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Message from the Editors

Dear researchers,
I am happy to announce that TOJNED is the rapidly growing journal in the field of education with the support and qualified studies of international researchers all around the world. It is great pleasure for me to present current volume and issue of TOJNED, October 2013 to the academic agenda. I would like to thank Editor and his delegation for the process of the publications. Further to this, I would like to thank authors who shared their valuable research papers to the academic world through TOJNED. Upon the developments of the journal, it is significant to ensure quality by pointing out interdisciplinary papers, methodologies and context to be part of the journal scope. In this respect, we are pleased to get qualified research papers to share in the academic world for the next issues of TOJNED.

October 01.2013
Prof. Dr. Aytekin İŞMAN
Editor in Chief

TOJNED is an international journal that covers valuable research articles from international research agenda. On behalf of the editorial team, I am pleased to present new issue of TOJNED which focuses on interdisciplinary view within its quality and development. Upon the TOJNED scope, this issue covers different researches, methodologies and research contexts.

I would like to thank researchers and editorial team for their contributions to the academic agenda and the issue of TOJNED.

October 01.2013
Prof. Dr. Cem BİROL
Edior

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Academic Misconduct: Student Beliefs and Behaviors at a HBCU

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ABSTRACT

The purpose of this research is to measure the beliefs and behaviors, concerning academic dishonesty, of students at a Historically Black University (HBCU) located in the Southern United States. A literature review suggests that there is no existing work showing a similar study at a HBCU. Our primary goals are to detail student beliefs and behaviors, and to then better understand the relationship between student beliefs about academic misconduct and their own behaviors. This study uses sixteen questions, measuring various academic misconduct actions, previously asked of students enrolled at a Predominantly White Institution (PWI). Our paper then, in part, compares the findings from the PWI survey to those from our HBCU survey. In addition, our work compares student self reported beliefs to their self reported behaviors. Our data indicate that there is incongruence between beliefs and behaviors; students are more likely to take part in misconduct actions than their reported beliefs indicate.

Keywords: *Academic Misconduct, HBCU, student beliefs, behaviors*

INTRODUCTION

Academic misconduct, such as cheating on tests, plagiarizing term papers, and submitting other people's work as original has garnered much attention in the academic literature. Although not restricted to institutions of higher education, the topic of academic dishonesty at the college level has generated a vast amount of work over the last fifty years. Payne and Nantz report that research on academic misconduct has occurred as early as 1941 (1994, p. 2) and Shipley cites work from a 1964 study by Bowers (1964) that found that at least one-half of the students surveyed on 99 campuses reported cheating (2009, p. 40). From student and faculty perceptions (Wilkinson, 2009; Hard, Conway, & Moran, 2006) to studies targeting specific majors and colleges, such as Journalism (Shipley, 2009), Business (Iyer & Eastman, 2006), and Information Technology (Sheard, Markham, & Dick, 2003), scholars have looked at the phenomenon from the United Kingdom (Selwyn, 2008), Turkey (Tas & Tekkaya, 2010), Australia (Wilkinson, 2009), and the United States. Predicting behavior and attitudes (Culwin, 2006; Whitley, 1998) by isolating social (Zimny, Robertson, & Bartoszek, 2008), and psychological (Jordan, 2001) covariates and applying econometric (Bisping, Patron, & Roskelley, 2008) and multidimensional scaling techniques (Schmelkin, Gilbert, Spencer, & Pincus, 2008) serve as the focus of some researchers, while others concentrate on case study methodology (Stephens & Nicholson, 2008) to better understand the context within which students cheat.

Background Literature

According to Shipley the level of cheating differs by college major (2009, p. 40), and Crammer, Etters, and Finn note that there is a relationship between student orientation towards learning or grades and attitudes concerning cheating, with those oriented toward learning more likely to have harsher attitudes about cheating (2006, p. 135). Further, Shipley cites Bowers' (1964), findings that college peers are suspected to have the greatest influence on student's attitudes toward cheating (2009, p. 40). To complicate matters, however, Crammer et al., point out that students may be confused about what constitutes plagiarism and the status of other academic short-cuts (2006, p.

135). As noted in the introduction, there are many models of academic misconduct, each postulating a varied set of predictor variables.

In addition, academic dishonesty is defined in many ways and encompasses many activities. Some researchers identify academic dishonesty as cheating (Niiya, Ballantyne, North, & Crocker 2008; Etter, 2006), while others (Stone, Jawahar, & Kisamore, 2009; Hard et al., 2006) take a broader approach and include plagiarism, data falsification, and other forms of misconduct, as well. In this research, a wide range of activities, as used by Hard et al. (2006), are included under the label of academic misconduct. The sixteen questions used to measure student beliefs and behaviors are replicated from the study by Hard et al, (2006) at a Predominantly White Institution (PWI). The research of Hard et al, (2006) is based on the relationship between personal beliefs and the behavior of peers. There is a body of work that shows that individual beliefs are consistent with perceived peer behavior, and Hard et al, show that "students considerably overestimated the frequency of peer's misconduct" (2006, p. 1076). But what is the relationship between individual beliefs and behaviors? As Stephens and Nicholson discuss, "there are numerous studies in the literature indicating that many students experience belief-behavior incongruity specifically in the domain of academic dishonesty" (2008, p. 636). This incongruity can lead to moral disengagement, or the use of what Stephens and Nicholson call "neutralization devices [that] obscure or even negate one's personal agency by attributing responsibility for one's conduct to others" (2008, p. 636).

Although Crammer et al., find that students at a church affiliated school are likely to rate misconduct as more serious than students at a larger research university, gender might be a confounding variable (2006, p. 149). Nevertheless, the findings of Crammer et al., (2006) serve as a point of interest. Is it possible that religion might play a role in the formation of student beliefs and behaviors when it comes to academic misconduct? Hill investigates the interaction between college life and religious beliefs and states that "religion only works as a deterrent to deviant behavior when the community upholds the religious justifications" (2009, p. 517). Hill expects that in a closed community, such as students in college, "religious life will be more salient" (2009, p. 517). In addition, Bryant (2003) posits that "students may become increasingly committed to spiritual matters during college" (p. 3), and found that there was a greater "commitment to integrate spirituality into their lives" (p. 6) over the course of one year. Directly informing this research, Hill relates that although students who attend HBCUs have moderately lower levels of religious participation, than students at religious schools, i.e., Bible colleges, their participation rate is considerably higher than that of students at nonreligious public and private schools (2009, p. 523). Table 2 shows our student responses to two questions about their religiosity. Over eighty percent identify themselves as *Very* or *Somewhat* religious, and approximately one-third report attending church service at least weekly.

Although there is no direct support in the literature, this research is built upon the conjecture that the role of religious belief is strong at HBCUs and that a robust sense of moral community will possibly temper the academic misconduct beliefs and behaviors of students.

PURPOSE

After examining the literature, one question that comes to mind is, do students at different types of institutions have varying attitudes toward academic dishonesty? Thus, these authors have found only one study conducted exclusively at a Historically Black College or University (HBCU) (Qwunwanne, Rustagi, & Dada, 2010). Furthermore, although Qwunwanne et al., (2010) looked at academic dishonesty at Howard University, the study targeted students enrolled in the college of Business, exclusively, and did not cross academic disciplines.

This research looks at student self reports of beliefs and behaviors concerning academic dishonesty. It takes its lead, in part, from a study (Hard et al, 2006) conducted at a Predominantly White Institution (PWI). Our study borrows from the PWI study by asking the same set of questions, about academic misconduct, to students at a HBCU. Our research is focused on three central questions that we strive to answer with our questionnaire data.

First, we measure HBCU student attitudes and beliefs concerning academic misconduct. We ask about their beliefs and about their behaviors and report the univariate findings. Next, we compare the responses from students at the HBCU to the responses detailed by Hard et al, (2006) of students from a PWI. We are curious to see if self reports of behavior concerning academic misconduct from students at a HBCU differ from students at the PWI. Finally, and secondary to the descriptive findings, we then compare the self reports of beliefs and behaviors at the HBCU to determine if there a difference between student perceptions of honest behavior and their actual behavior.

METHODOLOGY

Two surveys (Form 1, Form 2) were administered concurrently to approximately four-hundred and seventy undergraduate students at a HBCU located in the Southern United States. Approval from the university's Institutional Review Board was gained prior to implementing the survey. Students enrolled in university developmental and core curriculum classes during the Fall term of 2011 were asked to voluntarily participate in the study. Because of the voluntary nature of the survey, responses were not tracked and response rates not calculated. Informal observation indicates that the vast majority of students completed the survey, with only a few students leaving the classrooms during survey administration. The courses selected enroll predominantly first and second year students from all majors.

The survey included items borrowed from an earlier study (Hard et al, 2006) that asks students to rate sixteen academic misconduct behaviors. This research differs, however, from that of Hard et al, (2006) by using a split-form design. The split-form pre-experimental design is used to allow comparison of the two groups. Thus, one-half of the students are asked to rate their *beliefs* concerning each item, while the other half are asked to rate their *behaviors*. The two survey forms are stacked in alternating fashion and then distributed to students in classrooms. In total there are 237 completed Form 1 surveys and 241 of Form 2. Survey Form 1 measures student beliefs, while Form 2 measures student behaviors. On both forms the scale runs from -5 to 5. On the *Beliefs* form, the scale goes from -5 (Completely Unacceptable Behavior) to +5 (Completely Acceptable Behavior) with 0 (Not Really Acceptable but Not Unacceptable, Either) in the middle. On the *Behaviors* form it goes from -5 (Would Never Consider It) to +5 (Have Done It Many Times) with 0 (Might Consider It, But Never have Done It) in the middle.

The questions run the range from minor infractions such as "Realizing during an exam that another student wants to copy from your paper, and allowing that student to copy" to the more serious "Buying papers for the purpose of turning them in as your own work." Demographic information was also collected. Once these data are collected, they are entered into the Statistical Package for the Social Sciences (SPSS) for analyses. Univariate and means test procedures are performed on these data to test for differences between student beliefs and behaviors. The wording for the sixteen questions that measure student beliefs and behaviors are displayed at the end of this *Methodology* section..

Before analyzing the belief and behavior responses, we first compared the two groups to see how closely they matched on basic demographic and student attributes. Tables 1 and 2 show that the two groups (Form 1 – Beliefs, Form 2 – Behaviors) are comparable in their composition.

Table 1: Comparison of Student Attributes

Class Rank*	Form 1	Form 2
Freshman	53.20%	48.50%
Sophomore	32.80%	36.90%
Junior	6.40%	6.90%
Senior	7.70%	7.70%
Mean GPA*	2.97	2.90
Mean Age*	22.34	22.72
*Not Significant at the .01 level		

In terms of class rank, the two groups have a very similar response distribution and a Chi-Square test does not allow us to reject the null hypothesis of no difference between the two samples at the .01 level. Likewise, the mean GPA and mean Age differences do not generate a sufficiently small probability to reject the null hypothesis of no difference at the .01 level.

Table 2: Comparison of Demographic Variables

How Religious*	Form 1	Form 2
Very	33.10%	32.50%
Somewhat	52.10%	52.60%
A Little	12.30%	12.80%
Not At All	2.50%	2.10%
Church Attendance*	Form 1	Form 2
Daily	1.70%	3.00%
Weekly	36.10%	32.20%
Monthly	21.90%	22.90%
Several Times A Year	17.60%	22.50%
Rarely	19.30%	17.80%
Never	3.40%	1.70%
*Not Significant at the .01 level		

Table 2 compares the two groups on two religion oriented questions; how religious the students consider her/him-self and church attendance and, again, the differences are not statistically significant at the .01 level. We do find a statistically significant difference at the .01 level in reported parental income (Table 3).

Table 3: Comparison of Parental Income

Income*	Form 1	Form 2
$15,000 or Less	20.60%	25.00%
$15, 001 to $30,000	26.80%	19.30%
$30,001 to $45,000	19.60%	15.30%
$45,001 to $60,000	15.50%	19.90%
$60,001 to $ 100,000	9.80%	17.00%
$100,000+	7.70%	3.40%
*Significant at the .01 level		

Seaman cautions us that “failing to find difference is not proof of similarity” (1998, p. 405). However, Seaman acknowledges that “some researchers attempt to demonstrate equivalence by showing that the traditional null hypothesis of no difference cannot be rejected” (1998, p. 405). Thus, although not the most rigorous test for similarity, for this first exploratory look, the authors are comfortable, overall, that the two samples are similar enough and move forward with comparing student beliefs and behaviors.

Below are the sixteen survey questions used in this study.

Q1 Planning in advance and then copying from another person's paper or receiving unauthorized aid from another person during an examination.

Q2 Not planning to, but copying from another person's paper or receiving unauthorized aid from another person during an examination.

Q3 Planning to and then using unauthorized materials or devices during an examination or any other form of academic evaluation and grading: for example, using signals, notes, books, or calculators during an examination when the instructor has not approved the instructor has not approved their use.

Q4 Not planning to, but using unauthorized materials or devices during an examination or any other form of academic evaluation and grading.

Q5 Planning to, and then allowing, another person to copy from your paper during an examination.

Q6 Realizing, during an exam, that another student wants to copy from your paper, and then allowing that

student to copy (or not preventing the student from copying).

Q7 Improperly acquiring or distributing examinations for example, stealing examinations before the test period or taking a copy of an examination from a testing room without the permission of the instructor.

Q8 Submitting another person's material as one's own for academic evaluation.

Q9 Preparing work for another student to submit for academic evaluation.

Q10 Working with another student on material to be submitted for academic evaluation when the instructor has not authorized working together.

Q11 Submitting the same work, or substantially similar work, in more than one course without prior consent of the evaluating instructors.

Q12 Using unauthorized materials or fabricated data in an unacceptable exercise: for example, falsifying data in a research paper or laboratory experiment.

Q13 Coping sentences, phrases, paragraphs, tables, figures or data directly or in slightly modified form from a book, article, or other academic source without using quotation marks or giving proper acknowledgments to the original author or source.

Q14 Coping information from Internet websites and submitting it as your own work.

Q15 Buying papers for the purpose of turning them in as your own work.

Q16 Selling or lending papers so another student can turn them in as his or her own work.

FINDINGS

The first procedure conducted is the calculation of the *Belief* response means. Table 4 shows the findings of this analysis by displaying the questions in rank order from smallest to largest mean. A mean of -5 is "Completely Unacceptable," while a mean of 5 is "Completely Acceptable." As the table shows, the three responses with the smallest means – or less unacceptable actions - are Question 8 "Submitting another person's material as one's own for academic evaluation" (-3.90), Question 7 "Improperly acquiring or distributing examinations for example, stealing examinations before the test period or taking a copy of an examination from a testing room without the permission of the instructor" (-3.87), and Question 1"Planning in advance and then copying from another person's paper or receiving unauthorized aid from another person during an examination" (-3.59). Table 4 also shows the percent of *Completely Unacceptable* responses to each of the sixteen actions.

Table 4: Rank Order of Beliefs by Mean Score

Survey Question	^Mean Score Belief	% Responding Completely Unacceptable
Q8	-3.900	67.4
Q7	-3.870	69.2
Q1	-3.590	62.4
Q3	-3.560	62.6
Q14	-3.560	58.0
Q12	-3.550	56.1
Q15	-3.500	59.2
Q5	-3.330	54.9
Q9	-3.300	52.7
Q4	-3.290	55.6
Q13	-3.260	48.7
Q2	-3.220	53.6
Q6	-3.070	48.1
Q16	-2.980	51.7
Q11	-2.430	41.4
Q10	-1.210	23.1

^Scale ranges from -5 Completely Unacceptable to 5 Completely Acceptable

The three belief responses with the largest means – or more acceptable actions - are Question 16 "Selling or lending papers so another student can turn them in as his or her own work" (-2.98), Question 11 "Submitting the same

work, or substantially similar work, in more than one course without prior consent of the evaluating instructors" (-2.43), and Question 10 "Working with another student on material to be submitted for academic evaluation when the instructor has not authorized working together" (-1.21). These findings suggest that students tend to think that premeditated direct actions, e.g., planning on submitting someone else's work, are less acceptable than spontaneous actions, or actions taken by someone else, e.g., letting someone copy their test. Question 10 can be attributed to the popular attitude of 'if we are not told explicitly not to do something, then it must be alright.'

Table 5 shows a similar ranking of responses to the *Behavior* questions in that the order goes from smallest to largest mean. For behaviors, a mean of -5 is "Would Never Consider It," while a mean of 5 is "Have Done It Often." The three questions with the smallest mean – or less likely to be considered - are Question 15 "Buying papers for the purpose of turning them in as your own work" (-3.69), Question 8 "Submitting another person's material as one's own for academic evaluation" (-3.51), and Question 7 "Improperly acquiring or distributing examinations for example, stealing examinations before the test period or taking a copy of an examination from a testing room without the permission of the instructor" (-3.49). Table 5 also shows the percent of *Would Never Consider It* responses to each of the sixteen actions.

The three behavior responses with the largest mean - more likely to be considered - are Question 2 "Not planning to, but copying from another person's paper or receiving unauthorized aid from another person during an examination" (-1.54), Question 6 "Realizing, during an exam, that another student wants to copy from your paper, and then allowing that student to copy (or not preventing the student from copying)" (-1.26), and Question 10 "Working with another student on material to be submitted for academic evaluation when the instructor has not authorized working together" (-.069).

Table 5: Rank Order of Behaviors by Mean Score

Survey Question	^Mean Score Behavior	% Responding Completely Unacceptable
Q15	-3.690	67.8
Q8	-3.510	63.1
Q7	-3.490	63.9
Q12	-3.060	50.6
Q16	-3.020	55.3
Q9	-2.960	54.2
Q14	-2.420	44.2
Q11	-2.150	41.5
Q1	-1.920	39.1
Q13	-1.850	39.2
Q4	-1.730	37.6
Q3	-1.710	38.8
Q5	-1.700	36.1
Q2	-1.540	35.0
Q6	-1.260	31.5
Q10	-0.690	25.0

^Scale ranges from -5 Would Never Consider to 5 Done It many Times

It is interesting to note that not only do similar patterns emerge in terms of premeditated direct actions being less acceptable, but that two of the three most unacceptable beliefs and behaviors are the same. However, when looking at the tables, there does not appear to be an overall pattern in terms of the ranking of beliefs and behaviors. Question 8 "Submitting another person's material as one's own for academic evaluation" generates a mean of -3.90 as belief, and a behavior mean of -3.51 (this belief-behavior gap is addressed in the final section of this analysis). Question 10 "Working with another student on material to be submitted for academic evaluation when the instructor

has not authorized working together," is the action that generates the largest mean as a belief and as a behavior (-1.21 and -.069, respectively) and is more acceptable as a behavior than as a belief.

For the next analysis, we compare the results of our survey to those of a study conducted at a PWI (Hard et al, 2006). In their study, Hard et al, (2006) asked respondents to report their own misconduct using a five point scale that ranged from 1: Never, to 5: Very Often for each of the sixteen misconduct actions. Hard et al, (2006) reported the means for each of the sixteen questions. On our survey, we use the Hard et al, (2006) actions, but ask our respondents to answer on a ten point scale that ranges from -5: Would Never Consider It to 5: Done It Many Times. The results of the comparison are shown in Table 6. In order to make this comparison, we transform the means from each study's survey questions to a standardized format. We accomplish this transformation by mapping each survey scale to a 1-10 scale.

As Table 6 displays, the standard scores from the HBCU are higher across the board than are the scores from the PWI. The three questions that generate the largest differences are Question 4 "Not planning to, but using unauthorized materials or devices during an examination or any other form of academic evaluation and grading" (2.345), Question 2 "Not planning to, but coping from another person's paper or receiving unauthorized aid from another person during an examination" (2.210), and Question 3 "Planning to and then using unauthorized materials or devices during an examination or any other form of academic evaluation and grading: for example, using signals, notes, books, or calculators during an examination when the instructor has not approved their use" (2.190). Questions 2 and 4 speak to the same pattern of acceptance of accidental indirect actions being more acceptable on the part of students at the HBCU.

