Berry, C. (2010). Multi-grade Teaching. Discussion Document. Retrieved 12 November 2010 from: <<http://www.ioe.ac.uk>>
- Bishop, P. (2010). Multisite case study. In A. J. Mills, G. Durepos & E. Wiebe (Eds.), *Encyclopedia of case study research* (pp. 588-592). Thousand Oaks, CA: Sage.
- Borich, G. D. (2000). *Effective teaching methods* (4th ed.). Upper Saddle River, NJ: Prentice Hall.
- Buitink, J. (2009). What and how do students teachers learn during school-based teacher education. *Teaching and Teacher Education*, 25(1), 118-127. doi: 10.1016/j.tate.2008.07.009
- Calderhead, J. (1991). The nature and growth of knowledge in student teaching. *Teaching and Teacher Education*, 7(5/6), 531-535.
- Carleton, P. (2006). The 'Peel Off' strategy: A necessary strategy for all teachers of multiage. *MultiAge Association of Queensland Newsletter* (1), 1-2.
- Cornish, L. (2006). Multi-age Strategies and Multi-grade Classes. In L. Cornish (Ed.), *Reaching EFA through multi-grade teaching: Issues, contexts and practices* (pp. 27-48). Armidale: Kardoorair Press.
- Cornish, L. (2010). Multi-age classes: What's in a name? *Journal of Multiage Education*, 4(2), 7-10.
- Department of Education. (2002). *Curriculum 2005: Assessment Guidelines for Inclusion*. Pretoria, South Africa: Department of Education.
- du Plessis, A. (2014). Voices of despair: Challenges for multigrade teachers in a rural district in South Africa. *Educational Research for Social Change (ERSC)*, 3(1), 20-36.
- Grossman, P. L., & Richert, A. E. (1988). Unacknowledged knowledge growth: A re-examination of the effects of teacher education. *Teaching and Teacher Education*, 4(1), 53-62.
- Hoffman, J. (2002). Flexible Grouping Strategies in the Multiage Classroom. *Theory into Practice*, 41(1), 47-60.
- Hussain, R. (2006). Multi-grade teaching and action research: Improving practices in Northern Areas of Pakistan. In L. Cornish (Ed.), *Reaching EFA through multi-grade teaching: Issues, contexts and practices* (pp. 103-124). Armidale: Kardoorair Press.
- Jacobs, M., Vakalisa, N. C. G., & Gawe, N. (Eds.). (2011). *Teaching-learning dynamics* (4th ed.). Cape Town, South Africa: Heinemann/Pearson Education.
- Johnson, D. W., & Johnson, R. T. (1994). *Learning together and alone: Cooperative, competitive, and individualistic learning* (4th ed.). Boston: Allyn & Bacon.
- Joubert, J. (2007). Adapted/Adjusted curriculum for multigraded teaching in Africa: A real solution? Online. Retrieved January, 2014 from: <http://multigrade.ioe.ac.uk/bibliography/annotated%20bibliography%20H-M.doc>.
- Juvane, V. (2005). Redefining the role of multi-grade teaching. Working document prepared for the Ministerial Seminar on Education for Rural People in Africa: Policy Lessons, Options and Priorities. Addis Ababa, Ethiopia, 7-9 September. ADEA Working Group on the Teaching Profession.
- Juvane, V., & Joubert, J. (2010). South African Multi-grade Education Conference. Post Conference Report, Lemoenskloof Conference Centre, Paarl, South Africa.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.
- Little, A. (2001). Multigrade teaching: Towards an international research and policy agenda. *International Journal of Educational Development*, 21(6): 481-497.
- Little, A. (2005). Learning and teaching in multigrade settings. Paper prepared for the UNESCO 2005 EFA Monitoring Report. Online. UK. Retrieved March 2014 from: [www.skoleplassen.hisf.no/Rapportar/LearningandTeachinginMultigrade](http://www.skoleplassen.hisf.no/Rapportar/LearningandTeachinginMultigrade).
- Loughran, J. (2010). *What expert teachers do: Enhancing professional knowledge for classroom practice*. Sydney: Allen & Unwin.
- Marzano, R. J., Pickering, D. J., & Pollock, J. E. (2001). *Classroom Instruction that Works: Research-based strategies for increasing student achievement*. Alexandria, VA: Association of Supervision and Curriculum Development (ASCD).
- Mulryan-Kyne, C. (2005). Teaching and Learning in multi-grade classrooms: More questions than answers. *Oideas*, 51, 85-95.
- Noone, G., & Graham, L. (2015). Methodologies: Exploring the intimate. In L. Graham & J. Miller (Eds.), *Bush Tracks: The opportunities and challenges of rural teaching and leadership* (pp. 25-40). Rotterdam: Sense Publishers.
- Polanyi, M. (2002 [1958]). *Personal knowledge: Towards a post-critical philosophy*. London: Routledge.
- Pridmore, P. (2006). Education For All: The paradox of multi-grade education. In L. Cornish (Ed.), *Reaching EFA through multi-grade teaching: Issues, contexts and practices* (pp. 49-70). Armidale: Kardoorair Press.

- Ramrathan, L., & Mzimela, J. (2016). Teaching reading in a multi-grade class: Teachers adoptive skills and teacher agency in teaching across grade R and grade 1. *South African Journal of Childhood Education*, 6(2),
- Schön, D. A. (1983). *The Reflective Practitioner: How professionals think in action*. New York: Basic Books.
- Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, 15(2), 4-14.
- Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review*, 57(1), 1-22.
- Tomlinson, C. A. (2014). *The differentiated classroom: Responding to the needs of all learners* (2nd ed.). Alexandria, VA: ASCD.
- Topping, K. J. (2005). Trends in Peer Learning. *Educational Psychology*, 25(6), 631-645.
- UNESCO, (2015). *Practical tips for teaching multigrade classes*. Bangkok: UNESCO
- Veenman, S. (1995). Cognitive and Noncognitive Effects of Multigrade and Multi-age Classes: A Best-Evidence Synthesis. *Review of Educational Research*, 65(4), 319-381.
- Vincent, S. (Ed.). (1999). *The Multigrade Classroom; A Resource for Small, Rural Schools*. Portland, OR: Northwest Regional Educational Laboratory.
- Vithanapathirana MV. 2010. Multigrade teaching innovations in Sri Lanka and challenges of scaling-up. Unpublished paper presented at the Southern African Conference for Multigrade Education, Paarl, South Africa, 22 to 24 March.
- Vygotsky, L.S. (1978). *Mind in Society; The Development of Higher Psychological Processes*, edited by M.Cole, V. John-Steiner, S. Scribner and E. Souberman. Cambridge, MA: Harvard University Press.

# SCHOOL PRINCIPALS AND THE DILEMMA OF TEACHER ECONOMIC INCENTIVES: EVIDENCE FROM CHILE

Felipe ARAVENA

Pontificia Universidad Católica de Valparaíso.

felipe.aravena@pucv.cl

Gene HALL

University of Nevada, Las Vegas College of Education.

gene.hall@unlv.edu

Marta QUIROGA

Pontificia Universidad Católica de Valparaíso.

marta.quiroga@pucv.cl

## ABSTRACT

A considerable amount of national and international evidence indicates that leadership and management teams, and especially school principals, can generate better teaching conditions. Thus, administrators have created economic incentive policies to improve, stimulate, and motivate teaching staff. Hence, the purpose of this study is to analyze three economic incentive policies designed by school leadership and management teams within three private- subsidized schools in Chile. The study implemented a qualitative methodology of case studies compared through the analysis of 6 in-depth interviews. The results show that management teams do not design plans but rather economic incentive policies in a collaborative way dependent on organizational goals and deficiencies. This study contributes to the understanding of economic incentives from the perspective of those who design and make decisions. This issue has not been addressed enough in the national and international literature.

**Keywords:** Teacher performance, Economic incentives, Educational leadership, Data decision-making.

## 1. INTRODUCTION

Education is a key issue for the socio-economic development of countries. Quality of schools is an element that concerns governments, and for this it is necessary to tackle multiple factors of the educational system. However, teachers' practices continue to be a primary factor that has a direct impact on the quality of student learning which is not unknown to governments (Darling-Hammond, 2010; Van den Berg, 2002). Likewise, the motivation, commitment, and abilities that teachers develop through a reflective practice are key to improving and changing the results of student learnings (Elmore, 2000; Schon, 1987). Thus, teachers' behavior emerges as a key factor that has a high impact on the quality of education and, therefore, it becomes necessary that governments allocate resources to this matter.

School leadership is the second key factor affecting the quality of student learning outcomes (Brock and Grady, 2012; Bush, 2015; Elmore, 2000; Hargreaves and Fink, 2006). Leadership means influencing and mobilizing others to reach individual and collective achievements, and this concept -as both a process and a practice- has an indirect impact on student learning (Hargreaves and Shirley, 2012; Leithwood, Harris and Hopkins, 2008). In practice, it implies that school principals and their teams must generate the necessary and specific conditions for teachers to develop their teaching practices in a context that fosters the learning process (Bush, 2015; Gronn, 2000; Harris, 2008; Harris, 2009). Both teachers and school principals play an essential role in school quality improvement, especially in contexts of socio-cultural deprivation (Bellei, Muñoz, Pérez and Raczynski, 2004).

Working as a team is a necessity and a challenge within schools. Both teachers and school principals need to exchange, dialogue, and experiment with new forms of learning that encourages a collaborative culture (Ávalos, Cavada, Pardo and Sotomayor, 2010; Darling-Hammond, Meyerson, La Pointe and Orr, 2010; Tubin and Pinyan-Weiss, 2015). For collaborative learning to be effective, it is necessary to carry out individual tasks and responsibilities. Despite the importance of organizational goals, success will be connected to the sum of individual work. In that scenario, the individual performance and the collaborative efforts will be constantly

finding each other. Nowadays, collaborative work as an assumption installed within the Chilean schools (Ávalos, Cavada, Pardo and Sotomayor, 2010).

However, the previous assumption presents a paradoxical situation. On the one hand, public policies keep promoting collaborative work, but on the other hand, teachers and school principals tend to follow a lonely path in the performance of their role (Day and Gu, 2012). Multiplicity of tasks, time management, and the search for improvements configure collaborative work as a time-consuming practice. National and international empirical evidence portrays the best schools are those that manage to build work teams (Leithwood, Harris and Hopkins, 2008; Gronn, 2000; Horn and Marfan, 2012). Consequently, a distance between reality and the desired is originated (Bellei, Muñoz, Pérez and Raczynski, 2004).

Traditionally, the teaching profession has been scarcely valued by society, and even more so in Latin American countries (Fanfani, 2005). This lack of appreciation has been reflected in the working conditions of teachers, specifically in relation to wages (Acuna, 2015; Bellei, Muñoz, Pérez and Raczynski, 2004; Day and Gu, 2012). In the local scenario, several responses have been given to improve the social evaluation of teaching. For example; the improvement of salaries, the incrementation of admission requirements for educational programs, the evaluation of the quality of universities and institutions that teach pedagogies, among other elements. Nevertheless, the neoliberal logic has rendered the economic incentives as a viable alternative to improving the working conditions of the teachers within schools (Mizala and Romaguera, 2002).

In the Chilean context, schools belonging to the public sector have little autonomy to allocate resources for economic incentives to teachers (Mizala and Torche, 2012). Therefore, the empirical evidence on these cases is scarce. On the other hand, in the subsidized and private sector, this is a common practice (Acuña, 2015). Hence, the purpose of this paper is to analyze three economic incentive policies designed by leadership and school management teams within three subsidized schools in Chile. The aim of this study is not to assess the impact of economic incentive policies, but rather to understand the basis of decision-making teams when designing economic incentive plans for their teaching staff. The focus will be on leadership teams as decision makers.

The relevance of this study is that it presents empirical cases which provide specific practices regarding the economic incentive policies within Chilean schools. The aforementioned contributes to the awareness of a topic that has not been sufficiently addressed in the national and international literature. The conclusions and implications of this study may guide public policies at national level in two key aspects: firstly, guide the management teams through the decision-making processes by professional training programs focused on improvements; and secondly, the identification of possible trends and variables that managers consider motivating and engaging for their teaching staff.

## **2. INDIVIDUAL AND GROUP ECONOMIC INCENTIVES**

Economic incentives have been studied from different fields and perspectives. For example, in the business field there is considerable research on the effects of economic incentives on individual and collective performance under production parameters and indicators, while in the educational field the studies, mainly empirical, are somewhat scarce and do not present conclusive results (Lazear, 2003; Tirivayi, Van den Brink and Groot, 2013).

An interesting debate is being held within international literature concerning the way of addressing the economic incentive between individuals and groups (Lavy, 2009). Tirivayi, Van den Brink and Groot (2013) point out that, regardless the incentives modality, researchers have sought evidence on the prediction and effectiveness of the power of incentives to improve both the learning process and professional teacher performance rather than effectiveness and issues that come along with the modality. However, the modality is key for measuring the impact incentives have on schools, reason why it becomes necessary to explore this further.

Springer, Pane, Le, McCaffrey, Burns, Hamilton, and Stecher (2010) conducted an empirical study in Tennessee, United States that involved 297 mathematics teachers in 5th, 6th and 7th grade. All of the teachers received economic incentives for their individual performance. This 3-year study found that generally, incentives do not cause significant changes on standardized test scores within the mathematics area. As a result, it was not possible

to evidence changes in student learning practices and routines or in teachers' professional performances. In contrast, Winters, Ritter, Barnett, and Greene (2007) found that individual incentives, based on a sample of five schools in Arkansas, generated positive effects on scores obtained in standardized tests in mathematics, but not in the case of language. Atkinson, Burgess, Croxson, Gregg, Propper, Slater and Wilson (2009) concluded that, based on 18 schools with a sample pool of 145 teachers receiving individual incentives; math scores increased by approximately 40% in standardized tests. However, the teachers' practices did not change, that is why it is not possible to conclude that individual incentives generate improvements in learning and teaching practices (Atkinson et al, 2009). Moreover, empirical evidence is rather ambiguous, which makes it difficult to use consistent trends (Tirivayi, Van den Brink and Groot, 2013).

Group economic incentives are another issue that has also been studied in the literature. Muralidharan and Sundararaman (2011) carried out an investigation in primary schools in India - including more than 600 teachers- using two control groups. The main research finding was that between 2005 and 2006 the scores obtained by students belonging to the group of teachers who had received group incentives increased by 0.16% of standard deviation when compared to the results of national tests taken in previous years. Similarly, Glewwe, Ilias, and Kremer (2010) found in schools in Kenya a 0.14% standard deviation in scores regarding teachers who did not receive group incentives over a period of 3 years. However, these authors did not find any significant discrepancies between the decrease of work absenteeism, changes in pedagogical practices or in teacher commitment. In sum, the studies concluded that group incentives given to teachers have a higher effect in increasing the results in standardized tests only when compared with individual incentives (Glewwe, Ilias, and Kremer, 2010; Muralidharan and Sundararaman, 2011; Tirivayi, Van Den Brink and Groot, 2013).

The success or failure of individual and group economic incentives mainly depends on the context (Vegas, 2005). Although there are no patterns applicable to all contexts, there is empirical evidence which indicates that group incentives in teachers have more positive effects in the contexts of developing countries than in developed ones (Dixit, 2012; Glewwe, Ilias, and Kremer, 2010). In the Chilean case, a recent study carried out by Acuña (2015) analyzes the teaching culture from a bureaucratic and official perspective with the aim of understanding - from the participants themselves- the implications of the economic incentives in Chilean schools. The main contribution of this study was the identification of main areas that encourage teacher professionalism, despite the fact that teachers themselves did not identify individual economic incentives positively. It is believed this happened since teachers criticized incentives by categorizing them as a way of "compensating" the low salary they receive (Acuña, 2015; Mizala and Romaguera, 2002). As a result, there was resistance and a minor effect on changing pedagogical practices (Acuña, 2015).