Table 6: Comparison of PWI and HBCU Students

Survey Question	Mean Score Behavior PWI^	Standard Score PWI*	Mean Score Behavior HBCU#	Standard Score HBCU*	Standard Score Difference
Q1	1.380	0.950	-1.920	3.080	2.130
Q2	1.500	1.250	-1.540	3.460	2.210
Q3	1.440	1.100	-1.710	3.290	2.190
Q4	1.370	0.925	-1.730	3.270	2.345
Q5	1.550	1.375	-1.700	3.300	1.925
Q6	1.730	1.825	-1.260	3.740	1.915
Q7	1.130	0.325	-3.490	1.510	1.185
Q8	1.170	0.425	-3.510	1.490	1.065
Q9	1.250	0.625	-2.960	2.040	1.415
Q10	2.110	2.775	-0.690	4.310	1.535
Q11	1.700	1.750	-2.150	2.850	1.100
Q12	1.520	1.300	-3.060	1.940	0.640
Q13	1.980	2.450	-1.850	3.150	0.700
Q14	1.600	1.500	-2.420	2.580	1.080
Q15	1.150	0.375	-3.690	1.310	0.935
Q16	1.250	0.625	-3.020	1.980	1.355
^1: Never, 2: Seldom, 3: Occasionally, 4: Often, 5: Very Often.					
*Scores standardized into a 10 point scale for comparison purposes.					
#-5 Would Never Consider to 5 Done It many Times					

The responses generating the three smallest differences between PWI and HBCU students are Question 12 "Using unauthorized materials or fabricated data in an unacceptable exercise: for example, falsifying data in a research paper or laboratory experiment" (.640), Question 13 "Coping sentences, phrases, paragraphs, tables, figures or data directly or in slightly modified form from a book, article, or other academic source without using quotation marks or giving proper acknowledgments to the original author or source" (.700), and Question 15 "Buying papers for the purpose of turning them in as your own work" (.935)". It is evident that the same pattern holds in terms of premeditated direct actions as least acceptable. The differences are very small between the HBCU and PWI students

when it comes to these actions and indicate that students, in general, recognize the serious negative nature of these misconduct actions.

When looking at students at a HBCU in comparison to students at a PWI, it is important to keep in mind two important speculations. First, the studies occurred approximately eight years apart, and it is possible that the differences we find between institutions are, at least in part, an artifact of the times. Second, and perhaps the more interesting postulate, is that the HBCU students are more honest about their academic misconduct beliefs and behaviors. Thus, the distinct possibility exists that the culture at the institution is one of being honest about dishonesty. Future studies will answer the questions raised by these speculations if the findings show an increasing trend in the disregard for honest academic behavior, irrespective of institutional setting. It is also possible to imagine future work that measures attitudes toward honesty about dishonesty.

Our final analysis looks at the apparent disconnect between student beliefs and their behaviors. Stephens and Nicholson claim that many students experience belief–behavior incongruity specifically in the domain of academic dishonesty (2008, p. 363). This is certainly the case with the students participating in this study. Table 7 shows the means for each of the sixteen actions. Column one of the table displays the belief mean, while column two displays the behavior mean. Column three of the table shows the difference in the two means. Since both scales range from -5 to 5 (Completely Unacceptable to Completely Acceptable, and Would Never Consider It to Have Done It Many Times, respectively), the raw scores can be compared without mapping to a standard scale. In addition, with only two exceptions, the means for beliefs are smaller than the means for behavior. Since there is a straightforward interpretation of the values, an absolute mean was not calculated. The mean difference is simply the belief mean minus the behavior mean, with larger negative values meaning there is greater incongruity between student beliefs and actions. Larger negative mean differences indicate that students believe the action more unacceptable than their likelihood to consider participating in the action. For the two actions that generate a positive value, student resistance to considering taking an action, is greater than their belief of its unacceptability.

Table 7: T-Test of Differences Between Beliefs and Behaviors

Survey Question	Belief Mean Score	Behavior Mean Score	^Mean Difference
Q1	-3.590	-1.920	*-1.67
Q2	-3.220	-1.540	*-1.68
Q3	-3.560	-1.710	*-1.85
Q4	-3.290	-1.730	*-1.56
Q5	-3.330	-1.700	*-1.63
Q6	-3.070	-1.260	*-1.81
Q7	-3.870	-3.490	-0.380
Q8	-3.900	-3.510	-0.390
Q9	-3.300	-2.960	-0.340
Q10	-1.210	-0.690	-0.520
Q11	-2.430	-2.150	-0.280
Q12	-3.550	-3.060	-0.490
Q13	-3.260	-1.850	*-1.41
Q14	-3.560	-2.420	*-1.14
Q15	-3.500	-3.690	0.190
Q16	-2.980	-3.020	0.040

^Questions 10, 11, 15, 16 assume equal variance.

*Statistically different at the .01 level.

For eight of the sixteen actions, the belief–behavior incongruity is statistically different at the .01 level. In rank order, from largest difference to smallest, the three questions generating the largest statistically significant differences are Question 3 “Planning to and then using unauthorized materials or devices during an examination or any other form of academic evaluation and grading: for example, using signals, notes, books, or calculators during an

examination when the instructor has not approved their use" (-1.85), Question 6 "Realizing, during an exam, that another student wants to copy from your paper, and then allowing that student to copy (or not preventing the student from copying)" (-1.81), and Question 2 "Not planning to, but copying from another person's paper or receiving unauthorized aid from another person during an examination" (-1.68). Interestingly, the greatest incongruence is generated by an action that is counter to the overall pattern in these data. That is, Question 3 describes an action that is premeditated and direct, an action that students find very unacceptable, yet it is an action in which they are more likely to consider participating.

The three questions generating the smallest differences (largest to smallest), and, hence, not statistically significant are Question 12 "Using unauthorized materials or fabricated data in an unacceptable exercise: for example, falsifying data in a research paper or laboratory experiment" (-0.49), Question 15 "Buying papers for the purpose of turning them in as your own work" (0.19), and Question 16 "Selling or lending papers so another student can turn them in as his or her own work" (0.04). Each of these acts (using unauthorized material, buying, and selling) is a premeditated action. Interestingly, none of the actions rank in the top three in terms of unacceptability of belief, or behavior, however student beliefs and behaviors converge in their level of unacceptability on these three items.

DISCUSSION

These data show that student beliefs and behaviors reflect a sense of moral integrity, but also a cognitive incongruity. Although the fact that students are not repulsed by the mere thought of any type of academic misconduct is upsetting to some administrators and faculty, a realist acknowledges that there is a long history of dishonesty on college campuses. The silver lining in these data is that these students consistently rate academically dishonest actions below the level of indifference. On the scales used to measure beliefs and behaviors, a zero (0) is a moral neutral and not one of the sixteen actions is larger than -0.690 (Question 10 as a behavior) Thus, students believe the actions to be wrong, and, although they acknowledge considering taking action, it is not at an unbridled level. It is also the case that academic misconduct that requires premeditated and direct action are viewed as worse offences than actions that are unintended and indirect. This distinction is true for both their beliefs and behaviors.

A key speculation of this research is that the religiosity and strong sense of moral community of a HBCU will temper student beliefs and behaviors when it comes to academic misconduct. To test this conjecture, the self reported behaviors of HBCU students are compared to students attending a PWI. Across the board, the HBCU students reported a greater likelihood of participating in academic misconduct. Clearly, however, the mean scores indicate that, also across the board, academic dishonesty is viewed as a negative occurrence. None of the sixteen actions generate a raw mean above zero (0 – might consider it), and, in terms of standard score, the highest score generated is a 3.080. The roughly eight years between when the Hard et al, (2006) data were collected, and when the data for this research were collected, is also a confounding factor. It is possible that student beliefs and behaviors have changed during this time span, with academic dishonesty becoming more acceptable.

Perhaps the most intriguing finding from these data is that there is, indeed, a very strong incongruence between student beliefs and behaviors. Actions that students rate as unacceptable in terms of their beliefs are not rated as severely negative in terms of their behaviors. Reflecting on the "neutralizing devices" detailed by Stephens and Nicholson (2008), the premeditated and direct actions identified in the data take on a new hue. Thus, students are clearly exhibiting deflective behavior by rating academically dishonest actions as more severe when conducted by someone else.

As a final thought, the gap between student beliefs and behaviors is a curious one, and speaks to the delicate psychology of the human mind. Hutton points out "being able to get away with cheating helps students justify it. Unfortunately, cheaters are rarely caught—less than 2 percent, according to Ralph Wexler, vice president of the nonprofit Joseph and Edna Josephson Institute of Ethics" (2006, p. 171). Students can recognize misconduct, and even be appalled at the thought of it, but, as the old saying goes, 'actions speak louder than words.'

There are more questions raised by this research than answered. Future work can address the role of religion and other variables in forming student beliefs and behaviors. Furthermore, a single form survey design asking respondents to answer each of the sixteen questions for both beliefs and behaviors will provide greater depth to the data and allow for advanced analysis into the phenomenon.

CONCLUSION

This research has provided an overview and insight into beliefs and behaviors of students at a HBCU on academic misconduct. It presents the findings of a survey measuring student beliefs and behaviors concerning sixteen

academic misconduct actions. The mean scores for these sixteen behavior actions are compared to student scores collected at a PWI nearly ten years ago and suggest that most misconduct actions are viewed in a negative light, both in belief and behavior. However, upon mapping the two sets of means to a common scale, the students in this study are more lenient in their behaviors than the students of the earlier study.

The findings from this research also show that student beliefs and behaviors of acceptability vary by action, with premeditated and direct actions being less acceptable and actionable. In addition, there is a clear incongruity between what students say is morally unacceptable and their behaviors. Overall the study has contributed to the discussion of academic misconduct on the part of students by examining the role that type of institution plays in the manifestation of self reported beliefs and behaviors.

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Anxiety as Predictor of Aspiration among Academic Achievers

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ABSTRACT

The present research aimed at to measure the relationship between anxiety and aspiration among academic achievers. A purposive convenient sample consisted of 200 students with average age 15 years of both gender; 100 female students (high academic achievers =50 , low achievers = 50) and 100 male students (high academic achievers = 50, low academic achievers= 50)were taken from Higher secondary schools of Abbottabad. Taylor manifest anxiety scale (Taylor & Spence,1953) along with Study-Habit Scale(Ansari,1983) were administered on the sample. Analysis of results revealed that the pattern of achievement of a student depends on his/her aspiration level and anxiety has association with level of aspiration in students. Study further highlighted that achievers tend to have considerably higher achievement scores have higher aspiration as the result of perceived high anxiety. Students with low achievement scores have lower aspiration as the result of perceived high anxiety. Least-square line of Regression with achievement status as the outcome of aspiration and anxiety as the predictor variable indicated good model of fit showed that results indicate there was positive significant relationship between students' high level of academic achievement and anxiety. The study filled some identified gapes in literature and tries to stress the need for more research on this topic.

Keywords: *Anxiety, Aspiration, low achievers and high achievers*

INTRODUCTION

Examination stress and test anxiety are pervasive problems in modern society. Every year, millions of students underperform in school and university because of heightened test anxiety, which is set of phenomenological, physiological and behavioral responses that accompany concern about possible negative consequences or failure on an exam or similar evaluative situation (Zeidner, 1998).

Many psychologists are often interested in knowing the factors that cause individual differences in academic performance individually. Anxiety as the achievement of effort is now seen as possible factor that affects a person's academic ability. It varies markedly from one individual to another. Thus, some individuals will be relatively calm when it comes to completing a test, whilst others will generally perceive examinations as more dangerous or threatening and experience more intense levels of state anxiety when taking tests (Spielberger & Vagg, 1995).

Aspiration of the students is a term used frequently in education. Early research helped us understand the aspirations, as an expression of the will to achieve and improve. Aspirations can be defined as the student's ability to identify and set goals for the future, while breathing in the present to work toward those goals (Quaglia and Cobb, 1996). This view the aspirations of students is the only one that combines the components of this motivation (inspiration) in the future (ambitions).

There is considerable research on the association of the results and academic motivation (cited in Hornery,

Craven, Yeung, & Ali, 2008) for high school students, two important academic results are as follows: aspirations of high grades and the desire for further education, these aspirations are an additional engine that could affect student motivation and academic achievement. According to McInerney, Yeung, and McInerney (2001) a sense of purpose of learning is an important psychological construct that provides two aspects of the effort, namely anxiety and motivation. There is the traditional Chinese students and their parents believe in the traditional thinking of strong associations with the aspirations of work and effort (Tsang, 1992). An aspiration level can be interpreted as a result, it takes a special position in the decision process. Topic of code in the claim level results as the successes and results below the level of aspiration as a failure. It values the overall probability of success and the total probability of failure(Diecidue and Van de Ven, 2008).

Achievement aspiration is believed to be one of the driving forces for the development of a concept or idea and yours is like a virus to spiritual people to be competitive, work hard and causes more resistance. Educational aspirations relating to the early presentation of their own academic abilities and the highest level of education of individuals expected to achieve (Furlong & Cartmel, 2005).

Educational aspirations were developed early in a student's academic career and are generally theorized to influence academic achievement is improving the ability to participate in educational opportunities. Students who have high academic aspirations are more likely to take advantage of educational opportunities that can lead to academic success. Also, students with low academic aspirations are less likely to take advantage of these opportunities, thus limiting their future educational opportunities (Arbona, 2000).

Achievement is definitely as a result of emotional conflict between striving for success and avoiding failure (Covington, 2004; Heafner ,2004*).* If a student does not feel afraid he will not be able to do work harder to achieve the goal (Seligman, 2002). As aspiration for success has been the focus of a large amount of research in studies of personality, has a way to measure work motivation has become a source for researchers to explore their representation in the population (Pigatt, 2009).

The most common technique for high academic achievement is the skills of time management, homework, get help when needed and build a relationship with the teachers, and reading. Time management involves organizing school supplies, self-efficacy, control beliefs, anxiety and aspirations and beliefs that maintain the behavior towards a particular goal (as cited in Creasey, Jarvis & Knapcik,2009).

Why an individual completes a task, the value component of motivation focuses on the reasons why students become involved (or not involved) in an instructional activity (Pintrich & DeGroot, 1990). It defines students' beliefs about the importance or value of a task and why students approach or avoid a task (Brophy, 1983). Self-worth theory rests upon the perception that students are motivated to establish, maintain, and promote a positive self-image (Covington, 2000).

Stipek (1997) found that there is a personality dimension that is directly associated with greater success in education, to feel the need for individual achievement. And one of the perennial or in other words, continuous education problem a lack of motivation. The only needs that will be relevant here will be those that the absence of the condition is also motivated by the situation.

Although many studies have been conducted, one conclusive research work is a meta-analysis study conducted by Covington, Omelich, and Schwarzer (1986) results support the anxiety resulting from the disruptive effects of perceptions of reduced capacity, instead of the disturbing influence of diffuse emotional arousal.

Hernandez (1994) examined the best predictors of academic success was the ability to self-concept and educational aspirations. High performance grew in self-concept of ability and learning aspirations in relation to literacy skills. Brown, Robinson, and Kurpius (1997) results suggest that the academic preparation and aspirations, academic performance and interaction with the best difference between faculty and staff students who persisted in school and those who do not.

Mousavi, Haghshenas, and Alishahi (2008) identified the causes of poor school performance included poor grades or down as a result of a yield spread ability, the early repetition lacks school, disinterest in learning, low self-esteem, anxiety, failure to complete school or at home, disruptive behavior and school dropouts.

Bendura, Barbaranelli, Caprara, and Pastorelli (1996) analyzed the children's belief in their efficacy to regulate their own learning and learning outcomes in turn contributed to student success both independently and through the promotion of high educational aspirations and prosocial behavior and reducing vulnerability to feelings of depression.

Heafner and McCoy (2001) study found that feelings of effectiveness and therefore motivation to switch tasks is maximized not only by the amount of success, but manages the difficult tasks optimally. In other words,

motivation depend on the best fit between difficulty and skill. It was also found that high self-perceived academic competence was positively correlated with GPA (weighted average, a measure of performance).

Although external motivation was negative predictive of academic success for young Indian immigrants in Canada. There was no significant predictor of academic success of Indian youth in India (Areepattamannil, Freeman, & Klinger, 2011).

Differences in the anxiety level of education were also related to differences in study habits, and these in turn linked to the GPA. Results recommend the use of specific scales, rather than general anxiety as predictors of academic performance and involve learning habits as a process of mediation can (Otello & Patricia, 1969).

Culler and Holahan (1980) studied quality of study habits and how much study time positively related to academic performance, while the missing classes and delay test was inversely related to performance. The results are discussed in terms of dominant interference model of test anxiety. McKeachie, Karabenick, Wilbert, and Lin (1998) found the exact relationship between test anxiety and self-regulation in students' motivation and use of learning strategies.

Yeunga and McInerney (2005) studied Grade 7 students were significantly higher in the direction of effort and work and career aspirations that from 9 to graders, and higher scores in praise orientation than11th students. The apparent decreased motivation may from Grade 7, especially in the direction of work and effort, both related to a mastery orientation dimension that was supposed to be a major driving force for excellence, requiring immediate attention students' motivation in college classes in the secondary.

Objective

To investigate the relationship between anxiety and aspiration among Pakistani students.

Hypotheses

1. There will be positive correlation between anxiety and aspiration among high achiever students.
2. There will be negative correlation between anxiety and aspiration among low achiever students.
3. There will be likelihood that students tend to have considerably higher achievement scores have higher aspiration as the result of perceived high anxiety.
4. There will be likelihood that students tend to have considerably lower achievement scores have lower aspiration as the result of perceived high anxiety.

Operational Definition of the Variables

The study has following variables:

Anxiety

In the present research anxiety is operationally defined as the score on anxiety scale (Taylor & Spence,1953).

Aspiration

Aspiration is an expression of the desire to achieve and improve. It's a level of motivation that overcomes task complexity with perpetual efforts and push one's to work toward those goals. Aspiration is operationally defined as scores obtained on study Habit and attitude scale(Ansari, 1983).

Academic Achievement

Academic achievement is operationally defined as scores obtained by the students in 10th Grade of Higher Secondary School Examination conducted by Federal board.

High achievers

High achievers are those students receiving "A" grade in 10th class of Secondary School Examination conducted by Federal board. They generally stand in top ten positions in the school and having high aspiration for becoming highly successful.

Low achievers

Low achievers are those students who obtaining "C" grade in 10th class of Secondary School Examination conducted by Federal board. They generally remain in lower ten positions in the school and having low aspiration for goal achievement with respect to academic accomplishment.

METHODOLOGY

Research Design

Crossectional survey design was employed in this study

Sampling Technique

Purposive convenient sampling technique was used.

Sample

Participants for the study were selected in 2011, 11th grade classes from Higher secondary schools in Abbottabad and Havellian were included in the investigation comprising a sample of *N* = 200 students. At the time of the measurement occasion (June 2011), students were on average 15 years old with both gender, 100 female students (high academic achievers with Grade A =50 , low academic achievers with Grade C = 50) and 100 male students (high academic achievers with Grade A = 50, low academic achievers with Grade C = 50).The list of high achievers and low achievers was got from the clerical staff of principal of the respective schools.

Research Tools

1. **Taylor manifest anxiety scale:** This scale contains 50 items and response category is dichotomous consisting of true and false. Code of 1 is assigned to true and 2 is assigned to false. Higher scores indicate high level of anxiety.

2. **Study-Habit Scale:** Another instrument was" Study-Habit Scale" developed by Ansari (1983) for measuring the student's aspiration level such as completion of school assignments, understanding of academic concepts and frustration caused by mismanagement of time during the academic session. Questions were posed in different ways to conclude the techniques of high academic achievement. The most common technique for high academic achievement is the skills of time management, homework, get help when needed and build a relationship with the teachers and reading. Time management involves organizing school supplies, making to do lists, prioritizing and planning. There are 31 items with five response options. Five response categories of points used for each statement, such as 5 = strongly agree, agree = 4, uncertain = 3, disagree = 2, disagree = 1 for positive valence part while the negative valence items were counted in the reverse order. Results showed satisfactory reliability that is .747 and .836 for the both scales respectively.

Procedure: Intention is to check the anxiety and aspiration level of the students. Taylor manifest anxiety scale and Study-Habit Scale was used to collect data. For data collection respondents were personally approached by the researcher and questionnaire were distributed individually in face to face fashion. Clear instructions were prepared for the respondents. They were requested to go through the general instructions first and then to respond. The respondents were asked to decide about agreement with the statements and mark the relevant response category honestly. The questionnaire was distributed randomly to the subjects with request to complete and return it. The cooperation from institution teachers was remarkable.

RESULTS

For the purpose of analyzing the result through statistical procedure it was subjected to various kind of analysis. Results of data analysis are in the forms of tables given below.

Table 1 Relationship between Anxiety and Aspiration of high grade students (N=100)

	Anxiety	Aspiration
High Achievers	0.550	0.250

***P< 0.001; **P< 0.006

Above table indicates that there is positive significant relationship between students high level of academic achievement and anxiety (r = 0.550, P< 0.001). Students with high achievements also showed significant positive correlation between their academic achievement and motivation at

10th school level (r = 0.250 , P < O.006) and presently studying at 11th level in Higher secondary school.

Table 2 Relationship between Aspiration and Anxiety of low grade students (N =100)

	Anxiety	Aspiration
Low Achievers	0.762	-.176

***P < 0.001, *P < 0.04

Above table indicates that there was positive significant relationship between students low level of academic achievement and anxiety (r = 0.762, P< .001). Students with low level of academic achievement (academic grade) showed negative significant correlation between their achievement and motivation level (r = -0.176, P < 0.04) in (10th grade) and presently studying at 11th level in Higher secondary school.

Table 3 Regression Analysis Anxiety as Predictor of Aspiration among High Achievers (N=100)

Predictors	B	T	P
Anxiety	0.25	2.82	.05

F = 12.45, *P < 0.05, R^2 = 0.20, Adjusted R^2 = 0.19

Above table revealed that Regression measures anxiety is predictor of aspiration among the students who obtained grade "A" in (10th grade) and presently studying at 11th level in Higher secondary school. Findings also include the β, t, and p values of the test and significance level is also shown in table. This is satisfactory.

Table 4 Regression Analysis Anxiety as Predictor of Aspiration among Low Achievers (N=100)

Predictors	B	T	P
Anxiety	-0.267	-2.744	0.007

F =7.53 , **P < .007 , R^2 = 0.071 , Adjusted R^2 = 0.062

Above table revealed that anxiety is not the significant predictor of aspiration / motivation among low achiever (students who obtained "C" grade in 10th). Table also showed that students' aspiration /motivation decreased as their level of anxiety increased. Regression Analysis Anxiety as a Predictor of Motivation among high Achievers Findings also include the β, t, and p values of the test and it indicates that anxiety is not significant predictor of motivation among high academic achievers

DISCUSSION

This study was conducted to investigate anxiety and aspiration among the students in schools with high and low achievement, although the relationship between anxiety and motivation was based on academic achievement were also examined. The results reveal that students made significant efforts who have obtained A grade in Matric showed a significant positive correlation between their performance and aspiration/motivation in relation to their academic success in school (r = 0.250, P <O.006) (see Table 1). This finding is also similar to Schunk (1991) suggest that the achievement was related to more comprehensive general motivation and ambition. In connection with this study, previous researchers (e.g., Anis-ul-Haque, 1998 ; Sideridis, 1998) stressed the usefulness of self-efficacy in predicting the outcome of motivation that played a major role in student success.

The aspiration of students is believed to have a significant influence on learning outcomes. Previous researchers (e.g., Jayanti, 2008 ; Urhahne, Chao, Florineth, Luttenberger & Paechter, 2011) also confirms that educational aspirations may be an important factor in predicting academic success. There is considerable research on the association of the results and academic motivation (McInerney, Roche, McInerney, & Marsh, 1997; Schunk, 1991; Yeung and McInerney, 2005; Hornery, Craven, Yeung, & Ali, 2008) for high school students these aspirations are an additional engine that could affect student motivation and academic achievement.

The results of recent research shows that there was positive significant correlation between the level of student achievement and anxiety (r = 0.550, P < 0.001) Table 1. Yousafi, Abu Talib, Mansor, Juhari (2010) also confirmed the same relationship between test anxiety and academic performance among adolescents in Iran respondents from more than 400 students (200 boys and 200 girls), the result shows that there is a significant correlation between test anxiety and academic performance among young students.

In the second analysis the results showed that there is a negative relationship between educational achievement and motivation($r = -0.176$, $P < 0.04$) with high level of anxiety($r = 0.762$, $P < 0.001$) among the students who have obtained C grade in Matric(Table 2). Some past studies have more or less obtained the same findings. Mohsen and Mansoor (2009) examines the significant negative correlation between test anxiety and academic performance, after a study of 110 students from the University of Isfahan. The results with regard to educational achievement are also in line with those obtained from other studies (e.g., Mousavi, Haghshenas, & Alishahi, 2008) all have reached the conclusion that educational achievement and test anxiety level have a reverse ratio. It means that as test anxiety level increases, educational achievement decreases and vice-versa. Present results are consistent with studies of Jayanti (2008) concluded that educational aspirations may be an important factor in predicting academic success. The educational aspirations of indigenous lower freshmen are minority contributes significantly to the problem leads to lower academic performance. This finding is also similar to Eskeles, Fleming and Gottfried (2001) which was examined in a longitudinal study of elementary through high school years found a combination of these two aspects of continuity points of motivation of these was in the beginning of their schooling at special risk.

Results indicate that there was positive significant correlation between the low academic achievement and anxiety($r = 0.762$, $P < 0.001$). The current conclusion is supported by Elliot and McGregor (1999) also found that test anxiety were documented as a mediator of the negative relationship between performance avoidance goals and exam performance. Covington, Omelich & Schwarzer (2005) suggested that anxiety is not a uniform response to perceived threat, but rather a number of interacting factors, whose relationship with the individual performances alter the development of a test event to the next. The results support anxiety resulting from the understanding that the interfering effects of reduced ability of perceptions, rather than the influence of emotional arousal embarrassing transmissions.

In the third analysis to test hypothesis 3 regression analysis was performed on the students' aspiration for academic achievement in order to evaluate whether the level of anxiety predicts aspiration/motivation that would result in high grade. It was assumed that there will be likelihood that students tend to have considerably higher achievement scores have higher aspiration as the result of perceived high anxiety. Table 3 ($F = 12.45$, $P < 0.05$, $R^2 = 0.20$, Adjusted $R^2 = 0.19$) showed that anxiety is a predictor of aspiration among high achievers (students with "A" Grade at 10^{th} class). Previously, researchers are investigating the academic success has been the best predictors of educational aspirations in relation to effective and sustained (e.g., Hernandez, 1994; Brown, Robinson, & Kurpius, 1997).This result is supported by Hodapp (1989), who has done research on a group of 91 (grade 7) students and 134 (corresponding to graduate students), students in elementary school. The results support the concept of anxiety performance relationship as an interdependent system. Piedmont (1988) study indicates that the positive effects of achievement motivation was constant regardless of the situational manipulations. But sometimes situations facilitated performance in additive ways a concern had a differential effect on performance depends on levels of achievement motivation. Vesta (1961)also confirmed that educational aspirations of students may affect what they learn in school and their eventual success in academic. Aspiration is assumed to have both energizing and directive effects on performance often may be attributed to learning.

To test the hypothesis 4 regression analysis was performed on the students' aspiration for academic achievement in order to evaluate whether the level of anxiety predicts low aspiration/motivation that would result in low grade. It was assumed that there will be a risk that students tend to have scores of success is dramatically lower than the result of anxiety is considered high. Table 6($F = 7.53$, $P < .007$, $R^2 = 0.071$, Adjusted $R^2 = 0.062$) showed that anxiety is a insignificant predictor of aspiration among low achievers of high school students who received grade "C" in 10^{th} class. The current conclusion is similar to the finding of Cochinwala and Ismail (1986) studied the curvilinear relationship between anxiety and academic achievement of 300 Pakistani youths (male and female). In the same context, Vogel and Collins (1989) believe that students suffering from test anxiety of high and low test anxiety will lower academic performance. In the same context, Marjoribanks' (1988) results support the concept of anxiety performance relationship as an interdependent system. Therefore, these students with moderate levels of test anxiety perform better. Bouffard, Vezeau and Bordeleau (1998) suggest that the greater insight and increased motivation can also be created following the acquisition of a differentiated perception of the ability of early adolescence.

To test the hypothesis 5 regression analysis was conducted on the academic achievement of students in order to evaluate the effect of aspiration on academic performance. Table 5 ($F = 7.53$, $P < 0.012$, $R2 = 0.062$, adjusted $R2 = 0.053$) reveled that motivation /aspiration is an important predictor of high performance among students who have received (A) Grade (Class 10).

The study is supported by Campbell (2007) who also believed in the theory of motivation system that is a valid indicator of performance. Dweck and Carol (2009) also found that motivational processes affect the formation of a child, transfer and use of knowledge and skills. Nichols, Kotchick, Barry,and Haskins (2009) results showed that the average American male African use of community resources was significantly related to their positive and educational

aspiration. Eccles (2004) also agreed that high self-perceived academic competence was positively correlated with GPA (weighted average, a measure of performance). Piedmont (1988) results showed that the positive effects of achievement motivation was constant regardless of the situational manipulations. But sometimes situations facilitated performance in an additive manner. Anxiety had a differential effect on performance depends on levels of achievement motivation. Although Kurita and Zarbatany (1991) agree that motivation is decreased, in their teens, their results suggest that the decline in motivation occurs only up to grade 9. Empirical data support the hypothesis that negative effects of performance approach orientation may be due to the presence of avoidance motivation. Sideridis (1998) suggest that dichotomizing performance goal orientation is involved in a good understanding of the processes associated with motivation to succeed, and depression. On the other hand low achievement of the students is seen as a personality trait that distinguished students based on their tendency or taking things work well and compete against a standard of excellence (Vigfield & Eccles, 2002).

Urhahne, Chao, Florineth, Luttenberger, and Paechter (2011) realised that students were satisfied with the low achievement and assumed that students have learning motivation below their overrated classmates.

CONCLUSION

Present study was conducted on school students studying at secondary level from science and arts group in different schools of Abbottabad. Anxiety emerged as a significant predictor of motivation/aspiration in high achievers and insignificant predictor in low achievers. The students who had been overloaded anxiety engaged in healthy habits and resultantly greater motivation for studies that brought high scores among the high achievers and vice versa with low achievers. In high academic achievers factor of aspiration was also studied as the skills, strategies and habits of high academic achievement that contributes to the maintenance of " A" grade at Matriculation level.

On the other hand, regression analysis also assured that high level of anxiety reduces students' educational aspiration such as time mismanagement, incomplete homework, least bother to get help when needed and build a relationship with the teachers and planning for reading. Such study habits accumulate some level of anxiety or stress regarding upcoming exams, papers or presentations and this examination anxiety generally causes decrements in academic performance.

The results support the concept of anxiety and academic performance relationship as an interdependent system. Study indicates that the positive effects of achievement motivation was constant regardless of the situational manipulations. But sometimes situations facilitated performance in additive ways a concern had a differential effect on performance depends on levels of achievement motivation. Result also confirmed that educational aspirations of students may affect what they learn in school and their eventual success in academic. Motivation is assumed to have both energizing and directive effects on academic performance often may be attributed to anxiety.

Limitations & Suggestions

The major limitation of the study is age range of the participants as all the data was drawn from higher secondary school and college students. Secondly, data was only collected from educated boys and girls. The results of the study could be more generalized by taking a broad based sample of earlier age range from school because the onset of social anxiety takes place in early adolescence.

Implications

The theoretical implication of this study rests in its contribution to two areas of psychology i.e., Education and Developmental psychology. And practical implication of this study seems to that it points out that aspiration significantly affects the achievement level of adolescents. This study can be helpful for children, parents and teachers to know that so anxiety is also hurdle in their academic achievements and success in life, so they must make effort to overcome it.

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College Readiness and Black Student Performance: Disaffirmed Equity

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ABSTRACT

Through a myriad of legislative mandates, College Board endeavors, as well as state and federal incentive programs, efforts to close the achievement gap are visible. As the result of these initiatives, Black students' involvement in Advanced Placement has increased. However, Black students do not show as much improvement in their Advanced Placement program access and equity as do Hispanic and other student groups. Amid the lens of critical race theory and human capital theory, interest convergence emerges to suggest why a society should educate all of its citizens equally.

Keywords: *readiness*, *black student*, *performance*

INTRODUCTION

According to the literature, negating the ability to transition from high school to college and careers is the presence of serious issues such as (a) inequalities in level of education among some ethnic groups, (b) high school dropout rates, and (c) the persistent achievement gap in postsecondary attainment. Several researchers (Dewey, 1966; Klarman, 2007; Ladson-Billings, 1998) suggested that perhaps the democratic privileges and the civil rights of Black citizens in the United States may be violated. Dewey (1966) proclaimed that a democratic education is a process of transforming individuals from powerless to powerful—from uninformed to informed. In addition, Dewey asserted that a democratic society promotes equality among its members through education for all. Furthermore, Neubert (2010) determined that a democratic education cannot ignore systemic conditions of inequalities and exclusion of individuals and groups. Specific to Black citizens, Klarman (2007) and Ladson-Billings (1998) pointed out the legality of equality in education and how the civil rights of Black people have been denied or hindered by the ruling class in the United States.

Consequently, as one of the most widely recognized pathways to academic equality and college readiness, the Advanced Placement (AP) curriculum is used throughout the United States. Researchers (e.g., Davis, Joyner, & Slate, 2011; Dillon, 2007) implied that participating in AP programs is an indication of students' ability to transition to postsecondary education. In addition, Davis et al. (2011) asserted that AP has grown in much greater proportions than other college preparatory programs. Specifically, Dillon (2007) declared that in 2006, approximately 62%, 15,000 of the 24,000 high schools in the United States offered one or more AP programs. The 2006 percentage represented a 5% increase from the 2000. Nonetheless, students who need the experience of rigorous coursework, particularly minority students, are less likely to have access to this type of curriculum (Alliance for Excellent Education, n.d.; Dillon, 2007). Accordingly, this article contains an introduction, and a review of literature on (a) condition of college and career readiness in the United States, (b) Advanced Placement, (c) Advanced Placement initiatives by state, and (e) theoretical framework.

College and Career Readiness

The consensus among researchers (e.g., Barnes & Slate, 2011; College Board, 2012b; Lavin-Loucks, 2006; Trimis, 2009) is that a large number of high school graduates are not college ready. Precisely, the absence of college preparedness suggests a gap exists in what students learn in high school and what is expected when they reach college (College Board, 2012d; Education Week, 2011; THECB, 2006; Trimis, 2009). Hence, the Council of the Great City Schools and ACT, Inc. (2007) asserted that students who are prepared at a level equipping them to "enroll and succeed, without remediation, in a credit-bearing first-year course, at a two-year or four-year institution, trade school, or technical school are said to be college ready" (p. 7). As defined by Menson, Patelis, and Doyle (2009), college-ready students are those students who have participated in college level courses in high school and exemplify (a) detailed knowledge about the subject, (b) good study habits, (c) research skills, and (d) a higher level of thinking. Conley (2008a) classified college readiness as being academically and socially prepared by exhibiting behaviors that promote successful achievement on a post-secondary level. Conley (2008a) defined academic preparedness as having the cognitive and meta-cognitive abilities, which includes "analysis, interpretation, precision and accuracy, problem solving, and reasoning" (p. 24). Additionally, Conley (2008b) determined that behaviors such as self-control, persistence, time management, and study habits also contribute to college readiness.

Moreover, to become college ready, all high school students should be involved in at least four processes: (a) strenuous core coursework; (b) a positive student-centered learning environment; (c) group learning and social interaction; and (4) college preparatory curriculum (Martinez & Klopott, 2005). As such, the level of high school training impacts students' achievement on standardized tests, high school assessments, and overall success in college and career training (ACT, Inc., 2005; College Board, 2010b). Appropriately, Barnes and Slate (2011) investigated over a 3-year period (i.e., 2006-2007, 2007-2008, and 2008-2009 academic years) college readiness rates and academic achievement gap in reading, math, and both subjects for Black, Hispanic, and White students in Texas. Using the TEA's Academic Excellence Indicator System, Barnes and Slate (2011) established that Black and Hispanic students' college readiness increased over the three academic years. However, Black and Hispanic students continued to lag behind White students on all measurements.

Although Black and Hispanic students in Texas experienced a steady increase in their college readiness over a 3-year period, the differences in this achievement when compared to White students continue to widen for Black students. Therefore, Barnes and Slate (2011) corroborated previous research illustrating the college readiness gap between Black, Hispanic, and White student groups. Subsequently, Barnes and Slate (2011) uncovered statistically significant differences in all of their 27 college readiness analyses, with effect sizes ranging from small to large.

In a similar study, Moore et al. (2010) explored college ready graduate rates of all Texas students for the 2006-2007 school year. The researchers included 1, 099 high schools in their analysis of students' scores in math, reading, and in both courses. Overall, 33% of all students were considered ready for college (Moore et al., 2010). A small to large effect size was revealed among Black, Hispanic, and White students in math, reading, and both courses (Moore et al., 2010). However, a large effect size (1.11) was indicated in the pairwise comparison White students to Black students in reading (Moore et al., 2010). Similar effect sizes (0.93) were revealed in comparing White students to Hispanic students. For math the pairwise comparison exposed a wider gap between White and Hispanic students with a large effect size of 1.22, and when White students were compared to Black students, an even larger effect size of 1.88 was noted (Moore et al., 2010).

Engaging a sample of 1,099 high schools, Combs et al. (2010) examined gender differences in college readiness as measured by students' achievement on math, reading, and both courses for Texas students during the 2006-2007 school year. Also, gender differences were investigated based on students' outcome on SAT and ACT exams for both the 2005-2006 and 2006-2007 school years. In addition to reviewing differences in criterion scores, Combs et al. (2010) investigated the number of girls and boys who took the exams. Statistically significant differences were present in college ready scores for boys and girls in math, reading, and both subjects (Combs et al., 2010). For both subjects, less than 33% of girls and boys were deemed college ready for 2006-2007 school year.

In the comparison of boys' and girls' in reading, girls were statistically significantly more college ready than boys with a Cohen's *d* of 0.68 or moderate effect size (Cohen, 1988; Combs et al., 2010). A different finding was noted for math whereas boys held a higher college readiness rate than girls with a Cohen's *d* of 0.50 or moderate effect size (Cohen, 1988; Combs et al., 2010). For boys and girls college readiness on the ACT and SAT during the 2005-2006 and 2006-2007 school years, Combs et al. (2010) evaluated (a) ACT and SAT exam participation, (b) exam outcome for boys and girls, and (c) how girls and boys differed on their exam achievement. Statistically significant differences, for both school years, were revealed on ACT or SAT exam participation with moderate effect sizes, Cohen's *d* of 0.35 and 0.38, respectively (Combs et al., 2010).

In determining the differences in which of the two groups excelled in reaching or exceeding benchmark, Combs et al. (2010) discovered statistically significant differences for both school years. Boys had the highest percentage of ACT or SAT exam scores at or above benchmark. Effect sizes were small for the 2005-2006 and 2006-2007 school

years with a Cohen's *d* of 0.26 and 0.23, respectively.

Regarding the last research question, Combs et al. (2010) determined that boys' and girls' ACT averages for the 2005-2006 and 2006-2007 school years were not statistically significantly different. However, on their SAT averages, boys' and girls' scores were statistically significantly different (Combs et al., 2010). Boys' SAT average exam totals were 25 points greater than girls' SAT average totals. Effect sizes were small for both school years, Cohen's *d* of 0.32 and 0.29, respectively (Combs et al., 2010).