### 3. METHODOLOGY

The following study aims to analyze three economic incentive policies designed by school leadership and management teams within three subsidized schools in Chile. For this purpose, a qualitative methodology comprised of comparative case analysis was implemented, which is fundamentally interpretive (Jürgen, 2011). Drew from the methodological design, it is important to recognize the comparison criteria that respond to an interpretive paradigm (Creswell, 2007). These comparison criteria are categories that represent selective categorization units (Eisenhardt and Graebner, 2007). The criteria are: incentive focus, who makes decisions, who can apply to the incentive, and incentive frequency. These four comparative units were examined in a semi-structured interview (Creswell, 2007).

#### 3.1 DATA COLLECTION

In the initial stage three in-depth interviews were conducted with each school principal, and in the second phase, three interviews were conducted with each leadership team, which included a curriculum coordinator (terminology in spanish: jefe de unidad técnica pedagógica), orientator and an pastoral care leader (only in one case, the interview was held with the principal and 2 curriculum coordinators). This methodological decision was taken mainly because in the first instance data was collected in an exploratory manner in order to contextualize the phenomenon, while in the second phase data was gathered with a focus on possible relations between the principals' speech and the leadership teams (Creswell, 2007).

All interviews were recorded, with an average duration of 47 minutes, and then transcribed. Each of the interviews were analyzed according to the categories previously designed. Moreover, as we worked with emerging ideas based on the comparison criteria, the comparison criteria are defined previously and not on the basis of emerging categories in accordance with a pragmatic discourse analysis (Creswell, 2007). The latter was done through an independent manual axial coding, where each researcher independently coded different responses according to the comparison criteria, which were later compared for consensus. Emerging ideas were discarded whenever it was not possible to establish consensus (Creswell, 2007).

#### 4. RESULTS

School leadership involves establishing organizational conditions for teachers and students to learn significantly, improving their practices and performance respectively (Hargreaves and Shirley, 2012). For this purpose, it becomes necessary to make complex and multidimensional decisions frequently. This implies that principals must make decisions, sometimes individually and sometimes with the support and involvement of others. This is because it has been portrayed that the process of collaborative decision-making enhances the likelihood of better decisions than when performed individually which implies distributed leadership (Harris, 2009).

Leadership teams, and specifically school principals, must make decisions involving other actors. The idea is to ensure that decisions impact positively on culture and school performance (Supovitz, and Tognatta, 2013). It comes from the principle that economic incentives are designed with the idea of motivating, engaging and stimulating teachers to achieve better results in students' academic products and a better performance in their own practice.

The cases to be studied are presented in Table 1. The table includes context data about the schools as well as a description of the incentive, and the comparison criteria understood as the focus, who decides the "winners" of the incentive, participants, and incentive frequency.

Table 1. Economic incentives system

	Case A	Case B	Case C
<b>School level</b>	Secondary	Primary and Secondary	Secondary
<b>Enrollment</b>	631	801	433
<b>SIMCE</b>	286	261	255
<b>Teaching staff</b>	36	44	23
<b>Description of economic incentive</b>	It compares the results obtained in the previous year SIMCE <sup>1</sup> with the present year one. If the scores increase, independent of the quantity, the incentive is delivered.	Each teacher department grouped by the subject they teach must decide who obtains the incentive through the use of several criteria defined by themselves. The criteria should be described and presented to the school board through a guideline.	A rubric that includes indicators of professional responsibilities such as attendance, medical leave, administrative permissions, among others.
<b>Focus</b>	Results	Miscellaneous	Teachers' responsibilities
<b>Who decides?</b>	Leadership Team	Teachers	Leadership Team
<b>Who can achieve the incentive?</b>	Teachers who teach on mathematics, language, history, and natural sciences (courses included in SIMCE)	Teaching staff	Teaching staff
<b>Frequency</b>	Annual	Annual	Annual

<sup>1</sup> The SIMCE (In Spanish: *Sistema de Medición de la Calidad de la Educación*) (Education Quality Measurement System) is a battery of national student-testing tests used to measure learnings annually in the main subjects in grades 2nd, 4th, 6th and 10th (language, mathematics, and science, plus foreign a language: English).

Source: Author's elaboration

## 5. DATA ANALYSIS AND DISCUSSION

### 5.1 WHAT IS THE ECONOMIC INCENTIVE?

In the cases described, there are three types of incentives that differ from one another. The first incentive compares the results obtained in the previous year SIMCE with the present year one. If the score increases the incentive is delivered. One principal points out:

*"I always think that only some teachers are able choose. For example, what about teachers of arts and music? We are also following the model that we criticize so much, that math and language are the only important courses, but in a way, the answer was that they receive more pressure than other teachers and they are constantly being evaluated, which is why the incentive is more justified".* School principal, case A.

In this sense, the critical point in the design of this incentive is not directly related to the criterion, ie SIMCE, but rather to who can be creditors of the incentive. Therefore, it is thought to use a compensatory measure for all the work, stress and demands that are covered by the SIMCE teachers. The curriculum coordinator of this school points out:

*"SIMCE teachers work too much, they are always there, they are super motivated. We consider it is fair to reward them. In addition, the other teachers understood it well, they know that stress and everything generated by the SIMCE is taken away by them".*

In the second case, the critical design node lies in the criteria for deciding the incentive creditors. Unlike the first case, a point to be discussed is the possibility of self-evaluation of one's professional performance. That is, the possibility for the incentive to become a moment to develop group conscience and to reflect. This incentive is that each teacher department, grouped by the subject they teach, must decide who should be the incentive holder through the use of criteria previously defined by themselves.

*"We wanted them to decide for themselves who would receive the money. If they would provide the same criteria, if they wanted to get away, or maybe one year it would be someone's turn, and the next year it would be someone else's. We do not mind because in truth what matters is they begin to work as a group, but it could not be anything either, so we finally decided to present a suggestion on the teacher's advice later on how they chose"* Curriculum coordinator, case B.

The incentive criteria defined by each of the departments must be described and presented through a guideline to the school council. This decision was made to hold the teachers themselves responsible for their decisions and because it implies thinking about the decision-making process that involves the participants. Hence, expressed in words of the curriculum coordinator:

*"Because we are too indulgent with them, almost paternalistic, we tell them everything. Here we try to develop more autonomy and a sense of collective work in them, that's why we did not want to evaluate them and give the incentive, but we did"* Curriculum coordinator case B.

The third case does exactly what it is desired to be avoided by the management team of the second case. The management team decides the incentive creditor from a rubric that includes indicators of professional responsibilities such as attendance, medical leave, administrative permissions, among others.

*"There are other instances to evaluate teachers' performance. We observe the classroom, the results of students, etc. We wanted to reward those teachers who did not fail to keep their shirts on."* School principal case C.

In sum, the incentives differ in their design. There is not a single way to create the incentives. However, it has been highlighted that a conflicting point in the design is related to what is going to be "rewarded" and who will participate in the incentive decision-making process.

## 5.2 FOCUS'S INCENTIVE

From the interviews it was possible to categorize incentives obtaining three outcomes. In the first case, supported by the results, it was identified a focus on accountability. In case B, a miscellaneous focus in practical terms does not have clarity regarding the criteria. Therefore, one group of teachers may be result-oriented, another group might focus on personal relationships, and another one on professional responsibilities. Finally, the third case focuses on the teachers' professional responsibilities.

In general, the three cases studied show that the schools' goals are aligned with the incentives. A weakness that must be strengthened is the current focus of goals, that is, on improvement. The incentive is thought to be a strategy and/or support that can help achieving organizational goals proposed at organizational level.

*"Look, here at the school it is very difficult for teachers to work together as a team because in truth the relationships between them are not the best, so we want to improve that through the incentive. We think it can be a good starting point."* Curriculum Coordinator case B.

*"As a school we always want to improve, and SIMCE scores have improved year after year. We wanted to reward that too, so that teachers are more motivated, children learn more, and everything has a positive impact. One thing leads to the other"* School principal case A.

*"One of the goals this year is to reduce absenteeism at work, teachers' irresponsibility, because we have had several absents due to medical leave which impact on the normal development of classes. Sometimes even I have to cover for the them or even send the students home because there are no teachers. It has become a serious problem for us"* Curriculum coordinator case C.

In all three cases it is possible to establish some concerns for the achievement of the proposed goals. Therefore, there is an interesting relationship between institutional goals and economic incentives. It seems that management teams directly connect aspects of organizational improvements with the incentive. Moreover, it is inferred that the expected result is not only to reward teachers but also to rely on an indirect impact on student learning. This implies that the participating leadership teams of this study recognise a relational triangle between incentive, school goals, and student learning outcomes. However, none of the cases mentioned indicates a measure of the impact of incentives based on the achievement of school goals and on the academic performance of students. In practical terms, this points out the lack of mechanisms and/or instruments for gathering information in order to systematize the impact of the incentive. As portrayed in the literature, leadership teams cannot conclude on the impact of economic incentives on their respective organizations (Tiryani, Van den Brink and Groot, 2013). This is key when thinking about incentive design.

A strategic management plan should not only consider the elements of the plan but also elements that allow the evaluation and systematization of the impact of the incentive (Glewwe, Ilias and Kremer, 2010). In this way, the three cases studied designed the incentive without reaching an incentive evaluation stage. In sum, management teams design the incentive without an incentive plan. This conceptual distinction is elemental to improving the practical installation of incentives in schools.

## 5.3 WHO CAN APPLY FOR INCENTIVES?

A key question in incentive design is who can apply for economic incentives (Dixit, 2002). In the three cases studied, only teachers could be creditors. That is, leadership teams consider that the economic incentive is a way of rewarding the teaching staff (Acuña, 2015). Economically, it is necessary to establish incentives so that the teachers are able to be motivated in their work, a belief that directly associates the incentive with teachers' motivation.

*" We think that teachers can be more motivated with the incentive "*. School principal case B.

*"When you have something to work for, specially if it is money, obviously you get more motivated, that is what we have seen"*. Curriculum coordinator case A.



Encouragement and motivation seem to be understood as a cause and effect relationship. In contrast, there is no allusion to a relationship between incentive and a change or improvement in teaching practices. Therefore, it is possible to indicate that leadership teams have a vision focused on the motivational dimension more than on teacher commitment and capacities. The same is connected to the ability of school principals to evaluate the change in teaching practices. It seems that the focus of the incentive is not in the change of pedagogic practices but in a more immediate and short-term effect. That is, the incentive can be categorized more as a motivational stimulus than an actor for change and/or improvement on teachers.

*"We used the incentive because teachers complete thousands of tasks here at the school, we feel it is a way to compensate them for what they do"* Inspector case A

A more conflictive point was found in case A. In this school, only some teachers could apply for receiving the incentive, that is, only teachers of mathematics, language, social sciences and natural sciences. According to the curriculum coordinator this decision was made because:

*"The idea was always for the teachers to receive it, but we decided the ones with SIMCE subjects would be benefited, because in truth we feel that they have more pressure than the others".*

It is possible to notice again that the incentive is seen as a compensatory measure (Acuña, 2015). This option generates divisions among the same members of the management team. For some it is necessary to include others, but for others the incentive is associated with standardized tests, therefore, it is more difficult to include others in this process.

*"So..I do not know, english, physical education, arts, etc. cannot apply because they have no evidence in terms of the SIMCE test. It is true they are harder to include because we do not have these indicators"* Inspector case A.

*"We discussed that point a lot but I think it is fair that way since if they have good SIMCE scores, the entire school improves in terms of more resources, prestige, etc."* School principal case A.

#### 5.4 FRECUENCY

In the three cases studied the frequency of the incentive is annual. In simple terms, the incentive is granted once a year. There are two reasons for sustaining the incentive with annual frequency. The first one is the limitation of resources and the second one is the time it takes to gather evidence to grant the stimuli. Draw from this, the incentive is not incorporated in the daily practices of the leadership teams. It is visualized as an external task that complicates the principal's work and involves additional demands, while not considering time in the multiple tasks that must be performed. Usually, they are visualized as evaluative stages at the end of the school year.

*"It is annual, once a year, What worried us most was that the person would repeat from one year to another, and you know it was repeated. We as a team hesitate to give it again because several things may happen such as people saying the delivery of the incentive is fixed, or someone may say that one person is always the favorite, but in truth that person is a teacher who never fails, then we surprised as a team, we gave an element of surprise (laughs) .... And we gave it back to you, the same teacher, and you know it was good because the same teacher was surprised she said she did not think....they were going to give it again "* School principal case C.

This case portrays a situation that can occur when designing incentives. It is important to consider the effects that could be generated when the same teacher becomes creditor of the incentive. In the case of this school, it is thought that an intelligent decision was made because it gives confidence and validity to the criteria developed by the leadership team. This allowed to legitimize the election and give a clear signal to the other teachers that there are no subjective elements but rather evidences and practices. Thus, the leadership team shows it improves their self-image.

#### 6. CONCLUSIONS AND IMPLICACIONES

The purpose of this study was to analyze three economic incentive policies designed by school leadership teams within three Chilean subsidized schools. There was an attempt to understand what leadership teams are based on

to make decisions when designing economic incentives instead of evaluating the impact of economic incentive policies on the school, teachers and / or students. Hence, this research explores a field not sufficiently documented that can be investigated further.

A first conclusion that underlies the three cases studied is that it was not possible to observe economic incentive plans. It was only possible to demonstrate policies of economic incentives. A plan obeys a structured design thought in a systemic way passing through stages of identification, analysis, systematization and evaluation, among others steps. In the cases studied, the teaching directors designed incentive policies with instruments to formalize the processes. Again, administrative processes are highlighted rather than pedagogical discussions on the impact of economic incentives. The teaching directors should advance in the design of incentive plans with a clear focus on the possibility of evidence changes in the pedagogical practice of teachers and consequently in student learning outcomes.

The focus of incentive design is diverse and dependent on school goals. Some choose to include teachers in the same focus, others to place it in the learning outcomes and in teacher professional responsibilities. Incentive plans need to advance the analysis of the impact on learning outcomes (Dixit, 2002; Glewwe, Ilias and Kremer, 2010; Lavy, 2009). If there are changes in students' results it is necessary to have valid and reliable information so as to establish possible explanatory causes about that change. However, this was not observed in the cases studied.

A key question that school principals ask about incentives is "what for?". From the perspective of the three leadership teams, economic incentives are programmed to increase teacher motivation, improve students' learning, and financially compensate for the teachers' effort and the pressure they are under. Despite this, it was not possible to identify challenging questions by leadership teams on how to know when a plan is well executed. Self-evaluation and monitoring of what is implemented is a pending task for school leadership teams. This becomes a key leadership practice to identify areas for improvement that needs to be addressed in the future (Harris, 2009; Supovitz and Tognatta, 2013).

In the construction of the incentive policies it is visualized that the teams make collaborative-consultative type decisions. This implies that decisions are taken collaboratively within the same leadership team at an internal level where ideas are consulted and raised within this team. However, teachers are not involved in its design. The challenge is to integrate teachers as a key part of the design process. Teachers themselves can open discussion opportunities and critical points on incentive plans as well as impact on their own practices. The idea lies in including the teaching perspective to build a plan with both meaning and experience, so as to create something pertinent and significant for teachers themselves.