Conley (2011) viewed college readiness from a different perspective. In a contextual framework, Conley (2011) proposed that states adopt "Common Core Standards" (p. 17) to replace *teaching to the test* mentality and traditional classroom management. The purpose of the standards is twofold: (a) to define and organize the knowledge and skills teachers and assessments should focus on and (b) to increase achievement among U.S. students to a level that is globally competitive (Conley, 2011). From this viewpoint, the standards focused on content but did not provide learning strategies needed "to acquire and retain curriculum content" (p. 18). The overarching purpose of the standards is to increase students' ability to transfer knowledge and become college ready. Therefore, to implement effective criterions, Conley (2011) suggested a change in the process from emphasis on learning by memory, teaching-to-the test, and repetitive teaching methods to a curriculum that is challenging and participatory. Moreover, Conley (2011) suggested that students be allowed freedom of expression in an environment conducive to sharing thoughts and ideas.

As the result, Conley (2011) proposed the following Common Core Standards for math and English: (a) mathematical practice should foster an understanding of problems and persistence in finding solutions and (b) English/language arts standards that promotes acquiring critical thinking and analytical skills. Both Common Core Standards advocated incorporating different strategies using technology and students' involvement in the learning process. Conley (2011) noted that 47 states have adopted these standards. In addition, 45 states have developed two consortiums to review and revise their assessment strategies to align with these standards.

Similarly, Cates and Schaefle (2011) investigated the relationship between college preparatory program participation and the college readiness rates for low-income and Hispanic students. The authors were specifically interested in the hours students spent in mentoring, advising, and tutoring, college visits, field trips, and summer programs, as they related to participants' involvement in the program over a 6-year period. These activities were reviewed in relationship to students' completion of college preparatory curriculum and participation in the Preliminary SAT (PSAT). Finally, students were allowed to rank program activities, and the results were then compared to students' college expectations to ascertain if a relationship existed. Advising, access to college information, and exposure to the college environment during high school were positively related to college readiness (Cates & Schaefle, 2011).

College Readiness Programs and Indicators

Over the past decade, Haycock (2010) proclaimed that AP, IB, and dual-credit courses, Middle College and Early College High School programs have experienced rapid growth and are considered the most popular college readiness curriculums. More important, these programs are considered as rigorous pedagogy that prepare students for college and beyond (ACT, Inc., 2006; College Board, 2010a; Haycock, 2010; Texas Association of Community Colleges [TACC], 2012). Moreover, the majority of high schools in the United States offer at least one of these courses (Bragg, Kim, & Barnett, 2006). Consequently, advanced courses allow students to gain an academic advantage over their peers who do not take such classes (Haycock, 2010). Therefore, students who participate in rigorous class work have been known to accomplish higher scores on formal exams, including state assessments, SAT, and ACT exams (ACT, Inc., 2009a; College Board, 2010a). However, whereas access to some advanced programs is more open, other advanced curriculums are restricted to certain groups (Davis, 2011).

Recently, some high school counselors have aggressively sought to include college level courses as a part of the mainstream curriculum agenda and to affect policy changes from the district level (Haycock, 2010). Furthermore, each state under investigation mentioned several, if not all, of these programs as essential components of their accountability and college readiness initiatives. For this reason, the following sections highlight each of these programs. Because the AP program is the focus of this research, it will be explored in detail in a subsequent section.

International Baccalaureate Programs

The IB program was developed in 1968 as a non-profit organization and is currently offered at 3,480 schools located in 143 countries (International Baccalaureate, 2012). One of the major emphases of the IB program is to improve instruction and learning among students and expanding global thinking and education. A collaborative relationship is maintained between IB officials, educators, and school administrators to provide rigorous curriculums to over 1 million students. The IB curriculum is offered at three levels (a) primary years include ages 3-12, (b) middle years involve those ages 11-16, and diploma comprise of ages 16 to 19. The Diploma program is a 2-year curriculum leading to qualifications recognized by prominent universities throughout the world. Although the program started as part of the international private schools, today 50% of IB courses are in state schools.

Similar to the AP program, the IB program is also described as a rigorous program that is widely recognized by college admissions staff. Another similarity to the AP program is that the IB program has not been available to all students. For instance, IB programs are recognized in 49 states; however, less than 50% of IB programs make any special efforts to target underserved students (Bragg et al., 2006). Nevertheless, states such as Kansas, Kentucky, and South Dakota have formal policies that require all high schools to provide access to IB and AP courses (Bragg et al., 2006).

Dual Credit/Dual Enrollment Programs

According to the TACC (2012), Dual Credit is a multi-dimensional curriculum infusing high school curriculum with college level content. Similar to AP and IB programs, Dual Credit programs are collaborative efforts between high schools, community colleges, and universities. The difference between AP, IB, and Dual Credit programs is that students who participate in Dual Credit programs earn college credit while in high school whereas students taking AP and IB courses must take an exam and achieve the benchmark score to receive college credit (College Board, 2008; THECB, 2008).

Under the dual credit program, colleges are accredited, and instructors are credentialed by the Southern Association of Colleges and Schools (James, Lefkowits, & Hoffman, 2012; TACC, 2012). Participation is limited to high school juniors and seniors who meet criteria set by the affiliate college, usually a community college (TACC, 2012). Therefore, students can choose from both academic and workforce classes. In addition, dual credit students must meet Texas Success Initiative (TSI) requirements either by achieving exemption status on the SAT, ACT, or STAAR or successful results on one of the college entrance exams (TACC, 2012).

Moreover, Smith (2007) indicated that participation in Dual Credit programs positively affects high school completion and persistence in college. Smith (2007) administered a 12-item survey to 304 high school seniors enrolled in a dual credit program at a community college in the mid-west. The purpose of Smith's (2007) study was to investigate "the relationship between participation and location of dual-credit enrollment and the educational aspirations of high school students" (p. 371). Smith (2007) discovered (a) a statistically significant relationship exists between dual-credit participation and level of academic motivation; (b) participating in dual credit programs on a college campus yield greater educational ambitions among students than taking courses at their high school; and (c)

dual credit participation was a better predictor of college success than grade point average or parents educational achievement.

Scholastic Assessment Test

According to the College Board website, the SAT is considered as a widely accepted measurement of college readiness. Administered annually by the College Board, the SAT exam is used to quantify students' knowledge in reading, math, and writing. Hence, the reading section evaluates students' ability to think critically (College Board, 2012c). Students' competencies in math are appraised by their skills in applying mathematical concepts, data interpretation, and problem-solving. On the writing section of the exam, students are rated on their ability to illustrate effective written communication skills that involve sentence structure, editing, and proper use of writing conventions (e.g., grammar, punctuation).

Consequently, the College Board (2010b) asserted that the SAT is a compelling predictor of college success. Hechinger (2009) conveyed that over two million high school students (compared to the 1.5 million ACT test-takers) complete the SAT exam each year. Hechinger (2009) also acknowledged that a record number of minorities took the SAT in 2009, setting the record for the most diverse population ever to take this exam. The College Board (2010b) confirmed that test-takers, who were considered as minorities, totaled 612, 666—however, test scores for the underserved, especially Black and Hispanic students, remained lower than other ethnic groups.

The College Board (2012c) disclosed that the 2012 class (over 1.66 million) was the largest group to take the SAT in its history. Subsequently, the discrepancy in Hechinger's (2009) claims and the current College Board (2012c) report suggested further investigation. Upon review of the College Board (2010b) data, the number of students who took the SAT in 2009 was 1.5 million. Nevertheless, the College Board (2012c) revealed that an increase in SAT participation occurred between 2008 and 2012; however, students' critical reading and writing scores declined by four and five points respectively, with no change in math scores.

Gehring (2001) examined over 1,700 studies in which SAT exam scores were used over a 50 year period. Gehring (2001) established that the SAT exam was both an arduous measure of academic success in students' first year of college as well as a predictor of accomplishment throughout their college involvement. The meta-analysis included 1.3 million students who took the exam in 2000, along with research from the 1940s through the late1990s. Gehring (2001) asserted that the SAT test predicted early and late college success.

Kobrin, Patterson, Shaw, Mattern, and Barbuti (2008) investigated whether the changes made to the SAT exam affected the predictive ability of the exam. Two specific changes were made to the SAT test: (a) renaming the verbal section to critical reading, adding more advanced math, and including a writing section and (b) increasing the testing time from 3-hours to 3 hours and 45 minutes. Thus, Kobrin et al. (2008) conducted a study involving a sample of 151,316 college students who completed their first-year of college in May or June of 2007. Participants were first-year college students attending 110 four-year colleges and universities from across the United States. Therefore, SAT test scores (coupled with high school GPA) were examined to ascertain whether the changes improved or weakened the SAT score value on determining students' first-year grade point average (FYGPA). Females comprised over half (54%) of the student participants. By ethnic affiliation, the sample consisted of 69% White, 9% Asian American, 7% Black, 7% Hispanic, and 3% Other ethnic groups. Kobrin et al. (2008) documented the presence of a statistically significant relationship (r = .28) of HSGPA and the three sections on the SAT. However, Kobrin et al. (2008) cautioned that these statistics may not be measuring the same characteristics of educational attainment.

From the high school graduating class of 2012, students who participated in AP curriculum were more successful on the SAT than students who did not take an AP course (College Board, 2012c). For instance, on the SAT mathematics exam, 83% of students who participated in AP math achieved the college readiness benchmark compared to students who did not take AP math. Similar findings were noted for the SAT Critical Reading and Writing exams (College Board, 2012c).

ACT Program and Exam

Organized in 1959, the American College Testing (ACT) Program purposes were to (a) assist students with selecting a college and major and (b) provide information to colleges to support admissions decisions and predicting students' success following enrollment (ACT, Inc., 2012). In 1966, the elongated name was dropped to embrace the most widely used abbreviation, ACT. During 2002, the ACT expanded their involvement to include both education and the workforce. Hence, an evolved corporate structure was created to provide an Education and Workforce Division. Additionally, in 2005 ACT, Inc. developed ACT International; from which, ACT, Inc. became an internationally recognized provider of 100 programs and services to individuals, institutions, and organizations.

In 2007, and for the first time in history of ACT, the exam was accepted by all 4-year colleges in the United States (Marklein, 2007). This exam is intended to measure students' achievement in English, science, math, and reading—with a writing exam that is optional. Subsequently, Wimberly and Noeth (2005) unveiled a college readiness "Action Plan" that included benchmarks for English, math, reading and science. The highest possible score on the ACT is 36 with benchmarks for English set at 18, math at 22, science at 24, and reading at 21 (ACT, Inc., 2009b; Wimberly & Noeth, 2005). Benchmarks are defined as the minimum score one can attain on an ACT test area that can indicate whether an individual has a 50% probability of obtaining a B or higher; or a 75% probability of obtaining a C or higher in an equivalent college course (ACT, Inc., 2009a). According to the 2009 ACT, Inc. Report, over 1.5 million high school students completed the ACT exam—this number represented a 24% increase over the number of examinees in 2005. Furthermore, between 2005 and 2009, the average composite scores by race and ethnic groups revealed that Asian American students' ACT score increased 1.1 points, White students' score increased 0.3 points, Hispanic students' score increased 0.1 points, and Black students' score decreased 0.1 point (ACT, Inc., 2005; 2009a; 2009b).

Respectively, ACT exam scores are used to predict students' college readiness based on the FYGPA (ACT, Inc., 2005). For instance, ACT, Inc. (2009a) investigated over 300,000 students who took the ACT exam between 1999 and 2003. To measure the relationship between students' GPA and achievement on the ACT exam, ACT benchmarks were used to compare students who reached an ACT benchmark to those students who did not reach this goal. Of the students who achieved benchmarks in English and math, 80% were retained with a 2.98 FYGPA (ACT, Inc., 2009a). Students who met all three benchmarks had an 83% retention rate and a 3.16 mean FYGPA. In comparison, 65% of the students who did not meet any of benchmarks were retained with a mean GPA of 2.37. Thus, the ACT, Inc. (2009a) concluded that a correlation existed between the FYGPA and the number of ACT benchmarks achieved.

Zagier (2011) documented that the percentage of Black and Hispanic students' taking an ACT exam increased from 19% in 2007 to 26% in 2011. However, from the high school class of 2011, 28% of graduates did not meet any ACT college readiness benchmarks (Zagier, 2011). By ethnic affiliation, 4% of Black students met ACT benchmark standards, compared to 11% Hispanic, and 31% Whites. Asian students (70%) were the only ethnic group that exceeded benchmarks in English and math with 41% reaching college readiness standards in all four content areas. None of the groups accomplished 50% of the ACT benchmarks on all exams (Zagier, 2011).

Middle College and Early Challenge High Schools

The Middle College National Consortium (n.d.) indicated that Middle College-Early College (MC-EC) schools are in partnership with local school districts, community colleges, corporations, and parents. Through collaborations with local colleges, MC-ECs provide a supportive pathway to college for underserved students. Thus, the most prevalent characteristics of MC-ECs include (a) being located on or near college campuses; (b) starting with Grade 9 with enrollments of 100 or less per grade; (c) developing a five year academic plan that offers up to 60 transferable college credits or yields an Associate degree by graduation; and (d) engaging students in condensed college level curriculum that eliminates the need for remediation (Middle College National Consortium, n.d.).

In the early 1970s, the first middle college was developed on the campus of LaGuardia Community College, located in Long Island City, New York (Phillip, 2011). According to the Middle College National Consortium (n.d.), most middle colleges focused on recruiting at least 50% of their enrollment from among disadvantaged minority and low-income students. Nevertheless, the program targeted high school drop-outs and those who were at-risk of dropping out of high school (Phillip, 2011). By gender and ethnic affiliation, 53% of the student population were females; 78% included Black, Hispanic and other groups of color; and 67% were eligible for Title I resources.

During the fall of 2011, Prince Georges Community College (PGCC) in Maryland opened the Academy of Health Sciences, accepting 100 freshmen students. As noted by PGCC President, the purpose of the college's involvement was to provide students with the culture and academic challenges that will continue to stimulate learning. As such, students participated in their regular coursework while simultaneously taking two college courses. Those students who continued as scheduled, accumulated 43 or more college credits by high school graduation (Phillip, 2011).

Similarly, Early College High Schools implement a rigorous curriculum providing students the opportunity to receive college credits. Acknowledged as motivation for low-income and first generation students to experience college success, the major components of this program were similar to the components of the middle college (Early College High Schools, 2011). For example, the completion time to being awarded a high school diploma and two year college degree was reduced in both programs. In addition, many of the barriers of transitioning from high school to college were removed. However, the Early College High School did not target at-risk students (Early College High Schools, 2011). Hence, students, who were considered underrepresented, underserved, or otherwise omitted from AP curriculums in regular school, were given the opportunity to participate in a program that would allow them to complete an Associate's Degree or receive two years of college credit towards a higher degree at no cost to them

(Early College High Schools, 2011).

Access, Equity, and the Achievement Gap

Kanter, Ochoa, Nassif, and Chong (2011) and the THECB (2006) asserted that one of the principal barriers to academic success in the United States has been attributed to the persistent achievement gap among all ethnic groups. Education Week (2011) described the achievement gap as the variation in grades, participation in certain curriculum, degree completion rates, assessment exams, and other measures that suggest academic success. The term is used to identify disturbing trends in accomplishments of Black, Hispanic, and low-income student groups when compared to the White student group and students from economically advantaged families (Education Week, 2011).

Similarly, researchers (e.g., Lavin-Loucks, 2006; Maxwell, 2012; Trimis, 2009) suggested the phrase achievement gap describes the inconsistencies and differences in academic success that persists among ethnic groups, low-income, and non-English speaking students. In contrast, other authors (Ladson-Billings, 2006, 2007; Thomas, 2009) attributed the achievement gap to (a) parental involvement with their children's educational process and (b) the level of experience and qualification of teachers responsible for educating students with academic deficiencies. As the result, many students are not experiencing successful transitioning to college and beyond with most students (especially Black and Hispanic students) being placed in college remediation courses.

High School Achievement

Corra, Carter, and Carter (2011) proclaimed that the existence of extreme high school dropout rates and evidence of low college enrollment among Black students compared to their White peers is proof of the racial inequities in the U.S. education system. Achieve, Inc. (2004) acknowledged that high school completion rates are a major concern when discussing the achievement gap and college readiness. However, Orfield, Losen, Wald, and Swanson (2004) contended because states do not report graduation rates separately by ethnic group or income level, the severity of the low graduation rate among these groups of students (e.g., Black, Hispanic, and students with disabilities) are seldom included in education reform discussions. Thus, Orfield et al. (2004) collaborated with several organizations (i.e., Advocates for Children of New York, The Urban Institute, and The Civil Society Institute) to investigate the following questions:

> First, how deep and widespread are the racial disparities that exist at the state and district levels? Second, how has the misleading and incomplete reporting of this issue obscured both the magnitude of the crisis and its racial dimensions? Finally, focusing primarily on the No Child Left Behind (NCLB) legislation, we ask whether state and federal accountability systems, as implemented, are appropriately structured to improve high school graduation rates, especially among children of color. (p. 3)

For question one, Orfield et al. (2004) revealed that students of color left high school prematurely because of (a) high school assessment policies that did not permit students to graduate that did not pass the exam and (b) external problems so severe they interfered with school participation and success. Many of these students were dedicated to their studies, had achieved successful outcomes in the classroom, and expressed hopes of pursuing a higher education. Thus, Orfield et al. (2004) concluded that "collectively, these stories suggest that there may be 'perverse incentives' in many states to push low-performing students out the back door" (p. 3).

In answering question two, Orfield et al. (2004) indicated that dropout rates provided by federal agencies were much lower than what they discovered. For example, government agencies announced a 3.9% dropout rate for Black students' in Florida during 2004, and a 2.6% dropout rate for Black students in Texas during the same year; New York's 2004 dropout rate was not included. Conversely, based on graduation rates presented by Orfield et al. for 2004, a higher percentage of dropouts occurred than reported by governmental agencies.

Similar results were provided by the Alliance for Excellent Education (2012a, 2012b, 2012c) in their examination of data from the class of 2008. For Black students in Texas, the Alliance for Excellent Education (2012c) showed that high school completion rates had improved from 55.3% in 2004 (Orfield et al., 2004) to 59% in 2008 (Alliance for Excellent Education, 2012c). The greatest improvement in graduation rates for Black students occurred in New York, 19.9% (Alliance for Excellent Education, 2012b).

Regarding the third research question, Orfield et al. (2004) revealed that accountability for graduation rates

were not being enforced, whereas incentives for eliminating low-performing students were strictly imposed. Subsequently, in their attempt to avoid repercussions from provisions of the NCLB Act, many states and school districts began to push out low-achieving students to raise their overall test scores (Orfield et al., 2004; Sanchez & Wertheimer, 2011).

A case in point was discovered in Texas, where a principal and several other administrators encouraged low-performing 10th grade students to drop out of school (Llorca, 2012). Prior to hiring the principal, the school was experiencing low performance and threats of being closed. Therefore, to increase school testing results, the principal implemented the plan that resulted in over 40% of the sophomore class not progressing to high school graduation. In one instance, three of the students were members of the same family. According to Llorca (2012), the push-out was school officials' method of meeting accountability standards required by NCLB (2002). Although this plan produced favorable assessment outcomes, the method used was considered fraudulent (Lloraca, 2012).

Researchers (e.g., Balfanz & Legters, 2004; Orfield et al., 2004; Zhao, 2011) indicated that high dropout rates were clearly associated with students' socioeconomic level and the economic level of the school district. Zhao (2011) documented that in 2009, the dropout rate for low-income students was five times greater than their high-income counterparts (i.e., 7.4 % compared to 1.4% respectively). In addition, between 1993 and 2002 the number of schools with low promotion rates increased by 75% (Balfanz & Legters, 2004). However, promoting power was not an issue in minority high schools with resources (e.g., selective programs, higher per pupil expenditures, suburban location). Balfanz and Legters (2004) declared that minority schools in affluent communities "successfully promoted students to senior status at the same rate as majority White schools" (p. 49).

Moreover, Balfanz and Legters (2004) revealed that Florida, Texas, Georgia, North Carolina, and South Carolina had the highest number of schools with debilitated or minimal promoting power. Correspondingly, Balfanz and Legters (2004) concluded that students' timely promotion from freshman to senior status has a strong correlation to high school dropout and deficits in graduation rates. Balfanz and Legters (2004) proclaimed that almost 50% of Black students, compared to 40% of Hispanic students and 11 % of White students, attended high schools where completion is not the norm.

In addition, the economic impact of low graduation rates also warrants mentioning. For instance, the Alliance for Excellent Education (2011a, 2011b, 2011c) declared that dropouts from the Class of 2008 (alone) will encumber lifetime lost wages for Texas, $30 billion; New York, $22 billion; and Florida, $24 billion. From this perspective, the economic burden of high school dropout affects both the individual and the society (Alliance for Excellent Education, 2009). Subsequently, the Alliance for Excellent Education (2009) advocated that the federal government include high school graduation rates as a measure in reporting accountability.

Access to Advanced High School Curriculum

Researchers (Bragg et al., 2006; Lewin, 2011; VanSciver, 2006; Walker & Pearsall, 2012) confirmed that while low-income and minority enrollment in higher education institutions continue to increase, participation in college readiness programs for these students remains disproportionate compared to White students. VanSciver (2006) interviewed 77 low-income and minority students in grades 6 through 10 who were enrolled in the school district's AP Incentive Program during the 2002-2003 year. Parents were also interviewed to investigate the absence of diversity among the population of students taking AP courses. Specifically, the purpose was to determine (a) factors impacting why and how students make decisions and (b) how decisions are made for them. VanSciver (2006) concluded that some students' primary goal is to satisfy their parents with good grades. Therefore, these students deliberately enrolled in courses that yielded the easiest way to a good grade. However, VanSciver (2006) described this type of behavior as destructive. Hence, VanSciver declared,

> Although the myth of public education as the 'great equalizer' is alive and well in the minds of many, the reality is that the notion of public schools as the savior of the less fortunate is fundamentally compromised when institutional decision making does more to suppress low-income and minority students through low expectations demonstrated by the scheduling process than to advance their academic opportunities. (p. 56)

Moreover, VanSciver (2006) maintained that parents of minority and low-income students trust that teachers and school administrators will guide the educational attainment of their children. More important, these parents are not confident in advocating for their children in the school environment, specifically as it relates to requesting challenging curriculum involvement (VanSciver, 2006).

Walker and Pearsall (2012) investigated minority student groups to understand the issues prohibiting minority students' access to AP coursework. Precisely, Walker and Pearsall (2012) examined both barriers to and influences of Hispanic students' participation in AP curriculum at a suburban public high school. These researchers conducted focus groups with Hispanic students and their parents. Interview transcripts suggested that Hispanic students' low participation in AP courses was directly affected by peer interactions and parental endorsement. As the result, Walker and Pearsall (2012) recommended that school officials implement strategies to improve student motivation towards success, develop progressive communication with the community, and improve peer interaction.

Zhao (2011) revealed that legislators continue to argue over changes to the NCLB Act and the accountability measures it imposes on educators. The major concern among these lawmakers is how to identify strategies to revise the NCLB Act to support the students and teachers as well as improve the U.S. education system (Zhao, 2011). As noted earlier, the Obama Administration developed a plan to address the needs of both students and teachers (Kanter et al., 2011). Specifically, the Obama Administration's plan offered each state the latitude to create their own strategic plan to include direct accountability measures (Obama, 2011). According to the Alliance for Excellent Education (2011a, 2011b, 2011c) and Achieve, Inc. (2004), many states, including Texas, New York, and Florida, are joining coalitions improve college and career readiness while concentrating on closing the achievement gap for low performing students (e.g., Black and Hispanic).

Repercussions of College Readiness Deficiencies

Lewin (2011) asserted that although the United States is experiencing a steady increase in college enrollment, college completion rates does not reflect enrollment numbers. One of the problems affecting this outcome is the increasing number of students requiring remediation. Thus, a major component of college readiness is being able to enroll and succeed in credit-bearing college courses (Conley, 2008a; Council of the Great City Schools & ACT, Inc., 2007).

College Remediation

Complete College America (2012) asserted that college remediation is a classic example of systemic academic failure. This contention was made because the original purpose of remediation was to assist low-achieving students with becoming college ready. However, Complete College America (2012) declared that more than 50% of students enrolling in 2-year colleges, and 20% of students at 4-year institutions are placed in remedial classes. Moreover, approximately 4 out of 10 students taking remedial courses fail to complete the class (Complete College America, 2012). For the 2007-2008 school year, Black students represented 45.1% of first-year graduates who required college remediation compared to 31.3% of White students from this class (U.S. Department of Education, National Center for Education Statistics, 2011a, 2011b).

Additionally, taking remedial courses delays and threatens students' ability to complete college within a reasonable amount of time (ACT, Inc., 2010; Education Commission of the States, 2011). A reasonable amount of time to complete a 2-year degree is from two to four years; to complete a 4-year degree is from four to six years (Education Commission of the States, 2011; Lewin, 2011). Therefore, participating in remedial courses adds another layer of barriers to the achievement of Black students at the postsecondary level (ACT, Inc., 2010). Equally important is the cost of remediation. For instance, the Alliance for Excellent Education (2006) declared that low college readiness resulted in cost over $3.7 billion a year. Of this total, $1.4 billion dollars were used for developmental education for recent high school graduates, and $2.3 billion is projected as lost earning potential as the result of students not completing their college education. Notably, the Chronicle of Higher Education (2006) stated the $1.4 billion reported by the Alliance for Excellent Education (2006) was an extimate of remediation costs. The Chronicle of Higher Education (2006) indicated that the Alliance for Excellent Education calculations were the result of using a College Board formula that estimated the average cost of college courses. Conversely, the Chronicle of Higher Education (2006) reported that because remedial courses are taught mostly by adjunct faculty, in some instances, they are not as costly as credit bearing courses.

Researchers (College Board, 2012a; Council of the Great City Schools & ACT, 2007; Lavin-Loucks, 2006; Menson et al., 2009) implied that taking remediation or developmental courses in college is also a clear indication of students' lack of readiness for college. However, other researchers (e.g., Bettinger & Long, 2009) asserted that taking remedial courses contributes to students' college success. Thus, Bettinger and Long (2009) investigated the question, "Who should be placed in remediation, and how does it affect their educational progress?" (p. 4).

Using data from the Ohio Board of Regents (OBR), Bettinger and Long (2009) tracked approximately 28,000 full-time, first-year freshmen students who attended an Ohio public college over a 5-year period. Bettinger and Long (2009) used ACT mean scores and HSGPAS to explain the impact participating in developmental education has on students' college outcomes. For the first portion of the research question, Bettinger and Long (2009) pointed out that students with lower ACT scores and high school grade point averages were more likely to be placed in developmental

courses. Specifically, students who had a 17.4 mean ACT score on math required remediation whereas students with an ACT mean score of 23.3 avoided remediation. For the ACT English exam, students with an ACT score of 22.8 avoided remediation whereas students with an ACT score of 15.8 were placed in remediation (Bettinger & Long, 2009). However, in regard to the effect of developmental participation on college success, Bettinger and Long (2009) determined that students who took developmental courses had a higher college persistence rate than students who had comparable state exam scores but did not take remedial courses.

College Completion

Dougherty (2010) asserted that students who enter high school with academic challenges are most likely not ready for college-level coursework. Nonetheless, Dougherty (2010) mentioned that because the ACT Reading, Science, and Math exam benchmarks are above the national grade level norms, states that based their college readiness levels on ACT benchmarks are placing this achievement above grade level. For this reason, most low-income and low-performing minority students are categorized as not college ready.

Other researchers (e.g., ACT, Inc., 2010; Bragg, Kim, & Rubin, 2005; Education Commission of the States, 2011; Menson et al., 2009) discovered that being college ready affect students' successful completion of their postsecondary education. For instance, College Board (2010) and Lewin (2011) confirmed that approximately 68% of high school graduates in the United States enroll in a higher education institution. Of this number, Lewin (2011) noted that 21.8% of students graduate in 4 years, 40\% graduate in 5 years, and 45% in 6 years at 4-year universities. Furthermore, Lewin (2011) pointed out that of 100 students in Texas who enrolled in a public institution, 79 attended community college, but only two of the 79 completed their degree within 2 years. Meanwhile, only seven students graduated after 7 years. The remaining 21 students out of the 100 students enrolled at a 4-year institution with 5 students completing within 4 years and 13 students graduating after 8 years (Lewin, 2011).

With respect to ethnic differences, the U.S. Department of Education, National Center for Education Statistics (2009) revealed that at 4-year colleges, White students' degree attainment rate was 71% compared to Black students' degree attainment rate of 51% and Hispanic students' degree attainment rate of 54%. Astin and Oseguera (2002) reported that considerable differences in college completion rates by type of institution, ethnic group affiliation, and gender have been present. According to Astin and Oseguera (2002), 4-year private institutions are known to have the highest graduation rate (67%) compared to 4-year public universities (24%).

For the 2008 graduating class, the Alliance for Excellent Education's (2011a, 2011b, 2011c) indicated that a decrease occurred in the college graduation rates among all ethnic groups when compared to Astin and Oseguera's (2002) report. As reported by the Alliance for Excellent Education (2011a, 2011b, 2011c), Black students represented 39% of the 2008 graduating class to earn a 4-year college degree. Hispanic students represented 46%, and White students represented 59% of the 4-year college graduates for 2008. Compared to Texas and New York, Florida had the highest percentage (42%) of Black students to earn a 4-year degree for the 2008 school year (Alliance for Excellent Education, 2011a, 2011b, 2011c).

The completion rates for community colleges are even more daunting than rates for 4-year institutions (Alliance for Excellent Education, 2011a, 2011b, 2011c; Lewin, 2011). For instance, the Alliance for Excellent Education revealed that New York had 17% of Black students to complete 2-year college. Not far behind New York, Texas experienced a 22% 2-year college completion rate for Black students. Florida's 2-year college completion rate of 43% was the highest among the three states examined in this research. On the national level, 26% Black, 29% Hispanic, and 32% of White students completed community college from the class of 2008 (Alliance for Excellent Education, 2011a, 2011b, 2011c).

In retrospect and compared to current trends, little or no improvement in college completion rates has occurred between 2002 (Astin & Oseguera, 2002) and 2011 (Alliance for Excellent Education, 2011a, 2011b, 2011c). Consequently, because of low graduation rates, the United States is falling behind other countries in the postsecondary achievement. In addition, legislators and the THECB indicated that if this trend continues, the United States, in general, and Texas, specifically, will not have the workforce skilled enough to fill emerging jobs and affect global competitiveness (THECB, 2010).

Theories Related to Black Student Performance

Bell (1980) attributed W. E. B. Du Bois (1868-1963) as the pioneer in the study of sociology and a leader in American theory on race. However, several post-modern theorist and researchers on race and education in the United States used *Brown v. Board of Education* to determine the extent that inequality had been addressed in this country (Bell, 1980; Kozol, 2005; Ladson-Billings, 2006). Consequently, theories on race surfaced as the result of legal cases and legislative mandates in support of or against equal rights for Black Americans (Bell, 1980; Delgado, 1990; Ladson-Billings, 2006). Thus, the entire civil rights movements of the 1950s, 1960s, and beyond were the result of cultural ideologies that affected the academic system and proliferated inferior education upon its Black citizens (Bell, 1980; Kozol, 2005; Lawrence, 1987; Ladson-Billings, 2006; Tate, 1997a). Lawrence, (1987) proclaimed,

> Americans share a common historical and cultural heritage in which racism has played and still plays a dominant role. Because of this shared experience, we also inevitably share many ideas, attitudes, and beliefs that attach significance to an individual's race and induce negative feelings and opinions of nonwhites. To the extent that this cultural belief system has influenced all of us, we are racists. At the same time, most of us are unaware of our racism. We do not recognize the ways in which our cultural experience has influenced our beliefs about race or the occasions on which those beliefs affect our actions. In other words, a large part of the behavior that produces racial discrimination is influenced by unconscious racial motivation. (p. 322)

First, Lawrence (1987) explained the unconscious state of racism through the lens of Freudian theory which states: "the human mind defends itself against the discomfort of guilt by denying or refusing to recognize those ideas, wishes, and beliefs that conflict with what the individual has learned is good or right" (p. 323). Therefore, in the event of conflicting ideas and values between racism and culture norms that criticize those thoughts, the mind ignores feelings of racism (Lawrence, 1987). Second, Lawrence (1987) applied the theory of cognitive psychology to illustrate how culture (e.g., parents, peers, leaders, and media) influence individual's perceptions, thoughts, and beliefs. Specifically, Lawrence (1987) asserted that an individual's personal beliefs are connected with the larger society and such beliefs influence decisions, actions, and attitudes that affect systemic outcomes (e.g., on education and economy) in the larger community.

Historically, Black students have been known to endure unfair processes that may adversely affect their ability to participate in advanced curriculums in high school. Researchers (Astramovich & Harris, 2007; Green, 1999; Nieto, 2004; Sullivan, Larke, & Webb-Hasan, 2010) uncovered disparities in retention, school disciplinary actions, tracking, and standardized testing among Black, Hispanic, and low-income students. Potts (2003) further noted that these groups are more frequently placed in special education classes and labeled as students with learning deficiencies. Because of apparent differences in treatment and inclusion of Black and other students, Kozol (2005) declared that schools in the United States are less integrated today than before the decision in *Brown v. Board of Education* (1954; 1955). According to Kozol (2005), integrating students on racial lines is not the issue. What are fundamentally important are the conditions in segregated schools with majority Black, Hispanic, and low-income students are different from the education environment experienced in predominantly White schools (Kozol, 2005).

Specific to education, explored in the following subsections are the ideologies presented by critical race theorists and human capital theorists to understand the persistent access and equity gap experienced by Black students in the United States as well as the long term economic implications for the individual as well as the nation. The concepts of critical race theory were examined in more detail because it is considered the primary foundation on which this study rests. The concept of interest convergence was selected from among the themes of critical race theory to provide a framework relative to closing the achievement gap. Specifically, interest convergence may serve as a motivation towards an expedient closure of the academic achievement gap for Black students. Subsequently, through critical race theorist and human capital theorist the interest of the nation may be accelerated.

Critical Race Theory in Education

Critical race theory was introduced to academe by Ladson-Billings and Tate (1995). Thus, Ladson-Billings and Tate (1995) employed critical race theory to describe and uncover inequalities in educating Black, Hispanic, and low-income students. In addition, Ladson-Billings and Tate (1995) asserted that critical race theory provided another lens through which educational institutions and the struggles experienced by minority participants can be analyzed. Moreover, because critical race theory is an outgrowth of critical legal studies, several researchers (e.g., Bell, 1980, 1988; Ladson-Billings, 2006) employed critical race theory to examine the repercussions of decisions in both the 1954 and 1955 *Brown v. Board of Education* litigation. Through the lens of critical race theory and in the aftermath of Brown, Bell (1980) observed,

> Most black children attend public schools that are both racially isolated and inferior. Demographic patterns, white flight, and the inability of the courts to effect the necessary degree of social reform render further progress in implementing Brown almost impossible. (p. 518)

Ladson-Billings (2006) utilized the components of critical race theory to ascertain the implication of Brown for education in the 21st Century. Ladson-Billings (2006) concluded that because *Brown v. Board of Education* was argued under the assumption of Black inferiority, it does not provide a substantial framework on which to build equality in education.

Brayboy (2005) declared that critical race theory in education revealed the widespread racism that was pervasive in U.S. culture and education. More important, critical race theory brings to the forefront issues of racism that have become obscured by society's chronic acceptance and denial of its existence (Brayboy, 2005). Furthermore, critical race theory excels a liberal view of education and opposes traditional philosophies vis-à-vis equality, meritocracy, and color blindness. Specifically, critical race theory in education advocates eradicating discrimination based on an individual's socioeconomic status, race, and gender from the educational system (Delgado Bernal & Villalpando, 2002).

Thus, Brayboy, Castagno, and Maughan (2007) proclaimed the future of race scholarship in education need to be centered on equity and justice and not on equality. Subsequently, Brayboy et al. (2007) disagreed with the most widespread debate asserting that the terms (i.e., equity and equality) are synonymous. Instead, the authors preferred to distinguish the expressions and then link them to perceptions of justice. To this end, Brayboy et al. (2007) defined equality as "sameness and, more specifically, sameness of resources and opportunities" (p. 159). Therefore, irrespective of race, income, gender, or class, children of an impartial culture should have access to equal resources and opportunities to experience favorable outcomes (Brayboy et al., 2007). Hence, to realize equality in U.S. schools, Brayboy et al. (2007) declared "every student must have access to the same quality of teachers, resources expenditures, and current infrastructure" (p. 159). Nevertheless, test scores, facilities, and lifetime achievement of students from marginalized groups indicate the existence of a void in parity of resources and positive student outcomes. Therefore, to accomplish a school system that practices the equality it espouses, procedures reflecting equity should be present (Brayboy et al., 2007).

Brayboy et al. (2007) posited equity to "mean a system where unequal goods are redistributed to create systems and schools that share a greater likelihood of becoming equal" (p. 161). Specifically, when resources are distributed equally, the equality may be based on the economics of tax levels placed on housing, business, and other factors within the neighborhood. To this end, equality means processes and practices that allow distribution of information to all student groups equally whereas equity assures that resources are equally distributed for equality to become a reality (Brayboy et al., 2007).

DeCuir and Dixson (2004) urged educational researchers to employ critical race theory to investigate the influence of race and racism in education relative to the experiences of African-American students. Subsequently, DeCuir and Dixson (2004) advocated incorporating themes of critical race theory as a means of analyzing these phenomena. Consequently, a qualitative research design was most frequently employed by educational researchers who used critical race theory to frame their studies (Alemán, 2006; Green, 1999; Housee, 2010; Hylton, 2010; Ladson-Billings, 1995, 1997; Parker & Lynn, 2002; Pizarro, 1999; Roberts, 2010; Sullivan et al., 2010; Yosso, 2005). Hence, Parker and Lynn (2002) believed that qualitative research and critical race theory work together to expose the hidden operation of race and racism in legal decisions and social order.

In this manner, DeCuir and Dixson (2004) incorporated the counter stories of African-American students at an elite, predominantly White, independent school, located in the southeastern section of the United States, in a

community with property valuing from $450,000 to over $3 million. Although the school espoused multiculturalism and diversity through counseling and curriculum offerings, DeCuir and Dixon (2004) discovered a different perspective in school administrators' behavior. For instance, through stories of African-American students and lens of critical race theory, DeCuir and Dixson (2004) exposed the persistence of racism in a school that overtly professed and acted outside of racial discrimination yet implemented decisions that spoke otherwise.

DeCuir and Dixson (2004) described an example of a conflicting behavior, involving a student who wore African inspired clothing on a no uniform school day. Confronted by administrators, the student was prohibited from wearing this type of clothing to school. Thus, DeCuir and Dixson (2004) associated the actions of school administrators to Harris' (1993) concept of property interest. Harris (1993) indicated that slavery laws regulating Black slaves as property perpetuated beliefs concerning property interest.

Moreover, several critical race theory theorists and educational researchers (e.g., Bell, 1980; Harris, 1993; Ladson-Billings, 2006) believed ideas of property rights were propagated through legal decisions and interpretations of *Plessy v. Ferguson* (1896) and *Brown v. Board of Education* (1954, 1955). Within this context, Harris (1993) asserted that property interest operates on three levels: (a) right of ownership and control; (b) right to exploit; and (c) right to establish the prevailing attitudes, criteria, outcomes, or expectations. In addition, Harris (1993) decided that attributed to property are the rights to transfer, use, enjoy, and exclude.

From the perspective of exclusion, Sullivan et al. (2010) used critical race theory to examine out-of-school suspension and expulsion rates for students of color in Texas during the 1999-2000 and 2002-2003 school years. The authors revealed statistically significant differences in both out-of-school suspensions and expulsions. Compared to other student groups (i.e., American Indian, Asians, Hispanic), Black students had the highest expulsion rate for both the 1999-2000 (64.3%) and 2002-2003 (65.1%) school years. For out-of-school suspensions during both school years, Sullivan et al. (2010) discovered over 53% of Black students' had experienced this fate.