Although this study did not investigate the impact on teachers or students based on implementation of economic incentives, it was possible to observe that the school principals and their leadership teams consider that economic incentives are positive stimulus for teachers, and that their main impact is in teacher motivation. However, management teams do not have practical evidence or tools to measure this impact. Consequently, it is necessary to incorporate within the incentive plan instruments that can measure the motivational impact on teachers and on student learning. This opens a new research area that will complement this investigation and other research proposals.

## REFERENCES

- Acuña, F. (2015). Incentivos al trabajo profesional docente y su relación con las políticas de evaluación e incentivo económico individual. *Estudios Pedagógicos*, 49(1), 7-36.
- Anderson, J. (2008). Principals' role and public primary schools' effectiveness in four Latin American cities. *Elementary School Journal*, 109(8), 36-60.
- Atkinson, A., Burgess, S., Croxson, B., Gregg, P., Propper, C., Slater, H., & Wilson, D. (2009). Evaluating the impact of performance-related pay for teachers in England. *Labour Economics*, 16, 251-261.
- Ávalos, B., Cavada, P., Pardo, M. & Sotomayor, C. (2010). La profesión docente: Temas y discusiones en la literatura internacional. *Estudios Pedagógicos*, 36 (1), 235-263.

- Bellei, C., Muñoz, G., Pérez, L. & Raczynski, D. (2004). *¿Quién dijo que no se puede? Escuelas efectivas en sectores de pobreza*. Santiago: UNICEF-MINEDUC.
- Brock, B. and Grady, M. (2012). *The daily practices of successful principals*. California, CA: SAGE.
- Bush, T. (2015). Understanding instructional leadership. *Educational Management, Administration & Leadership*, 43(4), 487-489.
- Creswell, W. (2007). *Qualitative inquiry & research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, CA: SAGE.
- Darling-Hammond, L. (2010). *The flat world and education: How America's commitment to equity will determine our future*. New York: Teachers College Press.
- Darling-Hammond, L., Meyerson, D., La Pointe, M., & Orr, M. T. (2010). *Preparing principals for a changing world: Lessons from effective school leadership programs*. San Francisco: Jossey-Bass.
- Datnow, A. (2005). The sustainability of comprehensive school reform models in changing district and state contexts. *Educational Administration Quarterly*, 41(1), 121.
- Day, C. & Gu, Q. (2012). *Profesores: Vidas nuevas, verdades antiguas. Una influencia decisiva en la vida de los alumnos*. Madrid: Narcea.
- Dixit, A. (2002). Incentives and organizations in the public sector: An interpretative review. *The Journal of Human Resources*, 37, 696-727.
- Eisenhardt, K., & Graebner, M. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, 50, 25 - 32.
- Elmore, R. (2000). *Building a new structure for school leadership*. Washington, DC: Albert Shanker Institute.
- Fanfani, E. (2005). *La condición docente. Análisis comparado de la Argentina, Brasil, Perú y Uruguay*. Buenos Aires, Argentina. Siglo Veintiuno Editores.
- Glewwe, P., Ilias, N., & Kremer, M. (2010). Teacher incentives. *American Economic Journal: Applied Economics*, 2(3), 205-227.
- Gronn, P. (2000). Distributed perspectives: A new architecture for leadership. *Educational Management, Administration & Leadership*, 28(3), 317-338.
- Hargreaves, A., and Fink, D. (2006). *Sustainable leadership*. San Francisco, CA: Jossey-Bass: Education Series.
- Hargreaves, A., & Shirley, D. (2012). *The global fourth way*. Thousand Oaks, CA: Corwin.
- Harris, A. (2009). *Distributed leadership, different perspectives*. London: Springer.
- Horn, A., & Marfan, J. (2010). Relación entre liderazgo educativo y desempeño escolar: Revisión de la investigación en Chile. *Psicoperspectivas*, 9(2), 82-104.
- Jürgen, S. (2011). *Sistema mundial y redes de interrelación: la internacionalización de la educación y el papel de la investigación comparada, en: Internacionalización. Políticas educativas y reflexión pedagógica en un medio global*, ed. por Marcelo Caruso & Heinz-Elmar Tenorth (Buenos Aires: Granica, 2011), 41-106.
- Lavy, V. (2009). Performance pay and teachers' effort, productivity and grading ethics. *American Economic Review*, 99, 1979-2011.
- Lazear, E. (2003). Teacher incentives. *Swedish Economic Policy Review*, 10(2), 179-214.
- Leithwood, K., Harris, A. & Hopkins, D. (2008). Seven strong claims about successful school leadership. *School Leadership and Management*, 28 (1), 27-42.
- Mizala, A. & Romaguera, P. (2002). *Regulación, incentivos y remuneraciones de los profesores en Chile*. Documentos de Trabajo Serie Economía 116. Centro de Economía Aplicada (CEA): Universidad de Chile.
- Mizala, A., & Torche, F. (2012). Bringing the schools back in: the stratification of educational achievement in the Chilean voucher system, *International Journal of Educational Development*, 32, 132-144.
- Muralidharan, K., & Sundararaman, V. (2011). Teacher performance pay: Experimental evidence from India. *Journal of Political Economy*, 119, 39-77.
- Schon, D. (1987). *Educating the reflective practitioner*. San Francisco: Jossey-Bass.
- Springer, M. G., Pane, J. F., Le, V.-N., McCaffrey, D. F., Burns, S. F., Hamilton, L. S., & Stecher, B. (2012). Team pay for performance: Experimental evidence from the Round Rock pilot project on team incentives. *Educational Evaluation and Policy Analysis*, 34, 367-390.
- Supovitz, J. & Tognatta, N. (2013). The impact of distributed leadership on collaborative team decision making. *Leadership and Policy in Schools*, 12(2), 101-121.
- Tirivayi, N., Van den Brink, H. & Groot, W. (2014). Group incentives for teachers and their effects on student learning: a systematic review of theory and evidence. *School Effectiveness and School Improvement*, 25(4), 570-601.

- Tubin, D. & Pinyan-Weiss, M. (2015) Distributing positive leadership. The case of team counseling. *Educational Management, Administration & Leadership*, 43(4), 507-525.
- Van den Berg, R. (2002). Teachers' meanings regarding educational practice. *Review of Educational Research*, 72 (4), 577-625
- Vegas, E. (2005). *Incentives to improve teaching. Lessons from Latin America*. Washington D.C: World Bank.
- Winters, M. A., Ritter, G. W., Barnett, J. H., & Greene, J. P. (2007). An evaluation of teacher performance pay in Arkansas. Retrieved from [http://www.uark.edu/ua/der/Research/performance\\_pay\\_ar.html](http://www.uark.edu/ua/der/Research/performance_pay_ar.html)

# TEACHER MENTAL HEALTH PROMOTION IN CREATING QUALITY TEACHING ENVIRONMENTS IN DYSFUNCTIONAL SECONDARY SCHOOLS

V.M. Mbulaheni  
University of Venda, South Africa

A.P. Kutame  
University of Venda, South Africa

M Mpofo  
University of Venda, South Africa

Visi Muriel Mbulaheni  
P.O. Box 951, Phangami, 0904, South Africa.  
vizirai@webmail.co.za

## ABSTRACT

The aim of this study was to find out challenges in the promotion of the teachers' mental health for them to create an environment that promotes quality teaching and learning in dysfunctional secondary schools in Mutale area in the Vhembe District of Limpopo Province. Quantitative research design was used, collecting data through questionnaires. Purposive sampling procedure was used to select 160 teachers from rural dysfunctional schools. Data were analysed using International Business Machines Corporation Statistical package for Social Sciences (IBM SPSS statistics). Results showed that conditions in the schools were not conducive to promotion of teachers' mental health. Teachers were demotivated resulting in poor performance in school activities including teaching in class. Some teachers even left the profession. Poor performance of teachers rendered the schools dysfunctional. A model was developed in order to enhance the quality of teaching and learning in dysfunctional secondary schools in the Mutale area through promotion of teachers' mental health.

**Keywords:** sustainability, teaching environments, dysfunctional school, secondary schools, teachers' mental health.

## INTRODUCTION

According to Chapter 2 of the Constitution of the Republic of South Africa, No. 108 of (1996), education in South Africa is a constitutional right for every citizen. Hence, South Africa spends more money on education than many other countries (World Bank report, 2014). The Census (2011) specifies that in the South African population, 35% of Blacks/Africans, 32.6% Coloureds, 61.6% of Indians/Asians and 76% White citizens have completed high school education whereas 8.6% of the population aged 20 years and older has not completed any schooling.

The South African education system is characterised by a number of challenges that affect school performance (Monyooe, Tjatji & Mosese, 2014). There is no indication that this downward trend in the schools has been arrested (Westaway, 2015). Some schools have been affected to the point of dysfunctionality (Pretorius, 2014) resulting from issues which include commitment of teachers, the well-being of teachers, teacher's knowledge of subject content, learner and teacher-interaction, use of different teaching approaches and assessments, unstable management conditions, inappropriate or lack of leadership, lack of vision, an unhealthy school climate and culture, and low staff and learner morale (Kutame, Maluleke, Netshandama & Ramakuella, 2014; Pretorius, 2014); high pregnancy rate among learners (Mbulaheni, Kutame, Frances & Maluleke, 2014) and violence amongst learners (Rossouw, 2003). A school may become dysfunctional due to abnormal or impaired functioning, thus, it fails to accomplish the true purpose of teaching and learning for which it was instituted (Pretorius, 2014).

There are reports that Limpopo has the highest number of dysfunctional schools in the country (Mohlala, 2009). Schools are under-staffed, poorly resourced, ineffectively managed and disciplined, and consistently low in academic performance. In Limpopo Province some schools performed much lower in 2012 in Grade 12 than the Provincial 2009 to 2013 target. Similarly, there is a considerable number of schools in Vhembe District which performed lower than the set national standard and categorized as dysfunctional (Kutame et al. 2014).

Teachers and learners in schools that are dysfunctional have to contend with a range of issues which exacerbate the situation in these schools. A lack of learner discipline may seriously hamper the teaching and learning

process, and, if disruptive behaviour prevails, education cannot be successful (Rossouw, 2003; Henry, Knight & Thornberry (2012).

Bloch (2011) states that the situation of dysfunctional secondary schools has been existing for many years and is serious and further indicates that the challenges in dysfunctional schools continued years after the introduction of the post-apartheid system of education. The characteristics of the apartheid policies contributed to the breakdown of the culture of teaching and learning in schools. Lethoko, Heystek and Maree (2001); Pretorius, (2014) also state that, the issue of the absence of culture of learning, teaching and services (COLTS) in South African schools, especially in secondary schools for the previously disadvantaged groups, is a major concern. Saunders (1996); Westaway (2015) aptly refers to this as “a crisis of gargantuan proportions”. Principals of underperforming schools still receive negative feedback as grades fall. The high number of dysfunctional schools in South Africa is an indication that school management and leadership need to be attended to seriously as today’s society has the widespread belief that educational leadership focuses on the contribution of quality leadership to the performance of schools and learners (Bush 2008; Zinate, Seyed, Elham & Hossein, 2016).

The discovery that, some schools continue without textbooks that are crucial for any successful learning process (Veriava, 2013; Nkosi, 2014) provided researchers with a sense that there are major problems in schools that may negatively affect the teachers’ mental health which is critical in their quest for quality of teaching and learning. These reports suggest that teachers in schools that are dysfunctional do not perform optimally while at school.

The Department of Education is intervening in these schools with the aim of improving the situation (Kutame et al., 2014) without focusing on the promotion of the teachers’ mental health. In areas where the department is committed to improving the situation, the promotion of teachers’ mental health is still an area of neglect. The interventions seem to be unsuitable and unsuccessful and, as result these schools continue to be categorized as dysfunctional. The main aim of the study was to develop a teacher mental health promotion model that would improve the quality of the teaching and learning environment in dysfunctional rural based schools.

### **Statement of the problem**

The Department of Basic Education is continuing with turnaround strategies in improving the academic situation in schools from dysfunctionality. However, the effect of such interventions does not seem to have been successful. The intervention strategies do not include promotion of teachers’ mental health thus, leaving teachers poorly motivated. Such interventions have been short lived and unsustainable. Teacher commitment is low, affecting the quality of teaching and learning and overall school performance negatively. Based on the background given above, one assumes that there are challenges in dysfunctional secondary schools which negatively impact on the promotion of the teachers’ mental health. Presently, no scientific evidence has so far been found relating to promoting the teachers’ mental health for them to develop a sustainable teaching and learning environment in these dysfunctional schools.

### **Research Questions**

The study was guided by the following research questions:

- What are the challenges facing teachers in dysfunctional secondary schools which negatively impact on the promotion of their mental health?
- What strategies can be followed to improve academic situation in schools in rural areas from dysfunctionality which include promotion of teachers’ mental health?

## **METHODOLOGY**

### *Design*

The study was conducted using quantitative research design to find out challenges in the promotion of the teachers’ mental health for them to create an environment that promotes quality teaching and learning in dysfunctional secondary schools in Mutale area in the Vhembe District.

### *Population*

The target population for this study was 350 teachers in 8 secondary schools in Mutale area of Vhembe District of Limpopo Province. These are teachers who teach at least one of the following subjects regarded as difficult: English, Mathematics, Physical Science and Life Sciences.

### *Sampling*

Sampling is a process of selecting observation (Babbie & Mouton, 2012). A sample is defined as the representative of the population from which it is selected if the aggregate characteristics of the sample closely

approximate those same aggregate characteristics in the population (Babbie & Mouton, 2012) as used in this study. A purposive sampling procedure was used to select 160 respondents for this study from 8 secondary schools whose matric academic performance is consistently poor resulting in the school categorised as dysfunctional. The sample of 143 teachers completed the questionnaire from the 160 identified in the schools who teach subjects regarded as difficult, and which are contributing to the low pass rate in matriculation.

#### *Instrument*

Teachers were requested to rate issues related to the promotion of teachers' mental health on a self-constructed, closed-ended five-point Likert-type scale questionnaire, consisting of 'strongly agree', 'agree', 'not sure', 'disagree' and 'strongly disagree'. The questionnaire measured several aspects regarding promotion of teachers' mental health for them to improve the quality of teaching and learning, which is the focus of this paper. The questionnaire consisted of two sections: Section A, requesting for demographic information and Section B requesting for information regarding the association of the teachers' mental health for them to improve the quality of teaching and learning. Questions provided greater uniformity of responses and are more easily processed to extract results from data. Five point Likert Scale type questions required respondents to indicate the extent to which they agreed with each of the statements given. To increase reliability of this questionnaire, it was pretested with five respondents from the identified schools in order to identify flaws and ambiguities in the questionnaire while ensuring that the items were clear and easy to answer. Observation of conditions in the schools which focused on the teachers and the physical structure was also done during distribution and collection of questionnaires. What was considered relevant to the promotion of mental health guided by literature reviewed was captured for analysis.

#### *Data collection*

Data were collected from eight secondary schools which have been dysfunctional from 2009 to 2013 in Mutale area in the Vhembe district. The circuit managers also allowed the research team to collect data from their schools where we asked teachers willing to participate to consent. The researchers administered the questionnaires to the participating schools and collected them after a week. The return rate for the questionnaires was 90%.

#### *Ethical consideration*

The Department of Education gave us permission to conduct the research in the schools. Hamilton and Corbett-Whittler (2013) indicate that ethics in research needs attention from the beginning of the study to the end. Gallagher, (2009); O'Connor, Dearing & Collins, (2011) also stress that the ethics in research project continues through the research process. Participants consented by signing letters to take part in the study. They were further informed about the purpose of the research and that the results would only be used for the purpose of this study. They were also made aware that their participation was voluntary and that they were free to withdraw without any penalty.