Critical Race Theory and Advanced Placement

Ladson-Billings and Tate (1995) exploited Harris' (1993) concepts of White property interests as they applied to education. Ladson-Billings and Tate (1995) explained that examining property rights through the concept of exclusion will guide researchers in unmasking hidden racism in U.S. high schools. Specifically, Ladson-Billings and Tate (1995) employed tenets of critical race theory and incorporated concepts of property rights of exclusion to make the following statement:

> Educational inequity, the curriculum, and, specifically, access to a high quality, rigorous curriculum, has been almost exclusively enjoyed by White students. Tracking, honors, and/or gifted programs and advanced placement courses are but the myriad ways that schools have essentially been re-segregated. The formal ways that selection and admission into these programs are conducted guarantee that students of color have virtually no access to a high-quality curriculum or certainly one that will prepare them for college attendance. (p. 60)

Ladson-Billings and Tate (1995) declared that schools use regulations and practices that limit access and successful participation of minority students in college preparatory programs and access to good resources (e.g., experienced teachers and updated technology). As a result, most Black, Hispanic, and low-income students experience low accomplishment in school and ultimately the same fate in their careers (Kozol, 2005).

Tate (1997b) analyzed archival data on mathematic attainment based on ethnicity, gender, class, and language proficiency. Specifically, Tate (1997b) used data from national studies, AP exams, and college admissions tests to establish the changes that had occurred in math achievement over a 15-year period. Tate (1997b) discovered that student participation in AP, ACT, and SAT exams increased; however, Black students continue to lag behind their peers. For instance, between 1990 and 1994, Black students' participation in Calculus BC exam increased from 458 to 1,264 (Tate, 1997b). Yet, the percentage of Black students achieving a 3 or more on the Calculus BC decreased from 48.7% to 36% during this time period (Tate, 1997a). Nevertheless, Tate (1997b) concluded that the analysis revealed significant improvement in math among all groups. The results of the within group comparisons indicated that Hispanic and Black students showed the greatest improvement on math scores. By gender, Tate (1997b) discovered statistically significant difference for 17 year olds, revealing male scores in math were significantly higher than

females. Overall, Tate (1997b) reported that gender did not affect outcomes on mathematic scores.

Human Capital Theory in Education

Becker (2008) clarified the misconceptions of the term capital. Thus, Becker (2008) declared, for the majority of people, capital means finance, shares in company stocks, or other tangible entities that produce income. However, because education, values, habits of mind, and medical expenses support income earnings, Becker (2008) believed they should be considered as capital. Furthermore, money spent on gaining knowledge, maintaining a healthy lifestyle, and supporting society as a whole becomes an investment in human capital (Becker, 2008). Consequently, as human capital, these assets cannot be separated from the people who possess them. For this reason, Becker (2008) suggested that society view higher education as an investment in human capital.

Olaniyan and Okemakinde (2008) declared that scientific data affirmed that an "investment in education has a positive correlation with economic growth and development" (p. 157). However, for education to be considered valuable to the economy, education must first be perceived as an asset within the dominate culture (Lawrence, 1987; Olaniyan & Okemakinde, 2008). As such, Kozol (2005) posited that inadequate education ultimately precedes social and economic deficits that affect all levels of society. Subsequently, human capital theory supports research that explores education and its influence on the individual's long-term social and economic status. For instance, Flowers (2008) investigated differences in AP program participation on students' GPAs, graduation rates, and potential income earnings. Similarly, Olaniyan and Okemakinde (2008) examined research to validate the contribution that education makes on the economy.

From a different point of view, Loomis and Rodriguez (2009) determined that the issue is not whether society accepts education as a way of building human capital. Instead, the problems that should be addressed are the (a) intentions and the effect of the intentions on the structure of education; (b) inequality and limiting information to certain groups; and (c) lack of consistency in developing human capital across racial boundaries. Specifically, Loomis and Rodriguez (2009) and Gilead (2009) suggested that the focus of education and the development of educational processes should be framed by human capital theory. Other researchers (Sakura-Lemessy, Carter-Tellison, & Sakura-Lemessy, 2009) used both the neo-classical human capital and social reproduction theoretical frameworks to investigate the relationship of students' race, class, and gender on high school curriculum participation. A neoclassical human capital theory includes ideologies that describe values placed on human employment or salary (Sakura-Lemessy et al., 2009). Laslett and Brenner (1989) and Macris (2011) provided distinct definitions of social reproduction theory. Thus, Laslett and Brenner (1989) described social reproduction as the "activities and attitudes, behaviors and emotions, responsibilities and relationships directly involved in the maintenance of life on a daily basis, and inter-generationally" (p. 382). Macris (2011) asserted that social reproduction theories on education provide insight into why and how inequalities are recreated, but they do not assist in identifying solutions to the problem. For this reason, schools continue to reproduce systems of prolonged social inequalities (Macris, 2011).

Consequently, from the neoclassical human capital and social reproduction theoretical frameworks, Sakura-Lemessy et al.'s (2009) reported statistically significant differences existed in class, race, and gender when compared to students' educational and post-graduate incomes. Specifically, disparities in education and employment outcomes were noted. As such, Sakura-Lemessy et al.'s (2009) findings supports literature that specifically addressed the equity and access gap prevalent in AP program participation, AP exam attainment, college success, and economic achievement among Black citizens in the United States.

In contrast, Rubb (2006) explored the differences in earnings for overeducated individuals. Rubb (2006) used human capital theory to explain wage differences between the overeducated, undereducated, and properly educated worker. An overeducated person is described as a worker or employee with more education than required to perform the job (Rubb, 2006). Conversely, an undereducated individual has less education than required for the position and the appropriately educated person's education correspond to job requirements. Rubb (2006) discovered that the overeducated person, in the same job, earned less than the properly educated worker. However, Rubb (2006) asserted that the overeducated worker's chances for promotion and salary increases are greater than the properly educated employee.

Human Capital Theory and Advanced Placement

Through the lens of human capital theory, Flowers (2008) explored data from the National Education Longitudinal Study (NELS), which covered a period from 1988 through 2000. Initially, Flowers (2008) included a stratified sample of 25,000 eighth grade students and additional data from at least one parent, two instructors, and a school administrator. From the NELS sample, approximately 28% of the participants had participated in at least one AP course, and 50% had not been involved in the AP program (Flowers, 2008). Among the participants in AP courses,

72% were White students, 13% were Blacks, 10% were Hispanics, and 5% Asian or Pacific Islanders.

Flowers' (2008) purpose was to ascertain whether participating in AP courses affected students' (a) college entrance exam scores (i.e., SAT, ACT, and PSAT); (b) undergraduate GPA; (c) level of postsecondary attainment; and (d) income from employment in 1999. Statistically significant differences were prevalent for all variables used in this study with some variations by ethnic affiliations. For instance, the analysis showing income differences of Black and Hispanic students who participate in AP courses compared to students within their ethnic group who did not participate in AP courses, revealed no statistically significantly difference in the income of these two groups (Flowers, 2008). In contrast, Flowers (2008) discovered that White and Asian or Pacific Islander participants' income were $3,000 and $10,000 higher (respectively) than participants in their ethnic group who did not take an AP course in high school.

Thus, Flowers (2008) supported previous literature on AP program involvement. First, regarding college entrance exam outcomes, Flowers (2008) determined that students who participated in AP curriculum more frequently scored higher on college entrance exams than students who did not participate in AP courses. By ethnic affiliation, Black and Hispanic students involved in AP courses scored 100 points more on their college entrance exams than other students in their same ethnic group. Asian or Pacific Islander and White students who participated in AP courses experienced and even greater margin of success on their college entrance exams (i.e., Asian or Pacific Islander 263 points more, and White students 174 points more than other students in their ethnic groups).

Second, Flowers (2008) affirmed that students who participated in AP courses achieved significantly higher undergraduate GPAs than students who did not participate in AP courses. Again, Asian or Pacific Islander and White students showed larger differences in GPAs of 0.28 and 0.26 respectively above non-AP program participants. For Black and Hispanic AP students' GPAs, a smaller difference was present (0.11 and 0.17, respectively) with no statistically significant differences.

Third, all student groups who took AP courses were most likely to earn a graduate degree than their peers who did not take AP courses (Flowers, 2008). Fourth, with regard to income, Black and Hispanic students taking AP courses earned approximately $2,000 and $1,700 respectively more than Black and Hispanic students who did not participate in AP courses (Flowers, 2008). In contrast, White and Asian or Pacific Islander students who took AP courses earned $10,000 and $3,000 more a year respectively than peers in the same ethnic group who did not take an AP course (Flowers, 2008).

Summary

Examined in this article was literature on the historical perspectives of education for Black citizens in general and Black students specifically in the United States. As such, a greater understanding of the depth and breadth of academic problems in this country can be achieved. Based on views from a diverse group of researchers and several legal cases, education was and continues to be at the core of civil rights struggles in the United States.

Nevertheless, each state has developed programs that promise to close the achievement gap and provide Black and other ethnic groups more access to advanced coursework. In addition, most states, along with the College Board and federal government provide financial incentives for AP and IB exam accomplishments, including grants to assist low-income students with the cost of AP exams. Thus, more students are experiencing rigorous coursework, and the financial barrier to AP exam participation has been minimized or eliminated. Just this year, the Secretary of Defense announced a multi-million dollar grant to support APIP and exam fees (U.S. Department of Education, National Center for Education Statistics, 2012). Black students' involvement in AP courses and exams has increased over the years (College Board, 2012d). However, Black students' level of access to AP courses and achievement on AP exams remains low. Even in the presence of federal, College Board, and school districts assistance, Black students do not show as much improvement in their AP program access and equity as do Hispanic and other student groups (College Board, 2012d; Klopfenstein, 2004; Lavin-Loucks, 2006; Moore & Slate, 2008).

Furthermore, the Alliance for Excellent Education (2008) indicated that the U.S. Census Bureau predicted that by 2050, approximately 50% of the U.S. population will consist of Black, Hispanic, or Asian ethnic groups. Because of these statistics, students of color and the schools they attend should be the concern of all citizens (Alliance for Excellent Education, 2008). Although the achievement gap appears to be closing for Hispanic students, this situation is not the case for Black students. Thus, the theoretical lenses (critical race theory and human capital theory) appear to offer strong foundations on which to frame this literature. For instance, addressed in the literature on critical race theory and human capital theory are the problems identified in this study. Similarly, presented in the literature on human capital is a basis for which a society can perceive the value of educating all of its citizens equally.

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Early Childhood Program Participation and Long Term Effects on Reading Achievement among Boys and Girls

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ABSTRACT

In this study reading scores for kindergarten through eighth grade students who participated in a Head Start program, center-based care program, or home-based care program prior to school entry were analyzed to determine effects of early childhood program participation on reading achievement for boys and girls. Through analyzing data from the Early Childhood Longitudinal Study-Kindergarten, girls consistently outperformed boys in reading with regard to each of the three early childhood programs. Furthermore, boys and girls who attended a center-based care program prior to kindergarten entry consistently performed higher in reading than boys and girls who attended Head Start or home-based care programs in kindergarten through eighth grade. Evidence was present regarding the importance of center-based care programs to future academic success of students. Implications for considerations for further research are discussed.

Keywords: *Academic achievement, Formal assessment measures, Gender, Head Start, Center-based care programs, Home-based care programs*

INTRODUCTION

Many children enter kindergarten lacking the necessary skills to be successful academically and continually fall further behind as they matriculate through the educational system. However, researchers (e.g., Barnett, 1995, 1998; Kostelnik, Soderman, & Whiren, 2011; McPherson, 2008; Pianta, 2007) have revealed that children who attend high-quality early childhood education programs develop behavioral, academic, and social skills that enable them to achieve success in elementary school and beyond. Substantial differences in student knowledge, social development, and performance are apparent as children enter kindergarten. These differences place some children on a continuum of striving to catch up to their peers, thus giving support to the need for development and implementation of high-quality early childhood programs that provide equitable educational opportunities for all students (Barnett, Lamy, & Jung, 2005; Carlo et al., 2004; Pianta, 2007; Zimmerman, Rodriguez, Rewey, & Heidemann, 2008). Based on decades of research, researchers (e.g., Barnett, 1995, 1998; Kostelnik et al., 2011; McPherson, 2008; Pianta, 2007) have revealed positive outcomes for all children who participate in high-quality early childhood programs, especially those children considered high-risk for academic failure.

More children are enrolled in early childhood programs than ever before as the number of women joining the workforce has rapidly increased over the past decades; thus for many children, kindergarten is no longer considered the beginning of children's formal school experience (Graue, 2009). Barnett et al. (2009) reported that 30% of the nation's 4-year-olds attended a state funded preschool program in the 2008-2009 school year, and this percentage increased to 40% of children attending a state or federally funded early childhood program when including children who participated in a Head Start program. Additionally, Barnett et al. (2009) noted that according to the National Household Education Survey of 2007 (NHES) more than 30% of children were enrolled in either a private or locally funded preschool program, bringing the percentage to approximately 74% of children being served in an early childhood program the year before kindergarten entry. Researchers (e.g., Schulman & Barnett, 2005; Zigler, Gilliam,

Jones, 2006a) have noted positive long-term effects of early interventions for children considered high-risk for academic failure; however, little research exists regarding the effects of early childhood program participation in which student achievement has been compared based on participation in one of three types of early childhood programs: Head Start, center-based care, or home-based care.

Increased emphasis on accountability by federal and state policy makers has led educators to focus on early childhood education to provide developmentally appropriate programs which will better prepare children for future academic success (Britto, Brooks-Gunn, & Griffin, 2006; McPherson, 2008; Meisels, 2007; Pianta, 2007). According to Barnett, Friedman, Boyd, and Hustedt (2008), quality standards that enhance social, emotional, physical, and cognitive development of children before entrance into kindergarten are implemented in effective preschool programs. Zigler, Gilliam, Jones, and Malakoff (2006b) argued that the learning that occurs before entrance into formal schooling has a great impact on the learning processes and experiences that take place in later academic years. Moreover, Yaden, Rowe, and MacGillivray (1999) reviewed various studies regarding emergent literacy knowledge and processes of preschool children in home, childcare centers, and kindergarten environments, which revealed a need for further exploration as to the complexities of social, cognitive, and cultural differences among children in the different environments. With these factors in mind, undoubtedly one of the biggest problems facing the nation's educational system today is in the lack of accessibility of early childhood educational opportunities for all children and is not limited to children identified as economically disadvantaged.

The purpose of this study was to determine whether early childhood program participation prior to kindergarten entry has an effect on academic performance of students as they progress through school. Additionally, formal assessment data were analyzed as predictors of achievement through investigation of reading skill attainment by gender based on program participation. The Early Childhood Longitudinal Study-Kindergarten Class of 1998-1999 (ECLS-K) database, obtained from The National Center for Education Statistics (NCES), was analyzed to examine cognitive development of boys and girls with regard to language and literacy (reading) skills for three rounds of formal assessment data acquired from participants. Furthermore, analyses of data obtained through administration of formal measures were explored to determine if achievement was sustained or enhanced based on early childhood program participation year to year, in kindergarten, third grade, and eighth grade (NCES, Data file, User's Manual, 2009a, 2009b).

Long-term effects of early childhood program participation were investigated through analyses of formal assessment data in relation to gender for students who participated in Head Start, center-based care, or home-based care before kindergarten entry. The No Child Left Behind Act (2001) mandated states administer formal assessments yearly for accountability purposes and to determine adequate yearly progress (AYP) in student and school performance. Additionally, the Individuals with Disabilities Education Improvement Act (2004) mandated schools implement a response to intervention process to identify children in need of early academic interventions and to monitor their progress on a continual basis. Given the implications of the effects of early childhood education on future academic success, differences in reading achievement among students in kindergarten through eighth grade were examined with regard to early childhood program participation.

In this study the following research question was addressed: What is the difference in reading achievement among kindergarten boys and girls in the fall of the 1998-1999 school year, third grade boys and girls in the 2001-2002 school year, and eighth grade boys and girls in the 2006-2007 school year who participated in one of three types of early childhood programs prior to kindergarten entry: Head Start, center-based care, or home-based care.

Review Of Literature

Although three groups of early childhood programs were included in this study, each of the groups consisted of varying types of programs, curriculums, settings, and theoretical perspectives that could not be examined. Therefore, from an educator's and researcher's approach to early childhood education, a constructivist perspective was employed for purposes of this study wherein the belief is that knowledge acquisition is a continually changing process in which the learner is an active participant (Bruner, 1966; Dewey, 1938/1998). Knowledge is constructed through a combination of exploration, personal experiences, and social interactions (Bruner, 1966). When children are afforded rich opportunities to participate in learning experiences that allow connections to be made between previous experiences and current activities, ideas are assimilated and knowledge is shaped. Implementing a constructivist approach to teaching and learning in early childhood education allows children to internalize information by synthesizing new and old schema to build on existing knowledge (Dewey, 1938/1998).

Each year kindergarten classes are filled with bright and shining faces of children eager to learn and become engaged, yet they enter with vastly differing degrees of skills and experiences with some children already lagging behind their peers (Wertheimer, Croan, Anderson Moore, & Hair, 2003). Some children have developed school readiness skills through extensive opportunities to learn, whereas others lack any formal educational experiences.

Further, little agreement exists among educators concerning what qualifies as school readiness; yet with increased emphasis on performance outcomes in subsequent grade levels, more attention has been given to early childhood programs and kindergarten as a means of developing skills necessary for future academic success (Bennett-Armistead, 2008).

McPherson (2008) noted that more than one-half of children who attended either a prekindergarten program or Head Start program were equipped with early learning skills which contribute to future academic success, in accordance with core academic indicators for literacy and math as set forth by the state of New York. Although focus has been placed on many factors correlated with student achievement, opportunity to learn remains most critical (Allington, 2002). In essence, children's performance in early years of schooling has been associated with later achievement because children who enter formal schooling with a strong foundation of emergent literacy skills learn to read at an earlier age and develop reading skills that enable future academic success (Downer & Pianta, 2006). Conversely, children who enter kindergarten with poor language and literacy skills tend to demonstrate poor achievement in reading through elementary school and beyond (Cunningham & Stanovich, 1997).

Before entering formal schooling, children acquire considerable language skills and knowledge through interactions with parents, siblings, and other close family members or caregivers (Morgan, 2007). Dewey (1938/1998) maintained that experiences include everything individuals encounter throughout their daily lives and that focusing attention on experiences translates into learning; therefore, the more opportunities young children have to participate in an array of experiences, greater amounts of actual learning takes place versus simply learned performance. Children enter school with the expectation they will succeed; however, students whose language and ethnicity are not highly represented in the school's population experience varying degrees of success academically, often resulting in an achievement gap (Risko & Walker-Dalhouse, 2007).

Furthermore, children with limited access to reading materials and children who are not read to have less exposure to vocabulary outside of daily conversations. This leads to fewer opportunities to learn more sophisticated language necessary to expanding knowledge of the world around them (Neuman, 2006). This argument is consistent with Allington's (2002) view that "the richer the language a preschooler experiences, the richer the child's language development" (p. 81). According to Carlo et al. (2004), a persistent gap in academic performance between groups of students presents both an intellectual and practical challenge.

Head Start

In 1964, Head Start, a federally funded early childhood program, was developed and implemented to provide comprehensive support to children and families living below the poverty threshold. President Lyndon B. Johnson supported Head Start programs as a means of response to the vast number of children living in poverty and lacking necessary health and nutritional services (Head Start Bureau [HSB], 2009). The War on Poverty campaign offered early childhood program opportunities to the growing number of children from low-income families and addressed cognitive, social, behavioral, and physical development of children.

Though benefits of the program have been demonstrated as noted by Barnett, Brown, and Shore (2004), standards for Head Start have not risen to meet the levels necessary to improve children's potential for success in school, as indicated by current research on components of early childhood programs. Barnett et al. (2004) further detailed factors that may impact program effectiveness, such as established expectations of qualifications for teachers, substantially lower salaries for Head Start teachers than public school educators, and less spending per child than public school programs.