#### *Data analysis*

A computer loaded with the IBM Statistical Package for Social Science (IBM SPSS statistics Version 22) programme was used to analyse quantitative data from questionnaires as it is more powerful and accessible on the personal computer. Through the frequencies procedure, value labels of each variable as well as all possible summary statistics were listed. Where there were some differences, probably due to sampling error percentages based on row totals, column totals, or total sample size were computed through cross tabulations.

### **Results and discussion**

#### **Demographic information**

The demographic characteristics to determine which demographic characteristics of the respondents who completed questionnaires correlate best with their responses to the issues affecting teachers in dysfunctional secondary schools which have effect on the quality of teaching and learning are addressed in this section. Only one variable, gender, was included in the study for analysis.

#### **Gender**

Table 1 presents gender distribution of questionnaire respondents which include both male and female respondents. Slightly more than half (50.3%) of respondents in the study were males.

Table 1 Gender

Gender	Frequency	Percentage
Female	71	49.7%
Male	72	50.3%
Total	143	100%

**Challenges in the promotion of the teachers’ mental health for them to create an environment that promotes quality teaching**

**Commitment of teachers**

Teachers’ general perception of work environment has a great influence on the level of satisfaction and productivity. Teachers’ commitment bring about job performance which contributes towards a positive environment in the school for learning and teaching to succeed. Table 2 shows results indicating how teachers are committed to teaching learners in their schools.

Table 2: Commitment of teachers

Commitment of teachers	Frequency	Percentage
Not at all	9	6.3%
Lesser extent	21	14.7%
Not applicable	2	1.4%
Not sure	3	2.1%
To a greater extent	108	75.5%
Total	143	100%

The results in Table 2 show that 75.5% of respondents think that to a great extent, commitment of teachers affect the quality of teaching and learning in a dysfunctional secondary school while 6.3% think that it does not. There are significant differences in the rating of this item by level (Chi-Square = 36.974,  $p < 0.05$ , Cramer's  $V = .254$ ). Circuit managers significantly (75%) confirmed that commitment of teachers is an issue that affect the quality of teaching and learning. We observed that though the teachers were committed, their morale was low. The infrastructure was weak; classrooms had cracks and potholes and graffiti. These conditions negatively affect the promotion of the teachers’ mental health resulting in poor performance by teachers and learners. While working with the poorest performing schools, it is important to get things such as time management and teacher attendance and commitment right before interventions at the curriculum level. Teachers cannot teach well if they are poorly motivated. Motivation is an energizing force that produces, directs and sustain an individual’s efforts (Basil, 2013).

**Teacher’s knowledge of subject content**

Subject content knowledge is critical for teachers to promote the quality of teaching and learning. Table 3 below presents teachers’ knowledge of subject content.

Table 3: Teachers’ knowledge of subject content

Teachers’ knowledge of subject content	Frequency	Percentage
Not at all	11	7.7%
Lesser extent	15	10.5%
Not applicable	2	1.4%
Not sure	8	5.6%
To a greater extent	107	74.8%
Total	143	100%

The subject content knowledge is a core component of teacher competence. A teacher who has sufficient subject knowledge is motivated to go to class and teaches with confidence. Sufficient knowledge on the subject boosts the morale of the teachers. Results show that the majority of the respondents (74.8%) think that teacher’s knowledge of subject content is to a great extent critical for promotion of teachers’ mental health for them to contribute effectively to the quality teaching and learning. There are significant differences in the rating of this item (Chi-Square = 38.935,  $p < 0.05$ , Cramer's  $V = .261$ ). Circuit managers significantly (75%) feel teachers’ knowledge of subject content affect learner performance. The results of this study suggest that the poor performance of learners is brought about by teachers who are not knowledgeable in their subject content and therefore poorly motivated. Teachers must have an in-depth knowledge of subject content that they teach, and



the ability to understand it from the learners' perspective (Ball & Forzani, 2011; Mosely, 2000; Mitchell, Robinson, Plake & Knowles, 2001).

Knowledge of the subject matter is as equally important as the requirements of education and the philosophy of life to the society. When teachers know and understand what philosophy of life entails and underlie their practice of education, they have the certainly in their minds and a sense of responsibility. Effective teachers communicate subject knowledge actively, clearly and in a structured way and use a variety of teaching strategies to ensure the best possible mastery of different aspect of subject content.

### Teacher – learner interaction

Teacher- Learner interaction has a reflective effect on the promotion of the teachers' mental health. Miller (2000); Basil (2013) found that the teacher-learner interaction play an important role in helping promoting quality teaching and learning. Results showing teacher-learner interaction are given in Table 4 below.

**Table 4:** Teacher - learner interaction

Teachers - learner interaction	Frequency	Percentage
Not at all	5	3.5%
Lesser extent	22	15.4%
Not applicable	3	2.1%
Not sure	15	10.5%
To a greater extent	98	68.5%
Total	143	100%

The results in Table 4 show that teachers-learner interaction is a critical issue which affects the promotion of the teachers' mental health so that they are able to provide quality of teaching and learning. The majority (68.5%) of respondents indicate that learner-teacher interaction affect the quality of teaching and learning to a great extent. Lee (2007); Westaway (2015) established that the trust developed between the learner and teacher can contribute to learner's academic performance. Koplou (2002); Helen and Michael (2013) recommend that effective teacher-learner interaction encourage greater confidence and classroom engagement. In addition Silins and Murray-Harvey (1995); Barber and Mourshed (2011) specified that learners who indicate high feelings of ability in their interaction with their teachers academically do well. There are significant differences in the rating of this item (Chi-Square = 29.513,  $p < 0.05$ , Cramer's  $V = .227$ ). Circuit managers significantly confirm that teacher-learner interaction in some schools are to a greater extent an issue which affects the provision of quality teaching and learning. Teachers-learner interaction depends on different settings, in some school settings they are negative and in others, they are positive. In order to achieve good performance there must be positive teacher-learner interaction which would boost the morale and the teacher thereby improving their well-being. Teachers whose well-being is healthy are in a position inter-act with learners in promoting teaching and learning environments in schools that are dysfunctional.

### DISCUSSION

The results showed that issues related to the teacher's well-being have the greatest impact on the promotion of quality teaching and learning. Crosswell and Elliot (2004) in their studies, point out that one of the most critical factors for the future success of education and schools is the commitment of teachers. Commitment requires individuals who are ready to accept challenges they may have to deal with as it usually evokes a strong sense of intention and focus. Fisher, Frey and Hattie (2016) claim that instructive commitment can be improved by promoting a culture that is welcoming; in which the environments for learning are ever-present; which look at how school community analyses how their behaviors affect them. It is accompanied by a statement of purpose or a plan of action. Teachers work for the Department of Education, and commitment to this institution should be expected. Basil (2013) stresses that teachers' commitment leads them to be accountable to their responsibilities and supervision of different tasks provided to the learners as the result it conveys a change to academic performance of learners and good work. Abiding by its rules and regulations and embracing its philosophical and pedagogical principles are reasonable requirements.

A teacher whose well-being is healthy would be able to manage all these things and make a meaningful contribution to teaching and learning. Health promotion is about realising people's potential to make them more resilient and involves building strengths, competencies and resources. Poor mental health of teachers negatively affect the commitment of teachers to provide quality teaching in dysfunctional secondary schools. Teachers' with lower level of commitment develop fewer plans to improve the academic quality of their instruction (Danetta, 2002; Helen, & Michael, 2013). There are significant differences in the rating of this item (Chi-Square

= 36.974,  $p < 0.05$ , Cramer's  $V = .254$ ). Circuit managers significantly feel that commitment of teachers is an issue that affects the quality of teaching and learning.

Secondary teachers need motivation in order to promote productivity and educational quality. Motivation promotes an individual's well-being. A mentally healthy teacher can be motivated to improve and sustain the quality of teaching and learning at schools (Kutame et al., 2014). A good work environment is, therefore, that kind of environment where staff is highly motivated to work hard to bring about improved job performance. Motivation to secondary school teachers, is critical as it may encourage teachers to be positive and accountable to their responsibilities and supervision of different tasks provided to the learners; as the result, the academic performance of learners would improve (Basil, 2013).

The kind of relationship that exists between teachers and colleagues can affect their level of commitment as well as their attitude towards the work. The good condition of the infrastructure also have positive influence on the promotion of the teacher's mental health.

Teachers' level of education and depth in the subject content they teach, have positive correlation with high level of learner achievement. Teachers' working conditions negatively affect their mental health and their ability to provide quality education: If the working conditions are conducive, they enhance the well-being of teachers. Learner-teacher interaction affects the promotion of the teachers' mental health and the environment for quality of teaching and learning to take place. Murray and Almgren (2005); Orth, Robins and Widaman (2012). indicate that learners who have negative relationships with their teachers are associated with negative outcomes including high rates of school dropout, lower rates of college applications, low self-efficacy and low self-confidence. Teachers whose well-being is sound and are using different teaching approaches find it easier to inter-act with learners for them to understand what is being taught. Various studies (Cornelius-White, 2007; Roorda, Koomen, Split, & Oort, 2011; McCormick, O'Connor, Cappella & McClowry, (2013) have shown that students with better teacher-learner relationships tend to achieve more highly in school.

#### **Teacher mental health promotion model**

Based on the results of this study, The Teacher Mental Health Promotion Model (Figure 1) was developed for promotion of teachers' mental health for them to create an environment that promotes the quality of teaching and learning. Teacher-mental health promotion model incorporated self-actualization, academic support programs in schools, participation by stakeholders in promoting teaching and learning, self-evaluation by schools and assessment by schools and stakeholders in all school activities.

The model consists of a closed circle having five stages. Stage 1 shows "Teacher-mental health promotion through self-discovery". Teachers are made aware of their personal well-being and school situation so that they discover themselves what affects their school system negatively to the point of being dysfunctional. Teachers should also discover and acknowledge their talents and abilities for them to contribute positively towards creating a suitable sustainable learning and teaching environments. Some teachers had not been developing themselves professionally and academically. This self-discovery would enable teachers to accept themselves and to be in a position to change and develop.

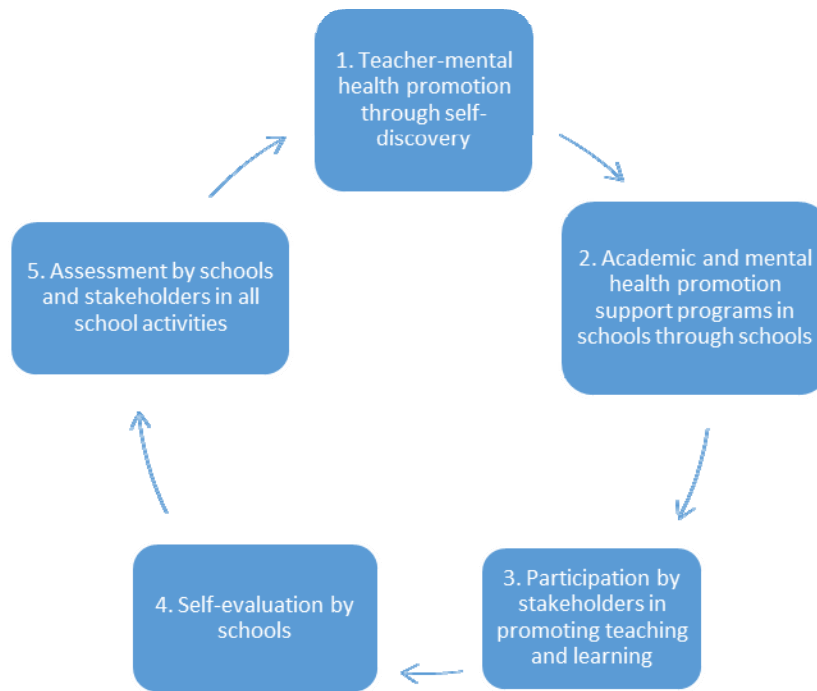


Figure 1: Teacher Mental Health Promotion Model

The Model continues with (2) development of academic and mental health promotion support programs in schools. Each school should develop its own programmes guided by their findings during self-discovery exercises. The programmes will be suited to their situation and needs; it will be easy for teachers to own the programmes than those imposed upon them. Self-developed programmes are easy to understand and therefore relevant to the situation.

The third stage (3) is that of participation by stakeholders in promoting teaching and learning. Stakeholders must be involved in the improvement of the school situation; they should feel that they are part of the school in the area of their jurisdiction. By being part of the school improvement plan, they will be able to establish why it is necessary that they should lend a hand when need arises. We have observed that most of the schools in the project had poor facilities (physical resources). By being part of the problem, it is envisaged that they might feel obliged to improve the situation.

Stage four (4) is about self-evaluation by schools. Each school is expected to evaluate the progress made since the start of the programme after two years to allow processes that take place as the school develops. Teachers and all involved in the programme know where and how and even why they started with the programme. They also know how the programme has developed and should therefore be in a position to evaluate progress made.

The last stage (5) allows assessment by schools and stakeholders in all school activities. This exercise deals with the bias during self-evaluation by teachers at each school. The stakeholders will be able to reflect on the biases established for the school to plan for future. The Model continues to stage one to establish if indeed the teachers had been open minded to point to the issues that affect their commitment to the development of the school to move out of the dysfunctional zone.

## CONCLUSION

This study confirms the conditions in the rural schools are generally not conducive for quality teaching and learning and have thus rendered the school dysfunctional. This study suggests that the dysfunctionality of the schools impacts negatively on the mental health of teachers resulting in poor performance by learners and on overall performance of the school in matters relating to learner academic performance. These results further indicate that teachers in rural dysfunctional schools need the involvement of other stakeholders in promoting their mental health through improvement of physical resources. The results suggest that the schools, working in partnership with their communities, can positively contribute to the well-being of teachers who would turn around the situation in dysfunctional schools.

## RECOMMENDATIONS

The Department of Basic Education needs to take into consideration the promotion of mental health of teachers in their quest to improve the quality of teaching and learning. Physical resources should be improved so that conditions in the schools are conducive for promotion of the teachers' mental health. They need to employ school principals and teachers who can handle situations in schools, teach and motivate learners to work hard and produce excellent results. Frequent workshop, training and seminars should be provided for teachers to improve their teaching skills and employ those suited to their school situations. The study was conducted in Vhembe district in Mutale area targeting eight selected dysfunctional secondary schools. We recommend that the same study be conducted to other dysfunctional schools in all the districts. A study on the promotion of mental health of learners in schools that are performing poorly needs to be conducted in comparison with those learners in well performing schools.

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## REFERENCES

- Babbie, E. & Mouton, J. (2012). *The Practice of Social Research: South African Edition*. Oxford University Press: Goodwood
- Ball, D. L., & Forzani, F. M. (2011). Building a common core for learning to teach, and connecting professional learning to practice. *American Educator*, 35(2), 17–21, 38–39.
- Barber, M., & Mourshed, M. (2011). *How the world's best-performing school systems come out on top*. New York: McKinsey & Company. Retrieved January 16, 2015, from [http://www.mckinsey.com/App\\_Media/Reports/SSO/Worlds\\_School\\_Systems\\_Final.pdf](http://www.mckinsey.com/App_Media/Reports/SSO/Worlds_School_Systems_Final.pdf) res.
- Basil, E. B. (2013). *An analytical study of motivation upon teachers in public secondary schools of Nyamagana District in Mwanza City*. St Augustine University of Tanzania.
- Bill of rights (Chapter 2 of the Constitution of the Republic of South Africa). No. 108 of 1996.
- Bloch, G. (2011). The toxic mix: What's wrong with South Africa's schools and how to fix it. *Africa Education Review*, 8:2, 389-390, DOI: 10.1080/18146627.2011.606615.
- Bush, T. (2008). *Leadership and Management Development in Education*. Johannesburg: Hawker Brownlow Education.
- Cornelius-White, J. (2007). *Learner-centered teacher student relationships are effective: A meta-analysis*. Review of Educational Research, 77(1), 113-143. doi: 10.3102/003465430298563.
- Danetta, V. (2002). What factors influence a teacher's commitment to student learning? *Leadership and Policy in Schools*, 1(2), 144-171.
- Fisher, D.B, Frey, N. & Hattie, J. A. (2016). *Visible learning for literacy, Grades K-12: Implementing the practices that work best to accelerate student learning*. California, Thousand Oaks.
- Gallagher, M. (2009). *Researching with children and young people: Research design methods and analysis*. London: Sage Publications.
- Hamilton, L. & Corbett-Whittle, C. (2013). *Using case study in educational research*. London: Sage Publications Ltd.
- Helen, A. & Michael, J. L. (2013). Teachers' knowledge and confidence for promoting positive mental health in primary school communities. *Asia-Pacific Journal of Teacher Education*, (41)2:126-143.
- Henry, K. L., Knight, K. E., & Thornberry, T. P. (2012). School disengagement as a predictor of dropout, delinquency, and problem substance use during adolescence and early adulthood. *Journal of youth and adolescence*, 41(2), 156-166.
- Koplow, L. (2002). *Creating schools that heal*. New York: Teachers college press.
- Kutame, A.P., Maluleke, M., Netshandama, V.O. & Ramakuella, N.J. (2014). A mental health promotion approach: The experiences of teachers in rural dysfunctional schools in Limpopo Province, South Africa. *African Journal for Physical, Health Education, Recreation and Dance, December (Supplement 1:2), 426-434*.
- Kutame, A.P.; Ravhuhali, F.; Mutshaeni, H.N. & Maluleke, M. (2015). Teaching strategies for rural dysfunctional schools: Can teachers make a difference? *International Journal of Educational Sciences*, (10, 1(special Volume), 149-155.
- Leary, M. R. (2010). *Affiliation, acceptance, and belonging: The pursuit of interpersonal connection*. In S. T. Fiske, D. T. Gilbert & G. Lindzey (Eds.), *Handbook of social psychology*, 2 (5<sup>th</sup> Ed.). (864-897). Hoboken, NJ US: John Wiley & Sons Inc.

- Lee, S.J. (2007). The relations between the student- teachers trust relationship and school success in the case of Korean middle schools. *Educational studies*, 33(2), 2009-216.
- Lethoko, M.X., Heystek, J. & Maree, J.G. (2001). The role of the principal, teachers and students in restoring the culture of learning, teaching and service (COLT) in black secondary schools in the Pretoria region. *South African Journal of education*, 21 (4): 311-318.
- Mbulaheni, V.M.; Kutame, A.P.; Francis, J. & Maluleke, M. (2014). Child support grant and increase of teenage pregnancy in rural dysfunctional school. *African Journal for Physical, Health Education, Recreation & Dance*, 1:1, 64-74.
- McCombs, B. L. (2014). *Using a 360 degree assessment model to support learning to learn*. In R. Deakin-Crick, T.Small & C. Stringher (Eds.), *learning to learn for all: theory, practice and international research: A multidisciplinary and lifelong perspective* (241-270). London: Routledge.
- McCormick, M., O'Connor, E.E., Cappella, E. & McClowry, S. (2013). Teacher-child relationships and academic achievement: A multi-level propensity score model approach. *Journal of School Psychology*. 51:611–624.
- Miller, S. R. (2000). *Falling off track: How teacher-student relationships predict early high school failure rates*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA. (ERIC Document Reproduction Service No. 441907).
- Mitchell, K.J., Robinson, D. Z., Plake, B. S., & Knowles, K.T. (2001). *Testing teacher candidates: The role of licensure tests in improving teacher quality*. Washington, DC: National Academy Press.
- Mohlala, T. (2010). Limpopo, KZN, Home to South Africa's worst schools. *Mail and Guardian*, <http://mg.co.za/article/2010-09-29-limpopo-kzn-home-to-sas-worst-schools>, Accessed:16/02/09.
- Monyooe, L.; Tjatji, M. & Mosese, E. (2014). South Africa's Increased Matriculation Passes: What Skunks behind the Rose? *Journal of Education and Training Studies*, 2 (1), 180-192.
- Murray, C., & Malmgren, K. (2005). Implementing a teacher-student relationship program in a high- poverty urban school: Effects on social, emotional, and academic adjustment and lessons learned. *Journal of school psychology*, 43 (2), 137-152.
- National Education Collaboration Trust. (2013). *A Call for proposals from qualified organizations to provide additional management and delivery capacity into a school improvement programme in Vhembe District, Limpopo*. National Education Collaboration Trust, Pretoria.
- Nkosi, B. (2014). More Limpopo Textbooks for 2015? *Mail and Guardian*. Johannesburg.
- O'Connor, E.E., Dearing, E., & Collins, B.A. (2011). Teacher-child relationship and behavior problem trajectories in elementary school. *American Educational Research Journal*, 48(1), 120-162.
- Orth, U., Robins, R. W., & Widaman, K. F. (2012). Life-span development of self-esteem and its effects on important life outcomes. *Journal of personality and social psychology*, 102(6), 1271.
- Pretorius, S.G. (2014). Educators' perceptions of school effectiveness and dysfunctional schools in South Africa. *Journal of Social Science*, 40(1): 51-64.
- Roorda, D., Koomen, H., Split, J. L., & Oort, F. J. (2011). The influence of affective teacher-student relationships on students' school engagement and achievement: A met-analytic approach. *Review of Educational Research*, 81(4), 493-529. doi: 10.3102/0034654311421793.
- Rossouw, J.P. (2003). Learner discipline in South African public schools – a qualitative study. *Koers*, 68(4):413-435.
- Saunders, W. (1996). One lost generation after another. *Frontiers for Freedom*, 18-19.
- Silins, H., & Murray – Harvey. (1995). *Quality schooling versus school performance: What do students and teachers think?* Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA. (ERIC Document Reproduction service No.385531).
- The World Bank report (2014). Public spending on education, total (% of GDP): Aug. 6, 2014
- Veriava, F. (2013). *The 2012 Limpopo textbook crisis: A study in Rights-Based Advocacy, the raising of rights consciousness and governance*. Johannesburg, Section 27 News.
- Westaway, A. (2015). *Towards an explanation of the functionality of South Africa's 'dysfunctional' schools*. Grocotts Mail, 1: 1-13.
- Zinate, Y., Seyed, M.S., Elham, K. & Hossein, M. (2016). The Relationship between Achievement Motivation and Its Components in the High School Girls with Teachers' Personality Type (B) and Demographic Factors. *Journal of Educational and Management Studies*, 6(2):46-56.

# THE ROLE OF TEACHER UNIONS IN EDUCATION WITH SPECIFIC REFERENCE TO SOUTH AFRICA

Lekhotla James Mafisa  
P. O. Box 1417 ROOIHUISKRAAL, 0154  
mafisa@telkomsa.net

## ABSTRACT

The role of teacher unions in education is of utmost significance. The state alone cannot achieve everything in the field of education in a country. The support of interested stakeholders in education, such as teachers is therefore desirable.

Teacher unions as organised labour or pressure groups in education are legally constituted to play meaningful roles in education, especially with regard to bargaining for teachers and ensuring quality of education by means of engaging teachers in improving teaching approaches and maintaining a high standard.

This paper is therefore focused on the extent to which teacher unions improve the quality of education or not. This paper makes use of mixed research method. Structured questionnaires and focused interviews will be employed in the investigation of this topic. Conclusions include inter alia, that teacher unions and the Department of Basic Education must strive to have a working relationship at all times in terms of curricula teacher development and policy matters in South Africa.

**Key words:** teacher unions, teaching and learning, collaboration and anti-corruption

## INTRODUCTION

Teacher unions are intended to work in partnership with the Department of Basic Education (DBE) for the melioration of education through the involvement of their members to take part in many departmental endeavours in improving the quality of education. However, this is mostly contrasted by the adversarial relationship between teacher unions and the DBE as teacher unions continue put excessive demands to the Department that could not accede to. It would be ideal for the DBE and teacher unions as major stakeholders in education to find common ground and that the two bodies work together for the good of education. Teacher unions must do much in convincing the public that they have much to offer for the advancement of education in South Africa. As such, teacher unions have been reduced to fight for the rubbles in a crumbling occupational space with limited scope and energy towards shaping education

## Conceptual Framework

There is no generally agreed definition of what exactly constitutes the concept, *education*. Page (2001), as cited in the *Review of Educational Sector Analysis in Burkina Faso (1994-1999)* offers a relatively comprehensive explanation of education as ‘the training of people with a view to impart intellectual or manual skills and development of physical and moral qualities’. This explanation is taken as the operational definition of this research paper. On the other hand, the United Nations presents education as a right which implies that every country is obliged to provide. It therefore becomes incumbent on stakeholders in education such as teacher unions to monitor the state so that education is provided in a fair and equitable manner in line with the laws of a country (<http://www.un.org/en/globalissues/briefingpapers/efa/17/08/2016>).

In the same vein, *quality* as a concept has always been a contested issue among learners and scholars of educational studies, politicians, education specialists and policy makers. All definitions offered by the scholars from different realms appear to be valid as they apply to the varied contexts. In education, quality delineates the concept of learning as what is generally accepted as right or something of good standard or something perceived to be good based on reasonable grounds. Fredriksson (2004:4) postulates quality education as, “the education that best fits the present and future needs of particular learners in question and the community in question, given the particular circumstances and prospects”. This therefore makes the role of teacher unions ideal to ensure that the learners accomplish their mission (learning), and that teachers act in accordance with their professional calling in ensuring that there is meaningful learning and teaching in a didactic situation. Furthermore, democracy and human rights must as a matter of fact be understood as the hallmark for quality education (Fredriksson, 2004:4). Teacher unions, through collective bargaining, have the ability to compel the employer (DBE) to play both its fiscal and legislative roles in education (Cowen & Strunk, 2014:1).

## Outline of the History of Teacher Unions in South Africa

The roots of teacher trade unionism can be traced back to 137 years ago when the Native Educational Association (NEA) was formed in 1879 (Govender, 1996). The establishment of the NEA was a response by black teachers who sought a collective approach to address common problems that affected them as a result of

the historical economical marginalization of black educators. However, the nature of teacher unions at the time and during the apartheid era reflected a deeply polarized society. Teacher unions were formed along the existing racial and linguistic divisions. As such, teacher unions that were later to develop in the post-apartheid South Africa retain the complexion of the historical character of the political culture of the period before the dawn of democracy in 1994.

There are currently three main trade union actors in the South African education terrain and their existence is guaranteed under Section 23 of the South African Constitution of 1996. These include the South African Democratic Teachers Union (SADTU), the South African Teachers Union (SATU) and the National Professional Teachers Organization of South Africa (NAPTOSA). Other teacher unions include the Professional Educators Union (PEU) and the Natal African Teachers Union (NATU). Both SADTU and NAPTOSA (combined trade union) are predominantly black teacher unions with a membership of about 75% black teachers each (Heystek and Lethoko, 2001:224-227). Meanwhile, SATU is dominated by Whites (90%). Though all these unions have more or less similar objectives, their policies and ideological orientations differ. The central issue among all the teacher unions is the struggle for better working conditions of their members. Nkomfe and Moll (1990) state that SADTU openly identifies itself with the political agenda of the ruling African National Congress (ANC). Its umbrella body, the Congress of South African Trade Unions (COSATU) is a member of the ANC-tripartite alliance and SADTU owes its formation in 1990 in support of the ANC.

The different policy positions of the South African trade unions should be understood in the context of the history of liberation in this country. As the teacher unions mainly align themselves with brands of political economic positionism in relation to power, money and liberation struggle. When SADTU was established, principals (heads of schools) were excluded because they were perceived as apartheid collaborators. NAPTOSA provided a unionist home for those principals, disgruntled SADTU members and others. In the same vein, white teachers identified SADTU with the ANC-led government and many of them sought an alternative in SATU. Despite the multiplicity of teacher unions in South Africa, NAPTOSA, SATU, NATU and PEU have proved to have a point of convergence on many educational matters and they have a collaboration agreement (Govender, 1996).

In retrospect, SATU and NAPTOSA claim that their main concern is the professional element of teaching as a career and they have since lost their taste for industrial action, in favour of negotiation and mediation as dispute settlement measures. On the other hand, the membership and culture of SADTU reflects the features of “*toyitoying*” (*engaging in strike action*). If the employer, the government in this case, does not meet their demands, they are quick to embark on strike action, with little regard to how such action will impact the performance of learners. Unlike other teacher unions, SADTU is overshadowed with “unionist functions” and the “professional function” is secondary to its course (Heystek and Lethoko, 2001:224-227).

### **Educational Reforms and the role of Teacher Unions**

The recent literature on educational studies offers contrasting views on the role of the teacher unions in the improvement of the standard and quality of education. Cowen and Strunk (2014:10-12) argue that teacher unions have political and legislative influence on educational policy that favours their members and their perceptions in issues that relate to educational matters. For example, in South Africa, teacher unions were instrumental in influencing teacher performance management development system (PMDS) which has direct influence on teacher salary progression.

Astonishingly, the role played by the teacher unions, especially with regard to educational reform, is bleak. In contrast, the view that teacher unions are preoccupied with the well-being of their members, instead of the educational interests, is dominating both in historical and contemporary literature on education (Fullan, 1998). Bascia (1998) shared a view of many scholars of educational studies when she argued that teacher unions are conservative institutions that are more concerned with teachers’ wellbeing, which has a tendency of alienating the educational interests of the learners. This implies that primary issues of concern to the teacher unions become those aspects centred on the material and working conditions of their members. However, there are those professional issues that teacher unions engage in with a prime target of improving the professional standing of teachers, only to find that meagre benefits trickle down to learners. For instance, Bascia (1998) contends that in both Canada and the United States of America, teacher organizations have a shared concern over the so called “bread and butter issues” and professional issues. Professional issues entail the broadening of teacher’s roles, capability and capacity to meet the needs of the learners.

Barber (1996:171-194) is of the opinion that teacher unions do not specifically respond by addressing educational crisis. To a large extent, the unions are concerned with more general labour issues which cut across

the whole world. According to Barber (1996:171-194) the technological revolution and redefinition of the concept of 'work' make it difficult for the teachers to seek solutions relating to their sector from non-educational labour unions (Leithwood & Menzies, 1998:324-46). However, Vaillant (2005:5-8) emphasises the fact that the support of teacher unions is extremely important in championing educational reforms.

In the midst of all the challenges, teacher unions have crucial role to play with regard to educational programmes, policies and reforms. In fact, the unions are responsible for the coordination of their members and there is no educational policy that can succeed without sufficient consultation with the teacher, who is the person who deals directly with the daily encounters of the classroom situation. Teacher unions are well resourced, owing to the fact that they receive subscription fees from their members. As a result, they are a structured and organized labour force and can play a meaningful role in the formulation and implementation of policies focusing on the educational sector. Bascia (1998) espoused this idea when she noted that teacher unions' contribution towards policy formulation and amendments is largely unseen because of the perception of the media and scholarship that their intentions contravene positive steps towards good educational development. As a matter of fact, across the globe, teacher unions have received little media attention, except when they are at logger-heads with the state, especially on salary increment and related benefits (Leithwood & Menzies, 1998:324-46).