Additionally, the U. S. Department of Health and Human Services (2005) reported in the Head Start Impact Study little to no statistical significance in cognitive and social development of 3-year-old children, yet moderate statistical significance with regard to the domains of health and parent participation. Included in the study were two groups, program and no-program, of which the majority of children in the non-Head Start group participated only in home-based care. Participants in both groups scored well below the average of all U. S. children on measures of achievement; however, at the end of the year children in the program group had closed the gap by nearly half, whereas non-Head Start participants lagged far behind. Benefits for participants were noted, although the gains were far less than expected when compared to achievement of children in programs that employ high-quality standards (Barnett et al., 2004).

The U. S. Department of Health and Human Services (2010) revealed similar findings as in the previously mentioned study regarding the benefits of Head Start programs for 3- and 4-year-olds. As noted in the Head Start Impact Study: Final Report (2010), a nationally representative group of nearly 5000 children who participated in the study were assigned to a control or comparison group. These children were followed from 2002-2006, through the end of first grade. Children in the comparison group were allowed to enroll in other early childhood programs, providing a variety of options for this group in comparison to the group who participated in Head Start. Stronger

language and literacy skills were demonstrated by children upon completion of the Head Start program before kindergarten entry; however, significant impacts were not indicated in math skills or prewriting abilities. At the end of first grade, academic performance of Head Start children was minimally statistically significantly higher in only one cognitive ability area, specifically, vocabulary. Greater impacts of Head Start participation were noted in the area of health, whereas more children received dental care and overall health improvement of participants was evidenced. With regard to the social-emotional domain, children in the lowest quartile academically and Black children displayed the most substantial benefits of participation in Head Start; the same benefits were not notable for other subgroups. Most importantly, as revealed in the report by the U. S. Department of Health and Human Services (2010), was the absence of sustained benefits for Head Start participants as they progress through school. Researchers disclosed that inconsistencies among Head Start programs are apparent in key instructional areas, particularly in the development of early language, literacy, and math skills.

Home Based Care

Providers of childcare are essential in helping to promote child development during the most impressionable years of a child's life, as early life experiences are critical to the development process (Smith, 2006). When making the decision with reference to center-based care versus home-based care, parents must examine many factors. As reported by Wood and Bassou (2008), in-home child care can offer many benefits to parents and children, such as allowing siblings to be together throughout the day, more flexibility in hours to meet the employment schedule of parents, and providing services at substantially reduced costs in comparison to center-based programs. Further, researchers revealed that home-based care helps develop stronger relationships between the caregiver and child, just as between parent and child, as often caregivers become somewhat of an extension of the family (Prescott, 1974; Wood & Bassou, 2008).

Zissner (2001) reported in an ethnographic study of families in a working-class neighborhood that many of the home-based childcare settings were unregulated and most often provided by relatives free of charge. Additionally, Zissner revealed that the development of a relationship of trust was more important for parents in selecting childcare than whether caregivers were licensed or not. Prescott (1973) compared three types of early childhood programs and revealed that the ideal setting for children from middle-class homes was a combination of in-home care and preschool, as children were provided nurturing and individual attention, as well as opportunities for socialization and cognitive development.

Families in rural areas frequently selected home-based care because of a shortage of childcare center options within the community and lack of flexibility in hours of operation to meet the needs of families with varying work schedules (Oliveira, 2007; Smith, 2006). As further noted by Smith, rural families relied more on relatives or non-relatives to provide in-home care versus center-based facilities whereas urban mothers, especially single mothers, most often depended on relatives to care for their children. Schulman and Barnett (2005) reported that the number of licensed childcare centers in middle-income neighborhoods was only slightly greater than in low-income areas and a shortage of spaces was available based on the population of children needing services. Thus many families, both lower and middle-income, had no other alternatives than home-based care options.

The most important factors indicated by parents in selecting home-based care over center-based facilities were the provision of a nurturing home environment where their child's needs would be met more readily due to a lower child to adult ratio, familial cultural patterns with regard to child care, and opportunity to experience emotional security and stability (Oliveira, 2007; Prescott, 1974; Smith, 2006; Wood & Bassou, 2008). Parents who revealed their preference for home-based care expressed that the emotional well-being of the child was more important in the early years than cognitive development and when children participated in a nurturing and secure environment, they would flourish when entering formal schooling (Prescott, 1974; Smith, 2006; Wood & Bassou, 2008; Zissner, 2001). Though the emotional benefits of home-based care are notable, caregivers need tools and training to help stimulate children's overall development, including behavioral, social, emotional, and cognitive skills to enhance school readiness and promote future academic success (Oliveira, 2007; Smith, 2006; Wood & Bassou, 2008). According to Oliveira (2007), more important in children's healthy cognitive and emotional development is the quality of childcare provided and not whether the setting is home-based or center-based.

Longitudinal Early Childhood Program Studies

Decades of research exist detailing the long-term effects of early childhood program participation. Most notably are three of the most renowned longitudinal studies of long-term benefits of early childhood program interventions. Each program provided high-quality educational opportunities for enrichment to children from economically disadvantaged families and who were considered at-risk. The three studies are The High/Scope Perry Pre-school Program (PPP), The Carolina Abecedarian Project (ABC), and The Chicago Child-Parent Center Program (CPC). Design of each program placed emphasis on differing components in relation to early childhood interventions.

Curriculum served as the focus of the PPP wherein child initiated learning was the goal (Schweinhart, Barnes, & Weikart, 1993). On the other hand, the ABC program provided the most intensive program which included both full-day and year-round services for five years (Campbell & Ramey, 1995). However, the CPC provided the most comprehensive center-based program services, which included parent and family support services, health care professionals, and various other specialists to meet student needs (Reynolds, 2000). Although the programs varied in several aspects, common aspects among each included small class sizes, emphasis on development of language and cognitive skills, and satisfactory qualifications among teachers, as well as adequate compensation for teachers (Zigler et al., 2006a). Most important were the long-term benefits of high-quality preschool programs noted by researchers for each of the studies.

Revealed in the results of the three studies were many long-term benefits of early childhood program interventions with regard to participants; however, it should be noted that these model programs were specifically designed to meet the needs of children at-risk for academic failure. The same benefits may not be indicated for children participating in less intense programs (Currie, 2001; Zigler et al., 2006a). Although it may be that most early childhood programs currently do not maintain the same level of intensity as the three model programs previously discussed, the long-term benefits and the effectiveness of program participation cannot be denied. Findings of each of the three longitudinal studies support the need for the development of high-quality early education programs that better prepare children for academic and life-long success. Additionally, the information provided, based on the results of the three studies, serve as evidence of the positive outcomes of early childhood education interventions for children at-risk and should also encourage policymakers to realize that every child may experience similar success if they are fortunate enough to have early educational opportunities (Barnett et al., 2005; Zigler et al., 2006a). Whereas the benefits of these programs are clear, it should be noted that outcomes only applied to children from low socioeconomic status and almost exclusively children identified as Black.

Few longitudinal studies have been conducted wherein researchers reveal such comprehensive results as noted in the three studies previously discussed. Although, many researchers have investigated academic performance specific to boys and girls, various ethnic groups, and socioeconomic status in relation to early childhood program participation, there is a lack of research wherein achievement is compared longitudinally based on specific program participation prior to kindergarten entry.

METHOD

Data were obtained from the National Center for Education Statistics, specifically; the ECLS-K for the purposes of this study. Participants in the study were selected as a representative sample of the national population of kindergarteners in the school year 1998-1999; it does not allow researchers to make estimates about third, fifth, or eighth graders (NCES User's Manual, 2006, 2009b). Data from the ECLS-K regarding reading achievement for three rounds of data to be examined were extracted from the ECLS-K Public Use Electronic Codebook (ECB) software. Readers are referred to the ECLS-K User's Manuals for additional information about sampling methods, calculations, and use of weighting (NCES User's Manual, 2006, 2009b).

RESULTS

A multivariate analysis of variance (MANOVA) was conducted for the three rounds of data collected through formal measures of assessment to ascertain the extent to which gender differences were present in reading achievement for kindergarten through eighth grade students as a function of early childhood program participation. Although Box's *M* indicated that the assumption of homogeneity of variance was violated, MANOVAs were performed to answer the research question previously stated due to the robustness of this statistical procedure (Field, 2009). Additionally, Levene's Test of Equality of Error Variances was violated for each of the MANOVAs performed, with the exception of reading *T*-scores in relation to the variables of center-based care and gender for the first round of data analyzed, reading *T*-scores in relation to the variables of Head Start and gender for the second round of data analyzed.

Reading Analyses For Kindergarten Students By Gender, Fall Of 1998

The first MANOVA, conducted for kindergarten students, revealed no statistically significant interaction between gender and Head Start, $\Lambda = .99$, $p = .59$. The main effect for gender was statistically significant, $\Lambda = .99$, $p < .001$, $\eta^2 = .01$, as well as for Head Start participation, $\Lambda = .97$, $p < .001$, $\eta^2 = .03$, small effect sizes (Cohen, 1988). Follow-up ANOVAs revealed a statistically significant gender effect for reading, $F(1, 2076) = 12.70$, $p < .001$, $\eta^2 = .006$, and for Head Start participation, $F(1, 2076) = 59.76$, $p < .001$, $\eta^2 = .03$, trivial and small effect sizes, respectively

(Cohen, 1988). However, no statistically significant difference for reading as a function of gender and Head Start participation was noted, $F(1, 2076) = 0.38$, $p = .54$.

A second MANOVA conducted for kindergarten students for the initial round of data collection revealed no statistically significant interaction between gender and center-based care, $\Lambda = 1.00$, $p = .83$. The main effect for gender was statistically significant, $\Lambda = .99$, $p < .001$, $\eta^2 = .01$, as well as for center-based care, $\Lambda = .97$, $p < .001$, $\eta^2 = .03$, small effect sizes (Cohen, 1988). Follow-up ANOVAs revealed a statistically significant gender effect for reading, $F(1, 7918) = 45.44$, $p < .001$, $\eta^2 = .006$, and for center-based care, $F(1, 7918) = 212.00$, $p < .001$, $\eta^2 = .03$, trivial and small effect sizes, respectively (Cohen, 1988). A statistically significant difference was not revealed for reading as a function of gender and center-based care, $F(1, 7918) = 0.37$, $p = .55$.

According to the results of the third MANOVA, a statistically significant interaction between gender and home-based care was noted for kindergarten students in the first round of data collection, $\Lambda = .99$, $p = .003$, $\eta^2 = .002$, a trivial effect size (Cohen, 1988). The main effect for gender was statistically significant, $\Lambda = .98$, $p < .001$, $\eta^2 = .02$, a small effect size (Cohen, 1988). However, no statistically significant effect for home-based care was revealed, $\Lambda = .99$, $p = .13$. Examination of univariate analysis of variance procedures revealed the presence of a statistically significant gender effect for reading, $F(1, 7419) = 64.20$, $p < .001$, $\eta^2 = .01$, a small effect size (Cohen, 1988), but not for home-based care, $F(1, 7419) = 2.15$, $p = .14$. Additionally, a statistically significant difference was revealed for reading as a function of gender and home-based care, $F(1, 7419) = 9.36$, $p = .002$, $\eta^2 = .001$, a trivial effect size (Cohen, 1988). Presented in Table 1 are the descriptive statistics for reading and early childhood program participation.

Table 1: Descriptive Statistics for Reading Achievement by Gender and Program Participation for Kindergarten Students in the Fall of 1998

Gender/Participation	*n*	*M*	*SD*
Boys			
Head Start	764	43.90	7.93
Center-based care	3248	51.93	10.05
Home-based care	1812	49.01	10.03
Girls			
Head Start	783	45.68	8.22
Center-based care	3434	53.81	9.70
Home-based care	1942	51.62	10.23

Reading Analyses For Third Grade Students By Gender, 2001-2002 School Year

The first MANOVA, conducted for third grade students, revealed a statistically significant interaction between gender and Head Start, $\Lambda = 1.00$, $p = .004$, $\eta^2 = .005$, a trivial effect size (Cohen, 1988). The main effect for gender was statistically significant, $\Lambda = .96$, $p < .001$, $\eta^2 = .04$, as well as for Head Start participation, $\Lambda = .94$, $p < .001$, $\eta^2 = .06$, small and moderate effect sizes, respectively (Cohen, 1988). Follow-up ANOVAs indicated a statistically significant gender effect for reading, $F(1, 2057) = 14.36$, $p < .001$, $\eta^2 = .007$, and for Head Start participation, $F(1, 2057) = 93.71$, $p < .001$, $\eta^2 = .04$, trivial and small effect sizes, respectively (Cohen, 1988). However, no statistically significant difference for reading as a function of gender and Head Start participation was noted, $F(1, 2057) = 2.40$, $p = .12$.

A second MANOVA conducted for third grade students for the fifth round of data collection, revealed no statistically significant interaction between gender and center-based care, $\Lambda = 1.00$, $p = .93$. The main effect for gender was statistically significant, $\Lambda = .96$, $p < .001$, $\eta^2 = .04$, as well as for center-based care, $\Lambda = .97$, $p < .001$, $\eta^2 = .04$, small effect sizes (Cohen, 1988). Follow-up ANOVA procedures revealed a statistically significant gender effect for reading, $F(1, 6169) = 16.34$, $p < .001$, $\eta^2 = .003$, and center-based care, $F(1, 6169) = 204.55$, $p < .001$, $\eta^2 = .03$, trivial and small effect sizes, respectively (Cohen, 1988). However, a statistically significant difference was not present for reading as a function of gender and center-based care, $F(1, 6169) = 0.07$, $p = .79$.

According to the results of the third MANOVA conducted in relation to third grade students, a statistically significant interaction between gender and home-based care was revealed for the fifth round of data collection, $\Lambda = 1.00$, $p = .004$, , $\eta^2 = .002$, a trivial effect size (Cohen, 1988). The main effect for gender was statistically significant, $\Lambda = .94$, $p < .001$, $\eta^2 = .06$, a moderate effect size (Cohen, 1988). However, no statistically significant effect for home-based care was revealed, $\Lambda = 1.00$, $p = .23$. Examination of univariate analysis of variance procedures indicated the

presence of a statistically significant gender effect for reading, $F(1, 5598) = 35.43$, $p < .001$, $\eta^2 = .006$, a trivial effect size (Cohen, 1988), but not for home-based care, $F(1, 5598) = 1.59$, $p = .21$. A statistically significant difference was present for reading as a function of gender and home-based care, $F(1, 5598) = 9.17$, $p = .002$, $\eta^2 = .002$, a trivial effect size (Cohen, 1988). Presented in Table 2 are the descriptive statistics for reading and program participation.

Table 2: Descriptive Statistics for Reading Achievement by Gender and Program Participation for Third Grade Students in the 2001-2002 School Year

Gender/Participation	*n*	*M*	*SD*
Boys			
Head Start	552	44.37	9.49
Center-based care	2690	52.31	9.27
Home-based care	1317	49.10	9.89
Girls			
Head Start	638	46.70	9.37
Center-based care	2453	53.65	8.48
Home-based care	1312	51.41	9.07

Reading Analyses For Eighth Grade Students By Gender, 2006-2007 School Year

The first MANOVA, conducted for eighth grade students, revealed a statistically significant interaction between gender and Head Start, $\Lambda = .99$, $p = .01$, $\eta^2 = .01$, a small effect size (Cohen, 1988). The main effect for gender was statistically significant, $\Lambda = .98$, $p < .001$, $\eta^2 = .03$, as well as for Head Start participation, $\Lambda = .91$, $p < .001$, $\eta^2 = .09$, small and moderate effect sizes, respectively (Cohen, 1988). Follow-up ANOVAs revealed a statistically significant gender effect for reading, $F(1, 763) = 13.34$, $p < .001$, $\eta^2 = .02$, and for Head Start participation, $F(1, 763) = 68.51$, $p < .001$, $\eta^2 = .08$, small and moderate effect sizes, respectively (Cohen, 1988). Additionally, a statistically significant difference for reading as a function of gender and Head Start participation was noted, $F(1, 763) = 7.72$, $p = .006$, $\eta^2 = .01$, a small effect size (Cohen, 19880.

A second MANOVA conducted for eighth grade students for the seventh round of data collection revealed the presence of a statistically significant interaction between gender and center-based care, $\Lambda = 1.99$, $p < .001$, $\eta^2 = .01$, as well as for the main effect for gender, $\Lambda = 1.00$, $p = .003$, $\eta^2 = .004$, and for center-based care, $\Lambda = .97$, $p < .001$, $\eta^2 = .03$, trivial and small effect sizes (Cohen, 1988). Follow-up ANOVAs revealed a statistically significant gender effect for reading, $F(1, 2607) = 7.35$, $p = .007$, $\eta^2 = .003$, and for center-based care, $F(1, 2607) = 69.44$, $p < .001$, $\eta^2 = .03$, trivial and small effect sizes, respectively (Cohen, 1988). In addition, a statistically significant difference was yielded for gender and center-based care, $F(1, 2607) = 6.14$, $p = .01$, $\eta^2 = .002$, a trivial effect size (Cohen, 1988).

According to the results of the third MANOVA conducted in relation to eighth grade students, a statistically significant interaction between gender and home-based care was not present for the seventh round of data collection, $\Lambda = 1.00$, $p = .10$. The main effect for gender was statistically significant, $\Lambda = .98$, $p < .001$, $\eta^2 = .02$, a small effect size (Cohen, 1988). However, no statistically significant effect for home-based care was revealed, $\Lambda = 1.00$, $p = .24$. Examination of univariate analysis of variance procedures indicated a statistically significant gender effect for reading, $F(1, 2322) = 11.33$, $p = .001$, $\eta^2 = .005$, a trivial effect size (Cohen, 1988), but not for home-based care, $F(1, 2322) = 0.90$, $p = .34$, as well as for reading as a function of gender and home-based care, $F(1, 2322) = 0.50$, $p = .48$. Noted in Table 3 are the descriptive statistics for reading and program participation by gender.

Table 3: Descriptive Statistics for Reading Achievement by Gender and Program Participation for Eighth Grade Students in the 2006-2007 School Year

Gender/Participation	*n*	*M*	*SD*
Boys			
Head Start	171	42.60	8.09
Center-based care	1109	53.21	9.84
Home-based care	578	50.17	10.83

Girls			
Head Start	219	47.01	10.23
Center-based care	1148	53.34	9.48
Home-based care	596	51.83	9.44

Analyses of data for the students in kindergarten revealed girls outperformed boys in reading for each of the three early childhood programs. Additionally, boys and girls who participated in Head Start scored substantially lower than non-participants in Head Start, as well as lower than boys and girls who participated in the other two programs. Furthermore, boys and girls who attended center-based programs outperformed all other groups in reading, with kindergarten girls who attended center-based care programs scoring the highest in academic performance. A smaller gap in scores between boys and girls who participated in home-based care was yielded for reading.

At third grade level, girls outperformed boys in reading for each of the three early childhood programs. Moreover, girls and boys who attended center-based care programs achieved the highest scores in reading, and boys and girls who attended Head Start scored far below students who attended center-based or home-based care programs. Boys who attended Head Start continued to perform considerably lower in reading than children in all other groups.

Consistent with previous rounds of data analysis, eighth grade results indicated that girls outperformed boys in reading for each of the three early childhood programs. Moreover, girls and boys who attended center-based care programs performed similarly in reading and considerably outperformed boys and girls who attended Head Start. For the last round of data analysis reading scores for boys who attended Head Start remained considerably lower than students in all other groups. In addition, girls who attended Head Start and home-based care programs outperformed boys, whereas boys who attended Head Start performed far below students in the other groups.

CONCLUSION

Findings of the present study support previous research regarding gender differences in achievement. As reported by the U. S. Department of Education (2006) in an analysis of gender differences in reading achievement among children in 35 countries, including the United States, girls consistently outperformed boys in reading. Further, according to Benbow (1988), Callahan and Reis (1996), and Lubinski, Benbow, and Sanders (1993) girls demonstrate stronger skills in language arts, whereas boys exhibit stronger skills in mathematical reasoning. In a more recent study, Haas and Slate (2010) documented that girls in kindergarten through fifth grade outperformed boys in reading.