Generally, teacher unions are perceived to be antithetical to educational change and advancement. Carlson (1992) conducted a study that paints a negative image of the teacher unions in the context of education reform. His research findings showed that in the United States of America (USA), a local teacher union rejected proposals for contractual provisions that introduced staff development programmes that were meant to enhance the teachers' understanding of the curriculum and to unleash their full potential in the execution of their duties. This conduct is not peculiar to the teacher organization cited by Carlson and it is not exceptional to the USA. In South Africa for instance, there has been resistance from the teacher unions whenever the (DBE) introduced a new curriculum (Masumbe and Cotzer, 2006: 208-228). For instance, under the then Minister of Education, Sibusiso Bengu, the Department of Education (DoE) introduced what is popularly known as the Outcomes Based-Education (OBE). Both Kader Asmal and Naledi Pandor, subsequent ministers of Education respectively, took the idea of OBE forward and this was further moulded into the National Curriculum Statement. In this context, the South African Democratic Teachers Union (SADTU) rightly opposed the OBE in practical and ideological terms arguing that the teachers were not ready and prepared to teach the new subjects and could not cope with the new teaching methodologies. Thus, one notes that an imposition of educational reform, no matter how well meaning it may appear, will achieve little result if it is not supported by teacher unions. Similarly, by and large, teacher unions robustly opposed the implementation of whole school evaluation, and guarded their members from inspection by whole school evaluation school developers (usually referred to as school inspectors). To date, evaluation of schools by means of Whole Evaluation, seems to be gradually losing impetus as it continues to meet stiff opposition in some schools by teacher union members.

It should be noted that in the South African case, the SADTU and other teacher unions are represented in the advisory bodies for the DBE. Therefore, they are consulted in one way or another during the planning processes of the educational policies. It is therefore safe to argue that SADTU and other trade unions play a protectionist role when they encounter the "not so user friendly policies" being promulgated in the educational setting. This can be blamed on the fact that the roles of the active union members are dominant over those of the less active of their fellows. Interestingly, there are some arguments that teacher union members are encouraged to take up defiance campaigns against the DBE from their headquarters offices. It needs to be pointed out that the origin of political parties in South Africa is born out of the struggle against the Apartheid system, so even today, the defiance character of teacher unions remains (<http://www.sadtu.org.za/docs/webcontent/2016/sadtu-book.pdf>, accessed, 20/08.2016). This presents a mammoth task for the teacher unions to play a meaningful role towards the reform process. The fact that teachers sometimes, through their teacher unions, refuse to perform contractual duties hinders their participation in the planning and execution of new curriculum models and this backfires during the implementation stage when teachers resist assuming new duties (Fullan, 1998).

In the analysis of the role of teacher unions in education reform, Barber (1996:171:194) establishes a nexus between the trade union function and professional function. She powerfully asserts that there is compelling evidence that the two aspects are integrally related. In other words, the success of the trade union role depends on the achievement of professional goals and vice versa.



### **The Impact of Teacher Unions on Learner Performance**

In most industries, the effect of labour unions on productivity is mixed. Teacher unions are not immune to these complexities. Eberts (2007) empirical study conducted in the USA inferred that the effect of teacher unions on learner achievement is also mixed. However, in the education sector teacher unions do not necessarily shape and alter the quality of learner performance. Nevertheless, teacher unions influence the effectiveness of schools, which is one of the prerequisites for the betterment of learner performance. This is achieved through teacher unions' agitation for smaller teacher-learner ratio and through learner centred than content focused teaching (Cowen & Strunk, 2014:3-5). Drawing lessons from numerous studies on the impact of teacher unions on learner performance, Eberts (2007) maintains that there is no obvious answer in this regard. To this end, the academic progress and development of the average-achieving learners in union schools could be slightly retarded when union members refuse to carry out their contractual duties of teaching. "Catch up" (to catch up on lost days of teaching and learning) campaigns undertaken by teacher unions and DBE have failed dismally. On the other hand, lower and higher achieving learners tend to do better in non-union schools.

Contextually, there is a consensus among the scholars of educational studies that teachers have the potential to effect changes to educational outcomes for the learners. A central conundrum among them relates to the specific teacher attributes that can turn around the performance of the learners. It is in this context that the unions' bargaining role becomes important. However, Johnson and Donaldson (2006) find the contradictory evidence as to whether the quality of teachers has improved as a result of collective bargaining. The notion that collective bargaining is the key to better learner achievement is based on the premise that better wages and salaries and good working conditions attract the best crop of educators (Loeb and Page, 2000:393-408). In the same vein, Van der Berg (2007:849-880) also argues against this misconception that pumping money into education would automatically improve scholastic results. Rather, emphasis must be on recruiting and developing dedicated cadre of teachers whose commitment to teaching is without question.

### **Mutual Partnership between Teacher Unions and Government**

Fredriksson (2004:4-5) indicates with empirical evidence that, perhaps, it would be useful for the teacher unions to fully articulate on the working environment of their constituency and develop the education system in the long run. On the same score, using Ghana as a case study, Fredriksson, (2004:17-18) advocates for a strategic partnership between the governments and teacher unions as the epitome in improving quality of education. This partnership should be grounded on shared responsibility, wherein both parties can identify each other's roles. For instance, according to Fredriksson, (2004:2-11) teacher unions can ameliorate the quality of education by:

- Promoting an interest among teachers and other education sector employees in improving their work;
- Cutting unreasonable teacher absenteeism; and
- Attracting projects that will improve the quality of the education.

Equally important, Fredriksson (2004:12) provides a unionist perspective that dictates that the government can improve the quality of learning and teaching by giving sufficient attention to the following areas: salaries, teacher education and working environment in schools. This can only be possible if there is rigorous mechanism for engagement and consultation between the teacher unions and the DBE. In some cases, the relationship between the DBE and teacher unions becomes strained as a result of not agreeing on an acceptable strategy to be undertaken. This point is illustrated by the continual strife, from about 2012 till 2016 in which five major teacher unions refused to allow teachers participate in the Annual National Assessments. While the Department views these tests as essential, teacher unions view them as a waste of time because they simply point out the inability of learners to cope with scholastic work and that little is being done by the DBE to address this anomaly and to undertake curricula empowerment programmes for both learners and teachers (Govender, 2015). In the opposite, a cordial working relationship between the DBE and teacher unions could yield positive spin-off in education and help to halt increasing drug use and violence in schools by learners, great absenteeism by teachers, and facilitate fair attitudes by both learners and teachers toward school work.

### **Waging a War against Bad Governance / Corruption**

The problem of how to effectively and efficiently address the problem of corruption in the education system boils down to how to secure the support of the teacher unions in this regard. According to Thabo Mbeki as quoted by Rankhumise and Shai (2007), "corruption is the sufficient condition that entrenches poverty and negates development". In the same reasoning, corruption has the potential of compromising the quality of education in South Africa and elsewhere. It is therefore, important for the teacher unions to take a leading role to combat and arrest the escalation of corruption levels in the education sector. Fredriksson (2004:17-18) observed that trade unions have laid a fertile ground for implanting anti-corruption mechanisms. For instance, most trade unions conduct workshops on trade unionism and related matters. As such, an item of anti-corruption could be added to their programmes for in-service training for the members as part of the professional ethics. In the final

analysis, teacher unions can lobby for the integration of anti-corruption mechanisms and instruments which could be vital in governance of education. However, it is disconcerting to read reports of escalating corruption by the dominant teacher union, SADTU which is engaged in unfairly and unscrupulously promoting their hand-picked candidates in return for payment (Masondo, 2014).

### **Advancement of the Culture of Learning and Teaching**

Teacher unions are at the centre for the restoration of teacher professionalism and the culture of learning and teaching (Heystek & Lethoko, 2001; Ratteree, 2004); Kerchner, Koppich & Weeres, 1997). Educationists (Heystek & Lethoko, 2001:224-227; Ratteree, 2004:146); Kerchner, Koppich & Weeres, 1997) succinctly argue that in the constituency of the education organizations, teachers occupy a crucial part: teaching. Therefore, success with regard to the enhancement of the culture of learning and teaching largely depends on the active participation of teacher unions on the entire process. It is therefore significant for the teacher unions to motivate their members to commit themselves to the provision of quality education against all odds.

However, factors that encourage and discourage teachers to unleash their full potential for the benefit of the learners cannot be over-looked. In relation to this, Heystek and Lethoko (2001:224-227) opined that the teacher unions must draw lessons from the education situation (practice) in their attempt to improve the level of education. However, instilling a professional code of conduct among the teaching corps cannot be left to the teacher unions alone. As a matter of fact, the enforcement of professional teacher conduct must be enforced with the full support of the Public School Government Bodies (PSGBs), Learners Representative Council (LRC), Department of Education and other stakeholders with an interest in educational matters. Lastly, teacher unions should make incentives in the form of awards (of recognition) for the best performing teachers in order to encourage them to excel in their work.

### **Research Methodology**

Mixed research methods were used wherein both qualitative and quantitative research approaches are used. Mixed research methodology has an advantage that where there is lack of clarity in the interpretation and analysis of results by one research method, an additional research method provides another perspective which the other research method does not provide. Quantitative research method makes use of figures and questionnaires in generating information. On the other hand, the qualitative approach makes use of interviews and observations in generating data (Sarantakos, 1998).

In the quantitative research methodology care was taken that the questionnaires were piloted in order to increase credibility and the validity of the research. Anonymity and the right to participate in the research by the participants was outlined and guaranteed. The sample size of five schools which were selected in an education district reflects a reasonable number of schools for this article, and 138 participants responded to the questionnaires which is an acceptable response rate with 150 teachers requested to fill in the questionnaires.

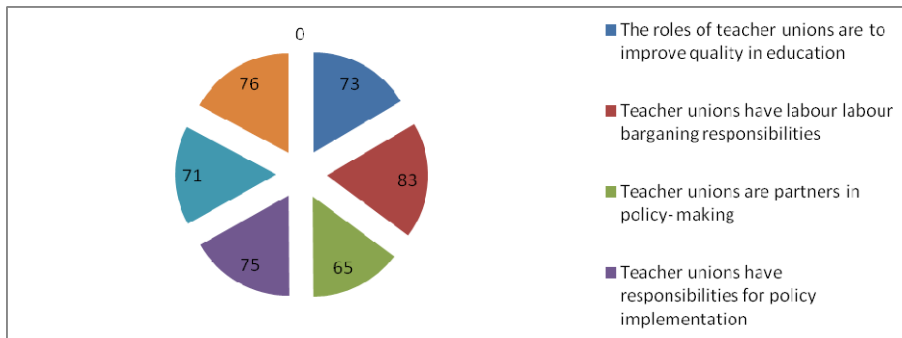
In the qualitative research, focused interviews were conducted in an open and free atmosphere that generated trustworthiness and credibility of the research as care was taken that the researcher engaged the right people who were knowledgeable of trade union matters as they related to their unions. The importance of interviews is underlined by Gay (1992:231) by stating that an interview “is most appropriate for asking questions which cannot effectively be structured on a multiple-choice format, such as questions of a personal nature”

The research was conducted in five high schools of the Tshwane South District of the Gauteng Department of Education (GDE). Five schools were randomly picked from a pool of the District schools. The schools were urban in nature and each school comprised of a reasonable number of teacher union members belonging to different union groups. The structured questionnaire was distributed to teacher union members who volunteered to fill in the questionnaire. In total, 138 questionnaires were received and analysed using Excel computer programme. Focused interviews were conducted with teacher union members who performed in administrative/managerial capacity. Four focused interviews were conducted with two of each of the dominant teacher unions (SADTU and NAPTOSA).

### **The Results and Analyses of the Research**

The results of this research indicate by high percentage scores (achieved by adding *highly agree* and *agree* scores) that the majority of teachers irrespective of membership association state that:

**Graph A: Roles and Responsibilities of Teacher Unions**

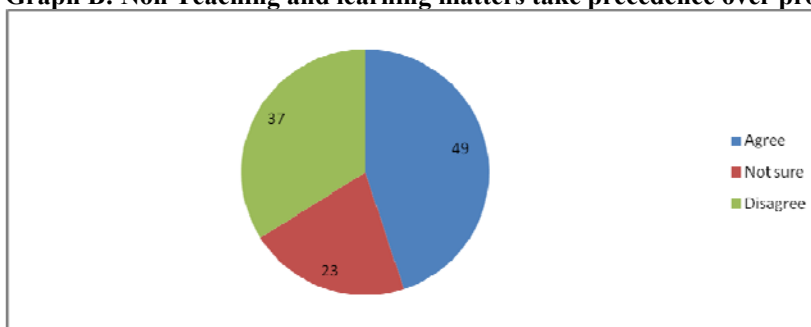


The roles of teacher unions are to improve quality in education with 73% approval rate; Teacher unions have professional responsibilities with 83% agreement; Teacher unions are partners in policy-making with 65 % approval rate; Teacher unions have responsibilities for policy implementation with 75% agreement; Teacher unions are instrumental in the functionality of schools with 71% agreement, and Teacher unions’ highest preoccupation is teacher rights with 76 % approval rate.

The literature reviews presented in this article support the notions that indeed, teacher unions contribute to the quality of education (Fredriksson, 2004), deal with professional matters which affect teachers (Bascia, 1998) and they are also partners in policy formulation. Furthermore, there is concurrence in literature reviewed that teacher unions receive less attention when they deal with educational matters than when they are at loggerheads with the state, especially on salary increment and related benefits. Likewise, Heystek and Lehoko (2001;224-227) argue that teacher unions are instrumental in the facilitation of teaching and learning in schools. This in turn implies that teacher unions are partly engaged in the implementation of education policy, in this context, which relates to teaching and learning. But this viewpoint is contrasted by teacher actions in agitating against the implementation of outcome-based-education and whole-school evaluation in schools. In addition, the results of the research for this article support the assertion that teacher unions’ main preoccupation is with teacher rights rather than professional matters. Indeed, teachers primarily pay their membership fees in order to be protected in cases of labour disputes with the DBE.

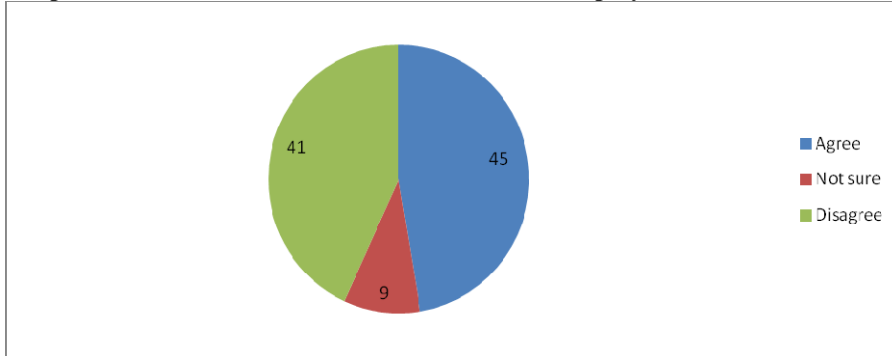
On the other hand, the results show (see the graphs: B, C, D & E) with relatively reduced majority (by participants) of percentage scores. Teachers unions either confirm (adding *highly agrees* and *agrees*) and disconfirm (adding *highly disagrees* and *disagrees*) the following statements:

**Graph B: Non Teaching and learning matters take precedence over professional issues**



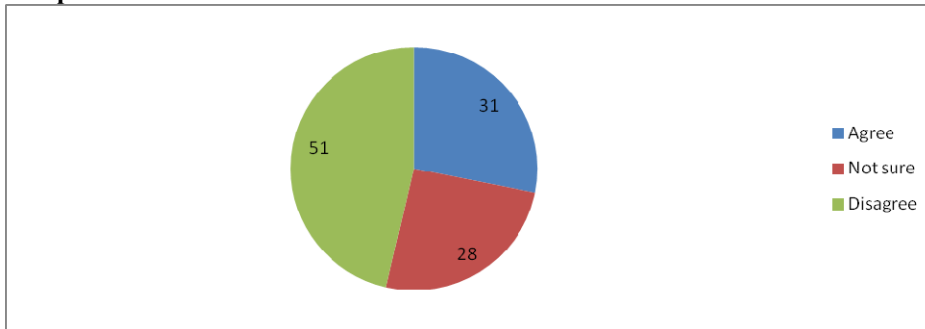
There is slight majority by participants that in most cases, non-teaching and learning matters take precedence over professional issues (Graph: B) with 49% agreement, 37% disagreement and 23% of the participants being neutral. This is supported by literature review in that the primary task of teacher unions is to protect teachers’ rights. Their other functions are of a secondary nature.

**Graph C: Teacher Unions and Conflict with the Employer**



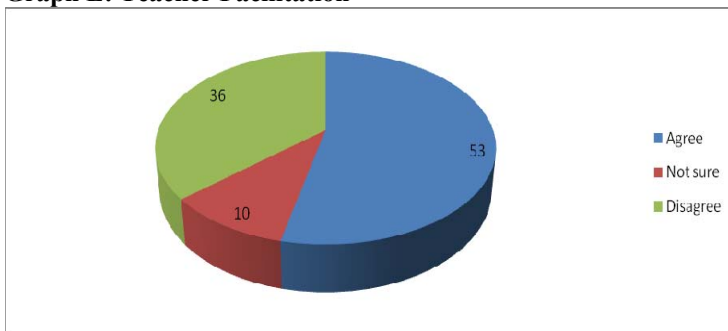
Teacher unions are bound to be in conflict with the employer (Graph C) with 45% agreement, 41% disagreement and 9% not being sure. The fact that teacher unions always strive to bargain for their members even on matters which are of a professional nature, such as having problems over the implementation of OBE and WSE support the statement that teacher unions are bound to be in conflict with the employer.

**Graph D: Teacher Unions and Administration**



Teacher unions are a hindrance to the administration (Graph:D) of schools with 31% agreement, 51% disagreement and 28% not being sure. The disagreement by teacher unions that they are not a hindrance to the administration of schools indicates their desire to work in harmony with the employer although they often find themselves being in conflict with the employer over bread and butter issues which are critical for the well-being of their members.

**Graph E: Teacher Facilitation**



Teacher unions facilitate easy administration (Graph: E) of schools with 53% agreement, 36 disagreement and 10% not being sure. The affirmation of the statement that teacher unions facilitate the administration of schools is in line with the preceding paragraph which states their wish to work in harmony with the DOE in matters which affect teaching and learning.

In the interviews, NAPTOSA indicated that their preoccupation was to bargain with the Department of Education in the interest of education in general and of their members in particular. They also indicated that they are engaged in collaborative efforts for the training of teachers in workshops with regard to curricula and policy matters. They indicated that they engage with the Department to allocate them money so that they could

undertake the training of teachers by way of workshops and other means which could be identified. NAPTOSA officials indicated that strikes and withholding of their labour is the last thing they should embark on as they strive by all other possible means to have good relations with the DBE. While SADTU officials also mentioned that in training of their members and keeping them up-to-date with professional matters they could not dissociate themselves from embarking on strikes whenever they felt that their members' rights were being infringed. One SADTU official stated that 'the strike has the potential to make the employer to listen to our grievances'

### Discussion and Conclusions

The results of this research indicate the desire of teacher unions to contribute to quality education, to be partners in policy formulation with the DBE and also actualize policy implementation in schools. This is in line with the professional calling of teachers which demands for their professional ethos in the carrying out of their duties. However, this stance is often compromised by the instruction of teacher unions directed to teachers to defy certain actions or policy implementation programmes imposed by the DBE. This is certainly bound to be a conflict of interest between teachers as individuals who feel duty-bound to obey instructions from the DBE and teachers as members of teacher unions who are bound by collective bargaining to support defiance campaigns by teacher unions against the DBE.

This conflict of interest is indicated when some teachers defy instructions of defiance by their teacher unions against the state. This approach becomes justifiable when teachers view themselves first as part of the state and thus bound by citizenship to contribute to the welfare of the state. On the opposite side, teachers find themselves being taken for granted by the state which is generally reflected in unfriendly approaches to the teachers in terms of unfavourable working conditions and scanty employee benefits. As a result of this, teachers find themselves having to look to teacher unions for protection against the state.

It becomes necessary that the state, through the DBE, must always strive for cordial relationships with teacher unions so that in return teacher unions would support the DBE in its endeavour to achieve quality education by means of well designed curricula and effective teaching and learning approaches.

The DBE must strive to engage teachers unions in a constructive manner all the time and involve them in decision making rather than as in most cases pronouncing certain policy positions as non-negotiable with teacher unions.

The DBE and teacher unions must jointly undertake tailor made training programme and mentoring programme to serving and to novice teachers respectively as a means of building a dedicated crop of teachers.

Teacher unions on the other hand must realize that their actions cannot always be antithetical to quality education as frequent strikes by teachers have tendency to sacrifice the quality of teaching and learning.

### References

- Barber, M. "Education Reform, Management Approaches and Teacher Unions", in Leithwood, K; Chapman, J; Corson, D; Hallinger, P; and Hart, A (eds). 1996 *International Handbook of Educational Leadership and Administration*, Part 1,171-194.
- Bascia, N. 1998 "Teacher Unions and Educational Reform", in Hargreaves, A; Lieberman, A; Fullan, M; and Hopins, D (eds). *International Handbook of Educational Change*, Part Two. Dordrecht: Kluwer Academic Publishers.
- Carlson, D. 1992 *Teachers and Crisis: Urban school reform and teachers' work culture*. New York: Roudledge.
- Cowen, J. & Strunk, K. 2014. Do Teachers Unions Influence Education Policy? What We Know and What We Need to Learn. Working Paper 2. The Education Policy Centre at Michigan State University: Michigan. Education: (<http://www.un.org/en/globalissues/briefingpapers/efa/> accessed, 17/08/2016).
- Eberts, R.W. 2007. "Teachers Unions and Learner Performance: Help or Hindrance?", *he Future of Children*, 17 (1): 175-200).
- Fredriksson, U, 2004. Quality Education: the key role of teachers. Education International Working Paper No.14, September 2004.
- Gay, L. R. 1992. (4<sup>th</sup> ed.) *Educational Research. Competencies for analysis and application*. New York: Maxwell Macmillan International.
- Govender, L. 1996. *When the Chalks are Down: a historical, political and social interpretation of teacher militancy*. Pretoria: Human Sciences Research Council.
- Govender, P. 2015. Teachers defy Motshekga over extra tests. *Sunday Times*. (November 29 2015).
- Heystek, J; and Lethoko, M. 2001. "The contribution of teacher unions in the restoration of teacher professionalism and the culture of learning and teaching", *South African Journal of Education*, 21, (4): 222-227).

- Fullan, M. 1998. Educational reform as continuous improvement. Toronto: Ontario Institute for Studies in Education of the University of Toronto.
- Johnson, S.R; and Donaldson, M. (2006) "The effects of Collective Bargaining on Teacher Quality", in Hannaway, J; and Rotherham, A (eds). *Collective Bargaining in Education: Negotiating Change in Today's Schools*. Cambridge: Havard Education Press.
- Leithwood, K. Menzies, T. (1998). The forms and effects of school based management. A Review. *Journal of Educational Policy*, 12 (3): 325-346.
- Loeb, S. and Page, M. 2000. "Examining the Link between Teacher Wages and Student Outcomes: The Importance of Alternative Labour Market Opportunities and Non-Pecuniary Variation", *Review of Economic and Statistics*, 82 (3): 393-408.
- Kerchner, C. T., Koppich, J. E., & Weeres, J. G (1997). *United mind workers unions and teaching in the knowledge society*. Jossey-Bass Education Series: Washington.
- Masumbe, BMC; Cotzer, I. A; (2006) "Curriculum Change in South Africa: Past and Present Scenarios", *Journal of Educational Studies*, 5 (2): 208-228).
- Masondo, S. 2014. Teacher crisis. Sadtu still selling posts. *City Press* (May 17, 2015)
- Mbeki, T. in Rankhumise, P; and Shai, K. "Reflections on the state of Human Security in the aftermath of the February 2007 elections in Lesotho", *Inside AISA*, July 2007.
- Nkomfe, M; and Moll, I. 1990. "Chalks down! Teachers Strike in the Transvaal", *South African Labour Bulletin*, No 14.
- Page, A as cited in Iiboudo, E.K; Compaore, M; Ouedraogo, B; Somba, P; Kabore, O; Oudraogo, A; Kinda, F and Kanore B (Eds). (2001) *Review of Education Sector Analysis in Burkina Faso, 1994-1999*.
- Ratteree, B. H. 2004. Education for All Global Monitoring Report 2005. The Quality Imperative. Washington: The UNESCO.
- Sarantokos, S. 1998. *Social Research* (2<sup>nd</sup> ed.). London: Macmillan Press Limited.
- The History of SADTU: (<http://www.sadtu.org.za/docs/webcontent/2016/sadtu-book.pdf>, accessed, 20/08.2016).
- Van der Berg, S. 2007. Apartheid's Enduring Legacy: Inequalities in Education. *Journal of African Economies*, 16 (5): 849-880.
- Vaillant,D. 2005. Education reforms and teachers' unions: avenues for action. UNESCO: International Institute for Educational Planning; Paris.

## THE WORK-LIFE BALANCE OF ACADEMICS

M.Akif HELVACI

Education Faculty of Usak University, Turkey  
mahelvaci@yahoo.com

Orkide BAKALIM

Education Faculty of Usak University, Turkey  
[Orkide1605@gmail.com](mailto:Orkide1605@gmail.com)

Viyani CAN

Eastern Mediterranean University, Cyprus  
viyankktc@gmail.com

Ümit AKKOYUN

Communication Faculty of Usak University

### ABSTRACT

Work-life balance is individual's achievement of harmonization and balance among working and non-working times. In particular, the work-life balance of academics has become a matter of curiosity over time. The aim of this research is to examine the work-life balance of academicians working at the Uşak University according to some variables. The study group of the study consists of 195 academicians (78 female, 117 male) working at the Uşak University. The analyses show that there is a significant difference between female academicians and male academicians regarding the work-life balance. On the other hand, it is found that the work-life balance of academicians did not differ in accordance with the academic position, field and tenure variables.

### INTRODUCTION

In today's business life, employees strive to balance their work and personal lives. The reason for this is the increasing demand and expectation of individuals in both work and family life with the changing living standards (Bell, Rajendan & Theiler, 2012; Hill, Hawkins, Ferris, & Weitzman, 2001, Kuzulu, Kurtuldu & Özkan, 2013; Munn, 2013 ; Peeters, Montgomery, Bakker, & Schaufeli, 2005). As a result, work has become more influential on the family life and family life has become more influential on the work. This interaction has led to the emergence of work-family conflict and family-work conflict concepts (Cinamon & Rich, 2002; Frone, Russell, & Cooper, 1992). The work-family conflicts arise as a result of the job stress, career changes, long working hours, frequent travel requirements, communication problems at work, and working with difficult bosses that affect the individual's family life. The family-work conflict, on the other hand, arises with the effects of the presence of the small kids, the care of the elderly and intra-family communication on the individual's work life (Chernyak-Hai & Tziner, 2016; Greenhaus, 2002). Researches show that 40% of working parents experience work-family conflict in their lives (Allen, Herst, Bruck & Sutton, 2000). On the other hand, work and family may not always conflict. Based on this perspective, Greenhaus & Powell (2006) advocated the concept of work-family enrichment. Later on, this concept took the definition of "work-family balance" and "work-life balance" in time. "Life" in the work-life balance refers to the entire life of the individual outside the work (Carlson, Grzywacz & Zivnuska, 2009; Haar, 2013). This is the harmonious and balanced maintenance of the individual's work and non-work lives. Researches show a positive and significant relationship between work-life balance and work and marital satisfaction (Brough et al., 2014) and well-being (Frone, 2000), whereas negative and significant relationship with anxiety and depression (Haar et al., 2014), psychological stress (Brough et. al., 2014), and work stress (Behson, 2002).

In the literature, the findings that women have difficulties in establishing work-life balance are more common (Munn, 2013). However, it is noteworthy that studies conducted on this subject mainly focused on female samples (Bee, Baskar & Vimala, 2013, Madipelli, Sarma & Chinnappaiah, Pandu, Balu & Poorani, 2013; Sujata & Singh, 2011; Wattis, Standing & Yerkes). With the changes in the traditional roles of men and women, women have a greater role to play in the workplace and men have a greater role to play in the home life, which makes the establishment of work-life balance more important for individuals from both genders (Emslie & Hunt, 2013). Having difficulty in establishing a work-life balance leads to depression, anxiety, mood disorders and marital problems in both men and women (Ballica, 2010; Frone, 2000, Pandu, Balu, & Poorani, 2013). According to the 3rd European Working Conditions Survey (EWCS) conducted in fifteen European countries,

10% of men and women are having difficulty balancing their work and family responsibilities. In Bulgaria, Romania and Turkey, these figures are up to 22% for males and 25% for females (Paoli & Merllié, 2001). As a result, the work-life balance is crucial for work and life satisfaction of both genders (Haar, 2013).

The working environment is one of the other variables that may influence the level of work-life balance. Particularly those who work in institutions with intense work stress are more challenged to assure work-life balance. The people who are faced this challenge intensively are university employees. The increasing number of university students in recent years, the obligation to allocate time for both teaching and research, student instruction tasks, national and international competition are some of the factors behind this issue of working time. (Bell, Rajendran & Theiler, 2012; O'Laughlin & Bischoff, 2005). According to Kinman & Jones (2008), academics in USA have a very low level of work satisfaction and are experiencing a high degree of work-life conflict. They are seriously considering leaving the academia. Similarly, it is shown regarding the academics working in Australian universities that the stress in the workplace affects the work-life balance negatively, leading to a higher level of work-life conflict and a decrease in psychological well-being (Bell, Rajendran & Theiler, 2012).

There has been an increase in the number of researches on work-life balance in Turkey since 2010 (Akın, Ulukök & Arar, 2017). These studies are mainly in the fields of economy, human resources and business (Ballica, 2010; Demirer, 2011 Kuzulu, Kurtuldu, & Ozkan, 2013, Özen-Kapız, 2002). On the other hand, there is a limited number of studies that investigate the work-life balance of academics. The research done by Apaydın (2011) was one of them; and according to the findings of this research, the members of the faculty can establish a balance between their work and their life, but the work-life balance decreases as the work dependency increases. According to the research made by Coşkuner (2013), perceived workload affects academicians' life satisfaction negatively because of work-family conflict.

### **AIM OF THE STUDY**

It is known that men and women working in our country have difficulty in establishing work-life balances. There is a need for more research particularly on the work-life balance of academics. The aim of this research is to examine the work-life balance of academicians working at Uşak University in accordance to some variables (gender, academic position, field, tenure).

### **METHOD**

#### **Participants**

The sample of the study consists 195 (78 female, 117 male) academicians working at Uşak University. 92 (47%) of the participants were teaching staff (research assistant, lecturer, instructor, expert) and 103 (53%) of them were faculty member (professor, associate professor, assistant professor). 55 (28%) of the academicians have master degree, 27 (14%) of them are PhD candidates and 113 (58%) have PhD degrees. Of these, 44 (23%) of them have tenures of 1 to 5 years; 52 (26%) of them have tenures of 6-10 years; 36 (19%) of them have tenures of 11-15 years; 26 of them (13%) have tenures of 16-20 years; and 37 (19%) of them have tenure of 21 years and over.

#### **Data Collection Tools**

##### **Personal Information Form**

It is developed by the researchers. It consists of questions that contain information about the participants' gender, academic position, field and tenure.

##### **Work-Life Balance Scale**

It was developed by Taşdelen-Karçkay & Bakalım (2017). It consists of 8 items and 7-point Likert type (1 = strongly disagree, 7 = strongly agree). Validity and reliability studies were conducted with 274 (135 women and 139 men) participants consisted of full-time employees from Uşak with an age range 18-61. In this study, the scale was revealed to be in one-factor structure with factor loads ranging from .70 to .89. In the reliability study, Cronbach's alpha value was obtained as .92 and item total correlations were as .64 to .84.

A second study to prove the validity and reliability of the scale was carried out with a total of 356 (186 female, 170 male) employees aged between 21 and 62 years. The confirmatory factor analysis confirmed the one-factor model ( $\chi^2 / df = 2.76$ , IFI = .98, CFI = .96, SRMR = .025 and RMSEA = 07). In this sample, the Cronbach's



alpha value was found as .92 and item total correlations were as .62 to .84. In conclusion, the results of two studies have shown that the work-life balance scale is a single-factor, valid and reliable measurement tool (Taşdelen-Karçkay & Bakalım, 2017).

**Data analysis**

The demographic characteristics of the academicians in the study were examined by frequency and percentage analysis. Their levels related to the work-life balance items are determined by mean and standard deviation. The difference between work-life balance in accordance with gender, academic position, field and tenure variables was compared by t-test and one-way analysis of variance.

**RESULTS**

The findings of the work-life balance of academicians based on the views of academicians are shown in Table 1.

**Table 1. Descriptive Statistics of the Academician’s View on their Work-life Balances**

Items on Work and Life Balance	$\bar{X}$	Ss	Level
1) I can satisfy my own needs and the needs of important people in my life.	5,64	1,30	I agree
2) I can manage my roles related to family and professional life in a balanced manner.	5,42	1,25	I agree
3) I can make enough time for myself by preserving the balance between my professional life and family life.	4,78	1,39	I Partly Agree
4) I feel loyalty to my roles both in my professional life and my family.	5,28	1,29	I agree
5) I manage my professional and family life in a controlled manner.	5,28	1,27	I agree
6) I am successful at creating a balance between my multiple life roles employee/ spouse/mother/father, etc.)	5,02	1,25	I agree
7) I can deal with situations that occur due to the conflict between my roles that are specific to my professional and family life.	5,20	1,25	I agree
8) I am equally content with my roles in my family and professional life.	4,99	1,40	I Partly Agree
<b>Total</b>	5,20	8,53	I agree

As seen in Table 1, the views of the academicians (teaching staff and faculty member) regarding the work-life balance correspond to the "agree" ( $\bar{X} = 5.20$ ) range. Based on these findings, it can be said that academicians at Uşak University can establish a balance between work and life. In consideration with above items, it can be said that the academicians have more difficulties in the items of "allocating enough time to myself by maintaining the balance between work and family life" and "being satisfied with family and work life roles in equal rates" than the other ones.

The t-test results of the academician’s views on work-life balance in accordance with the gender variable are shown in Table 2.

**Table 2. The t-test Results of the Academician’s Views on Work-life Balance in Accordance with the Gender Variable**

Gender	N	$\bar{X}$	Ss	Sd	t	p
Male	78	4,99	1.22	193	-2,31	,021*
Female	117	5.35	,930			

\* $p < .05$  \*\* $p < .01$

As it is seen in Table 2, there is a significant relationship [ $t(193) = ,021, p < .05$ ] between the views of academicians on the work-life balance in accordance with the gender variable. Based on these findings, it is concluded that male academics have a higher work-life balance than females.

The t-test results of the academician’s views on work-life balance in accordance with the academic position variable is shown in Table 3.

**Table 3. The t-test Results of the Academician's Views on Work-life Balance in Accordance with the Academic Position Variable**

Academic position	N	$\bar{X}$	Ss	Sd	t	p
Teaching Staff	92	5.13	1.12	193	-.968	.334*
Faculty member	103	5.27	1.02			

As it is seen in Table 3, there is no significant relationship [ $t(193) = .334, p > .05$ ] of the academicians' view on the work-life balance in accordance with the academic position variable.

**Table 4. The t-Test Results of the Academician's Views on Work-Life Balance in Accordance with the Field Variable.**

Field	N	$\bar{X}$	Ss	Sd	t	p
Social Science	129	5.19	1.008	193	-.119	.906*
Physical Sciences	66	5.21	1.178			

As it is seen in Table 4, there is no significant relationship [ $t(193) = .906, p > .05$ ] of the academicians' view on the work-life balance in accordance with the field variable.

**Table 5. The One-Way ANOVA Results of the Academician's Views on Work-Life Balance in the Tenure Variable.**

Variable	Variance	Sum of the Squares	Sd	Mean of the Squares	F	Sig.
	Intergroup	7,725	4	1,931	1,725	.146
	Intra-group	212,708	190	1,120		
	Total	220,432	194			

As it is seen in Table 5, there is no significant relationship [ $F(4-190) = 1,725, p > .05$ ] of the academicians' view on the work-life balance in accordance with the tenure years variable.

## DISCUSSION

According to the findings of this research, academicians are able to establish the work-life balance. This finding is parallel to Apaydin's (2011) research finding. The employees living in the Uşak province where the research is carried out can reach their homes and workplaces in a short time without experiencing the difficulty of transportation due to the crowded population. This may lead to lower levels of exposure to stress of the big cities. Accordingly, it can be considered that academicians are able to establish work-life balances more easily than those living in big cities. However, the other finding of the research shows that female academicians have more difficulties to establish work-life balance than males. In the literature, there are findings that show that the work-life balance of female employees is lower than that of males (Kuzulu, Kurtuldu & Özkan, 2013; Tausig & Fenwick, 2001). In the research conducted by Coşkuner (2013), women spend more time than their male counterparts on their families and face to more work-family conflicts than male academicians. This situation also adversely affects the life satisfaction of female academicians. This may have been the result of women's greater responsibilities in their home life, such as housework, food and child care. On the other hand, there are also researches in the literature finding no difference between men and women in terms of work-life balance (Haar, 2013, Pandu, Balu, & Poorani, 2013).

In this study, there is no significant difference between work-life balance of teaching staff and faculty member. In Apaydin's research (2011), professors declared having the work-life harmony more than the associate professors and assistant professors. In the study conducted by Kinman & Jones (2008), it has been revealed that both lecturers and researchers have experienced intense work-life conflicts arising from the perceived workload.

According to the other finding of the research, there is no significant difference between the work-life balance of the academicians working in the social sciences and physical sciences. On the other hand, according to the study made by Apaydın (2011), compared to other fields, the work life of the faculty member working in the field of physical sciences adversely affects the family life while the family issues adversely affect the work performance.

The last finding of the research is that there is no significant difference in the work-life balance of the academicians in accordance with their tenure. While no research finding has been seen in the researches conducted with academicians, Dilek & Yılmaz (2016) found that the work-life balance of teachers did not change in accordance with the total working period. In this regard, there is a need for more research findings to be made with academics.

## CONCLUSIONS AND RECOMMENDATIONS

This research was carried out with the academicians working at Uşak University. It is recommended to conduct researches on the work-life balance with academicians in different universities and with different variables and their comparison as well as on the relationship between work-life balances of the academicians and different variables. On the other hand, conducting practical research to increase work-life balance will significantly enrich the literature in this regard.

This research has revealed that female academicians are more difficult to establish the work-life balance than male academicians. This finding is also parallel to many research findings. This may indicate that there is still the pressure of traditional gender roles on women employees. It is recommended that universities provide academicians with seminars and psycho-training on work-life balance, time management and stress management, and with psychological counseling support within the university for the academics.

## REFERENCES

- Akın, A., Ulukök, E. & Arar, T. (2017). Work-life balance: A theoretical research on studies made in Turkey. *Afyon Kocatepe Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 19 (1), 113-124.
- Allen, T. D., Herst, D. E., Bruck, C. S., & Sutton, M. (2000). Consequences associated with work-to-family conflict: a review and agenda for future research. *Journal of Occupational Health Psychology*, 5(2), 278-308. doi: 10.1037//1076-8998.5.2.278
- Apaydın, Ç. (2011). *Relationship between workaholic levels of faculty members and work-life balance and work-family balance*. Unpublished doctoral dissertation, Ankara University, Institute of Educational Sciences, Ankara
- Ballica, S. (2010). Relationship between employees' work-family balance and gender roles perception and personel characteristics: A study at a large scale firm. Unpublished Master's Dissertation, Çukurova University, Institute of Social Sciences, Adana.
- Bee, A. J., Baskar, K., & Vimala, V. (2013). Organisational culture on work-life balance among married women employees productivity. *Indian Streams Research Journal*, 3 (1), 1-7.
- Behson, S. J. (2002). Coping with family-to-work conflict: the role of informal work accommodations to family. *Journal of occupational health psychology*, 7(4), 324. doi: 10.1037/1076-8998.7.4.324
- Bell, A. S., Rajendran, D., & Theiler, S. (2012). Job stress, wellbeing, work-life balance and work-life conflict among Australian academics. *Sensoria: A Journal of Mind, Brain & Culture*, 8(1), 25-37.
- Brough, P., Timms, C., O'Driscoll, M. P., Kalliath, T., Siu, O. L., Sit, C., & Lo, D. (2014). Work-life balance: A longitudinal evaluation of a new measure across Australia and New Zealand workers. *The International Journal of Human Resource Management*, 25(19), 2724-2744. doi: 10.1080/09585192.2014.899262
- Carlson, D.S., Grzywacz, J.G., and Zivnuska, S. (2009), 'Is Work-Family Balance More Than Conflict and Enrichment?' *Human Relations*, 62, 10, 1459–1486. doi: 10.1177/0018726709336500
- Chernyak-Hai, L., & Tziner, A. (2016). The "I believe" and the "I invest" of Work-Family Balance: The indirect influences of personal values and work engagement via perceived organizational climate and workplace burnout. *Revista de Psicología del Trabajo y de las Organizaciones*, 32(1), 1-10.
- Cinamon, R. G., & Rich, Y. (2002). Gender differences in the importance of work and family roles: Implications for work-family conflict. *Sex Roles*, 47(11-12), 531-541.
- Coşkuner, S. (2013). *Work-family conflict as a mediator between work-family characteristics and marital, family and life satisfaction of faculty members*. Unpublished doctoral dissertation, Hacettepe University, Institute of Social Science. Ankara.

- Demirer, S. (2011). *Work-life balance: A research on A group travel agencies in Antalya*. Unpublished Master's Dissertation. Akdeniz University, Institute of Social Sciences. Antalya.
- Dilek, S. A., & Yılmaz, K. (2016). Teachers' workaholism tendencies and work-family balance. *e-Kafkas Eğitim Araştırmaları Dergisi*, 3(1), 36-55.
- Emslie, C. & Hunt, K. (2009). Qualitative study of gender and work-life balance among men and women mid-life. *Gender, Work and Organization*, 16, 151–172. doi:10.1111/j.1468-0432.2008.00434.x
- Frone, M. R. (2000). Work–family conflict and employee psychiatric disorders: The national comorbidity survey. *Journal of Applied Psychology*, 85(6), 888–895. doi: 10.1037/0021-9010.85.6.888
- Frone, M.R., Russell, M., & Cooper, M. L. (1992). Antecedents and outcomes of work–family conflict: testing a model of the work–family interface. *Journal of Applied Psychology*, 77(1), 65–78. doi: 10.1037/0021-9010.77.1.65
- Greenhaus, J. H. (2002). Work-Family Conflict. *Journal of The Academy of Management Review*, 45, 1-9.
- Greenhaus, J. H., & Powell, G. N. (2006). When work and family are allies: A theory of work-family enrichment. *Academy of Management Review*, 31, 72-92. doi:10.5465/AMR.2006.19379625
- Haar, J.M. (2013). Testing a new measure of work-life balance: a study of parent and non-parent employees from New Zealand. *The International Journal of Human Management*, 24, 3305–3324. doi: 10.1080/09585192.2013.775175
- Hill, E.J., Hawkins, A.J., Ferris, M., & Weitzman, M. (2001). Finding an extra day a week: The positive influence of perceived job flexibility on work and family life balance. *Family Relations*, 50 (1), 49–58. doi: 10.1111/j.1741-3729.2001.00049.x
- Kinman, G., & Jones, F. (2008). A life beyond work? Job demands, work-life balance, and wellbeing in UK academics. *Journal of Human Behavior in the Social Environment*, 17(1-2), 41-60. doi: 10.1080/10911350802165478
- Kuzulu, E., Kurtuldu, S., & Özkan G. V. (2013). A research on the relationship between work-life balance and life satisfaction. *Sakarya İktisat Dergisi*, 2(5), 88–127 *The Sakarya Journal of Economics*, 2(5), 88–127.
- Madipelli, S., Sarma, V. V., & Chinnappaiah, Y. (2013). Factors causing work life imbalance among working women--a study on school teachers. *Indian Journal of Industrial Relations*, 48(4), 621-634.
- Munn, S.L. (2013). Unveiling the work-life system: the influence of work-life balance on meaningful work. *Advances in Developing Human Resources*, 15 (4), 401–417. doi: 10.1177/1523422313498567
- O’Laughlin, E. M., & Bischoff, L. G. (2005). Balancing parenthood and academia: Work/family stress as influenced by gender and tenure status. *Journal of Family Issues*, 26(1), 79-106. doi:
- Özen-Kapız, S. (2002). The work-family balance and new approach to equilibrium: The boundary theory. *Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*. 4(3), 139–153
- Pandu, A., Balu, A., & Poorani, K. (2013). Assessing work-life balance among IT & ITES women professionals. *The Indian Journal of Industrial Relations*, 48(4), 611–620.
- Paoli, P., & Merllié, D. (2001). Third European survey on working conditions 2000, European Foundation for the Improvement of Living and Working Conditions. Luxembourg: Office for Official Publication for the European Communities.
- Peeters, M.C., Montgomery, A.J., Bakker, A.B., & Schaufeli, W.B. (2005). Balancing work and home: Demands are related to burnout. *International of Stress Management*, 12 (1), 43–61. doi: 10.1037/1072-5245.12.1.43
- Taşdelen-Karçkay, A., & Bakalım, O. (2017). The mediating effect of work–life balance on the relationship between work–family conflict and life satisfaction. *Australian Journal of Career Development*, 26(1), 3-13. doi: : 10.1177/1038416216682954.
- Tausig, M., & Fenwick, R. (2001). Unbinding time: Alternate work schedules and work-life balance. *Journal of Family and Economic Issues*, 22(2), 101-119.
- Wattis, L., Standing, K., & Yerkes, M. A. (2013). Mothers and work–life balance: exploring the contradictions and complexities involved in work–family negotiation. *Community, Work & Family*, 16(1), 1-19. Doi: 10.1080/13668803.2012.722008