Furthermore, Mucherah and Yoder (2008) and Logan and Johnston (2009) suggested that gender was a key factor influencing motivation to read wherein girls read more often for aesthetic reasons and demonstrated better reading comprehension skills than boys. The Education Alliance (2007) reported that girls performed higher on reading assessments, whereas Benbow (1988) revealed that boys continually outperformed girls in math achievement, and girls enjoyment in math decreased drastically beyond the fourth grade. Moreover, in an analysis of college readiness skills of girls and boys, Combs et al. (2010) documented statistically significant gender differences in reading and math performance; specifically, girls outperformed boys in reading, whereas boys scored higher in math. These findings, along with results of the present study, indicated differences in reading and math performance, were present in the earliest years of schooling, and continued as children progressed to upper grades and beyond.

Children who are afforded opportunities to participate in positive early educational experiences develop a stronger academic foundation for subsequent life-long success than children who are not afforded such opportunities (Kostelnik et al., 2011). Based on decades of research, researchers (e.g., Barnett, 1995, 1998; Kostelnik et al., 2011; McPherson, 2008; Pianta, 2007) have revealed positive outcomes for children who participate in high-quality early childhood programs, especially those children considered high-risk for academic failure. Children from lower income families enter school far less prepared than children from more affluent socioeconomic standing (Karoly, Kilburn, & Cannon, 2005; Peisner-Feinberg et al., 1999). However, many children from middle-income homes enter school less prepared socially and academically; therefore, academic readiness is not just a concern for children living in poverty (Barnett et al., 2004).

In an era of amplified accountability and high stakes testing, requirements as set forth by the NCLB legislation for all children to reach proficiency levels in reading and math by the school year 2013-2014 has led educators and policymakers to reexamine and restructure early childhood education programs as a means of addressing academic deficits at the earliest of ages (NCLB, 2001; Schwanenflugel et al., 2010; Stipek, 2006). Moreover, researchers (e.g., Barnett et al., 2005; Stegelin, 2004) have suggested the positive effects of student participation in high-quality early childhood programs are beneficial for children's future academic success as well as cost effective for economic

growth. As noted by Barnett et al. (2009), approximately 74% of children in the United States were served in an early childhood program the year prior to kindergarten entry; therefore, consistency of quality standards among various programs should be considered for the provision of equitable educational opportunities for all children (Barnett et al., 2005; Stegelin, 2004).

Based on four decades of research, the positive effects of early childhood program participation and early intervention on the academic success of children is well documented; however, millions of children continue to be underserved or not served at all in a quality early education program (deVries, 2007; Zigler et al., 2006a). Although many children are served through state-funded preschool programs or the federally funded Head Start program, numerous children continue to lack the opportunity to attend a quality program due to limited funding, which often forces a ceiling to be placed on enrollment for only those children considered high-risk for academic failure.

With regard to the current study, findings support previous research conducted by the U. S. Department of Health and Human Services (2005, 2010) in which sustained academic benefits were absent for Head Start participants as they progressed through school. Additionally, as noted by Gottlieb (2002), children from disadvantaged homes showed greater academic gains when they were not segregated from their more socioeconomically advantaged peers. Furthermore, Schechter (2002) shared results in which children who attended an economically integrated preschool program acquired six times the gains in vocabulary than children who participated in an economically segregated program.

With 40 states offering prekindergarten programs and only three states offering a universal program to all families who choose to participate, it is clear that geography and economic status are considerable factors in early childhood program participation for numerous children (Barnett et al., 2009). As indicated in the findings of the present study, children who attended center-based care programs began kindergarten with stronger reading skills, and achievement was sustained through the eighth grade in comparison to academic performance of participants in Head Start or home-based care. Furthermore, the consistency of the results should encourage policymakers to support state efforts to offer a universal preschool program for all children as a means of addressing inequities in early educational opportunities. Finally, policies might be considered with regard to funding a universal preschool program wherein quality standards are consistent and a developmentally appropriate curriculum is implemented to better prepare our nation's children versus the multiplicity of opportunities currently available (Kostelnik et al., 2011; Zigler et al., 2006a).

With increased emphasis on student achievement and accountability, this study establishes a need for further research regarding the benefits of quality early childhood programs for all children. Additional research should be conducted to investigate quality standards of programs where student achievement is sustained or enhanced over time. Researchers may employ the national quality standards checklist set forth by The National Institute of Early Education Research to compare program quality (Barnett et al., 2009). A second recommendation for future research is to examine the curriculum implemented in various early childhood programs, along with methods of assessment and evaluation. According to Kostelnik et al. (2011) and Zigler et al. (2006a), curriculum should be developmentally appropriate and address the holistic needs of the child. Further, examination of various curriculums might reveal if a program is an extension of kindergarten curriculum or if the curriculum is designed to build skills necessary for success when entering formal schooling.

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Emile: An Insigh into Education and Citizenship in Pluralistic Society

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ABSTRACT

This article focuses on the educational aspects of Rousseau's various works, focusing on the idea of creating a rational citizen. With special reference to Emile and the Social Contract, I argue, beyond the discussion of 'man or citizen,' that a general educational ideal which aims at creating free and rational members of an ideal society may be inferred from Rousseau's educational, social, and political concerns. Rousseau's concepts such as that of a rational being and freedom are examined to achieve a sense of how an individual becomes a citizen who reasonably and willingly appreciates the general will. Finally, some suggestions are drawn with respect to education for a pluralistic society that may operate under a general will.

Keywords: *education, citizenship, pluralistic society*

INTRODUCTION

Rousseau's educational ideas have been discussed by various thinkers from different perspectives. Rousseau's *Emile, for example,* has been discussed as a book that shows the natural goodness of man and as a book that elaborates on how to shape individuals rather than societies through private education (Cook, 1975; Melzer, 1983). In addition, his political views have been interpreted from different standpoints, such as the idea that Rousseau attempts to eliminate human plurality from politics and that he wants to create citizens in the mold of one single model individual (Canovan, 1983). Yet some thinkers emphasize the importance of the relationships between Rousseau's various writings, pointing out that his works are to be read with reference to one another (Martin, 1987, 45; Melzer, 1983, 633). In this respect, for example, it is argued that Rousseau's educational ideas provide an answer to the concern regarding how to create an ideal social unity along with its virtuous and rational members (Boyd, 1963, 196; Parry, 2001, 248). In this study, it is argued that the educational ideas of Rousseau, based primarily on *Emile* and

his social and political ideas constructed chiefly in the *Social Contract,* may provide a perspective of citizenship education with special reference to pluralistic societies.

The first chapter of the *Social Contract* begins with "man was/is born free and everywhere he is in chains" (Rousseau, 1994c, p. 131). Similarly, Rousseau (1993) declares in the opening sentence of *Emile* that "God makes all things good; man meddles with them and they become evil" (p. 5). Rousseau tries to overcome these corruptions and to reach a form of government by passionately standing for *the ideal state*. What Rousseau argues for in both *Emile* and the *Social Contract* is an ideal (natural) society that "is a real spiritual unity with a rational personality and a general will different from the individual personalities and wills of its constituent members" (Boyd, 1963, p. 196). With this in mind, Rousseau (1994a) also argues that "one of the greatest chimeras of Philosophy is having to seek some form of Government in which the citizens can be free and virtuous by the force of law alone" (p. 12). Undoubtedly, arriving at these ends requires well-educated, proper citizens. As Parry (2001) succinctly puts, "the significance of education for Rousseau is that it seems to offer a means of solving one of the central dilemmas of his social and political thought," which aims "to create a virtuous circle in which transformed human beings could live in a transformed society in which all could equally enjoy a sense both of self-fulfillment and community with others" (248). To put it briefly, Rousseau educates Emile as a free and rational being and as an individual who, later in his life, takes his place in his society as a fully developed and educated social contributor. Before discussing how this well-educated social contributor might be educated in a pluralistic society, it may be constructive to examine some essential aspects of Rousseau's educational and political ideas as follows.

MAN AND CITIZEN

In Book I of *Emile*, Rousseau explains the main characteristics of *natural man* and *citizen*. The former "is the unit, the whole, dependent only on himself," whereas the latter is one whose "values depend upon the whole, that is, on the community" (Rousseau, 1993, pp. 7-8). Clearly, the concept of *the whole* in these statements represents different ideas. In effect, Rousseau provides us with two different educational systems whose goals are seemingly conflicting since they are determined by different notions of *the whole*. While one aims to make *man*, the other aims to create the *citizen*. In fact, one of the most challenging of Rousseau's ideas to interpret is about the vagueness between *creating either man or citizen* and *creating man and citizen at the same time*. As Rousseau (1993) asks,

but what can be done when they conflict, when instead of training man for himself you try to train him for others? Harmony becomes impossible. Forced to combat either nature or society, you must make your choice between the man and the citizen, you cannot train both (p. 7).

These seemingly conflicting educational aims have been discussed by various thinkers from different perspectives. For example, Perkinson (1965, pp. 91-92) argues – contrary to Boyd, who asserts that

Rousseau adopted a faulty perspective by which he developed an either-or education theory (education for the individual or society) – that although Rousseau frames different educational ideas, he is not inconsistent with respect to the aims of his educational thoughts, but advocates a constant educational aim in all his works. In fact, Rousseau suggests contradictory educational approaches in *Emile* and the *Considerations on the Government of Poland*. A primary difference between the two works is that the latter provides an authoritarian education that is opposed to what is outlined in the former in general. However, a careful analysis reveals that these two works are intended to respond to fundamentally different concerns with different perspectives. To put it clearly, while Rousseau frames an ideal education for an individual in *Emile* in order for the character to become a fully developed individual, he provides practical educational implications in *Considerations on the Government of Poland* for a society that is indeed corrupted. More specifically, Rousseau's (1953) concern in the latter work is to contribute to the development of a nation that "will date her second birth from the terrible crisis from which she is emerging" (p. 180) through a proper national education that is supposed to "give souls a national formation and direct their opinions and tastes in such a way that they will be patriotic by inclination, by passion, by necessity" (p. 176). Rousseau limits his suggestions with respect to the aspirations and current situation of Poland. Rousseau (1953) clearly emphasizes his limited but practical suggestions, asserting that "my purpose here is only to give a few general suggestions; but that is enough for those I am addressing" (p. 180). In short, Rousseau's perspective on Poland's situation is not to be understood as a part of his ideas on an ideal education system for an ideal society, since it is specific to a corrupt society that is expected to reemerge. Beyond this, it may also be argued that Emile's education happens in a non-ideal society that is too corrupted by the people who value the wrong things and who do not live by the laws of nature. However, as Parry (2001) discusses, the education framed in *Emile* "is designed to allow persons to live an honest life even when surrounded by the pressures of a corrupt society" (p. 249). *Emile*, in any case, provides not a limited but a complete account of education for the development of an ideal individual who may become a participant of an ideal society, even when desired social conditions do not match the realities.

Now, considering the question about how to create a man and/or a citizen, a possible answer may be provided from a view in which creating man and citizen is seen as a complementary and continuing process that aims at a single educational end which is compatible with Rousseau's social and political ideals. First, it may be argued that an individual is educated to become a *man* by private education, followed by public education that makes him a *citizen*, in such a way that the two educations may be seen as consecutive parts of a single education. In Rousseau's account of education, a man is created through a private (domestic or natural) educational system, while a citizen is created through that of a public (civic or citizenship) system (Rousseau, 1993, p.8). At the same time, he maintains that individuals are to be educated in a way that is appropriate to their developmental stages. Rousseau (1992a) argues that educational tasks should be

"within the reach of their age and experience" (p.168) so that they can comprehend. As Shklar (1969, p. 147) discusses, Emile's education is specifically concerned with his developmental stages which are appropriate for him to improve his physical, moral, and intellectual traits. Private education comes prior to public education since human beings are not developmentally able to be educated through public education to become citizens before a certain period in their lives. In this respect, individuals should experience the concerns of their society only when they satisfy the conditions necessary to comprehend social concerns. Until that time, they are educated by means of private education. In other words, individuals are to be educated appropriately according to the developmental stages they are in, which enables Emile to be educated first by private education and then by public education. It is, therefore, reasonable for Rousseau to argue that an individual is to be educated for citizenship after developing his/her appropriate characteristics for becoming a citizen. Therefore, it becomes clear that what Rousseau means by *you must make your choice* is that instead of making a man and/or a citizen, one must first make a man and ultimately a citizen.

Second, if these educational systems are to be seen as continuous parts of a single educational theory, in order to understand the entirety of these two educational systems one may need to take a close look at Rousseau's works, particularly *Emile* and the *Social Contract*. The two works were published in the same year in 1762. In the *Social Contract*, Rousseau constructs his political theory, while in *Emile* he describes his educational theory. *Emile* elucidates in detail how a virtuous individual, who is to be seen as the foundation of the ideal society theorized in the *Social Contract,* can be created through education. As Martin (1987) states, "*Emile* provides the educational theory that any account of an ideal state requires, but that is not to be found in the *Social Contract* itself; the *Social Contract* enables one to understand how Rousseau solves the problem he poses at the beginning of *Emile* – educating Emile simultaneously as an autonomous man and a citizen" (p. 45). As Perkinson (1965) states succinctly, Rousseau conceived education as the best-suited institution to solve problems of social engineering, and *Emile*, as his work that comes after the *Social Contract*, is "primarily a treatise on social reconstruction through education" (p. 89). In this sense, therefore, the book *Emile* may be understood as the work that analyzes the educational system of the ideal state, while Emile himself is seen as the exemplary citizen of the ideal state constructed in the *Social Contract*.

In short, it may be argued that for Rousseau, ideal education requires a continuous process and progress starting with private education and following with public education. On the one hand, Emile is to acquire his independence from others through his education, becoming a complete individual in the process. His education is preventive in character, with respect to the early years in which nothing is imposed upon him which may lead retardation or forced progress (Shklar, 1969, p. 147). On the other hand, once Emile is to become a citizen, he rationally recognizes the wholeness of society and his dependence on others with whom he participates in political unity. As Rousseau (1993) mentions, "Emile is not made to live

alone, he is a member of a society, and must fulfill his duties as such. He is made to live among his fellow-men and he must get to know them" (p. 349). What Rousseau demonstrates in *Emile* may be interpreted as "how a child can be turned into a man in civil society" (Parry, 2001, p. 250). Now, to provide an insight into how this transition is made possible, with regard to the notion of the citizen in an ideal society, it is necessary to analyze some crucial concepts provided by Rousseau, which are in fact deeply interconnected.

BEING FREE AND RATIONAL

The Rational Individual

One of the most important aims of Emile's natural education is to make him rational. It is one of the prerequisites that should be accomplished before Emile's private education ends, which is crucial for his later education in order to make the transition from a *man* to a *citizen*. In other words, before beginning his public education, Emile is to become a rational individual. Being rational involves being *strong* and *good* since, according to Rousseau (1992c), "all wickedness comes from weakness," and once he is made strong, then "he will be good" (p. 39). For Rousseau (1992c), a good person is one who is able to use his own reasoning because "reason alone teaches us to know good and evil" (p. 39).

Emile is to exercise his strength by using his *power*. *Power* is an important concept and a crucial element in becoming rational. According to Rousseau, each desire implies a want and individuals can satisfy their wants only within the limits of their power (Rousseau, 1992c, p. 51). On the one hand, such satisfaction is dependent upon the power of individuals, which makes them happy. Happiness, on the other, is desired by everyone. For the natural man, Rousseau (1992c) states that "happiness is as simple as his life; it consists in the absence of pain" (p. 168). Furthermore, pain is inevitable when an individual is not able to satisfy his or her desires. Emile, therefore, should learn what happiness is and how to balance his *desires* and *power* in order to maintain his happiness, because for Rousseau, a miserable man is one who suffers from the imbalance between his power and his desires. A happy man, on the contrary, is one who is able to satisfy his wants. In his words, "the happiest is he who suffers least; the most miserable is he who enjoys least" (Rousseau, 1992c, p. 51). Therefore, happiness is contingent on the balance between one's desires and power. One's power and desires should be in equilibrium because "a conscious being whose powers were equal to his desires would be happy…true happiness consists in decreasing the difference between our desires and our powers, in establishing a perfect equilibrium between the power and the will" (Rousseau, 1992c, p. 52). This is the *true position* in which a person can find him/herself to have *human wisdom* (Rousseau, 1992c, p. 52).

In brief, a rational person is one who is *strong*, who uses his/her *reasoning* to enable him/herself to be in *equilibrium* in his/her *desires* and *power*, and thus, who is a *happy* person. One of the ultimate aims of Emile's education, therefore, appears to be to make him a *rational* individual. But are there any differences between a rational *man* and a rational *citizen*? Are there any differences in the concept of being rational between a *man's* perspectives and a *citizen's* perspectives? An answer may be revealed if the meanings of

rational and *free* from the perspectives of *man* and *citizen* are analyzed within Rousseau's notion of freedom.

Rousseau's Notion of Freedom

In the *Social Contract*, Rousseau differentiates between *natural*, *moral*, and *civil* freedom. Emile's natural freedom is "an unlimited right to everything that tempts him and that he can get" (Rousseau, 1994c, p. 141). The crucial point here is the idea that a naturally free person can do whatever he/she wants to do and that he/she depends neither on others nor on abstract reason. It is the capability to fulfill physical necessities and, for Rousseau, it is the "[s]avage man, desiring only the things he knows and knowing only those things the possession of which is in his power or easily acquired" (Rousseau, 1992c, p. 86). Thus, a naturally free person can acquire whatever he/she desires if it is within his/her power. However, he/she never uses abstract reason in order to conduct his/her actions to meet his/her needs.

The difference between *naturally free* and *morally free* is that, unlike that of a naturally free person, a morally free person's desires are determined by his or her abstract reason. For Rousseau, *man* has to leave his natural freedom because there is no place for a naturally free person when it is time to join society. Rousseau (1993) argues that an isolated person who is self-sufficient and dependent only upon him/herself "could not even continue to exist"' (p. 187) because once others have left the state of nature, no one can remain in a state of nature and one is forced by others to leave it too. As mentioned previously, Emile is in fact educated to join society once he develops the required skills and is able to fulfill his social responsibilities. Even before Emile enters society, the concept of social relations is gradually developed in his mind (Rousseau, 1993, 187). Yet before entering civil society, one has to learn how to be *rational* and *morally free*. In order to achieve moral freedom, the education of Emile starts right after he becomes conscious of himself. Rousseau states that with the second phase, after infancy, Emile's real personal life begins because he becomes conscious of himself, and so he is to be considered a moral being (Rousseau, 1993, pp. 49-50). From now on, Emile begins exercising his reasoning as a moral being. The morality in this stage is related to being rational and being able to preserve the balance between desires and power, as discussed above.

Emile, as a morally free being, is able to do whatever he wants to do only within the limits of his power insofar as his abstract reasoning allows him. However, it should be considered that Emile is still not able to comprehend the rationale behind the relations among citizens because moral freedom is only, in Rousseau's (1994c) words, "obedience to the law one has prescribed for oneself" (p. 142). In other words, a morally free person relies only on him/herself and the relation between his/her desires and power that are in a state of equilibrium. As discussed above, it is the *true position* that enables one to be in equilibrium in one's power and will. Being in the *true position* requires a rational person to be under the control of abstract reason. The difference between the stages of moral freedom and civil freedom is that while the former is abstract, the latter is concrete and requires obedience to the concrete laws established by *free*

and *rational* citizens as a whole. Moral freedom may be seen as the transitional period between natural freedom and civil freedom. Being able to be morally free and be in the *true position* allows one to become able to experience civil freedom since one has already mastered being under a law, that is, the law one prescribes for oneself. Now, a person who has already experienced being under a law of self-reason can easily and willingly want to be under the *general will*, which allows him/her to enter society as a free and rational individual provided that he/she acquire the concept of *civil freedom*. Civil freedom requires being in a society, since it is achievable only within civil society and is a relation of one's will to the *general will.* Since civil freedom depends upon one's obedience to the *general will*, it is therefore determined by the limits of *general will*. Emile is now able to understand the rationale behind the actions of people who live together and he has to exercise social morality and recognize others as free beings.

Similar to his educational theory, a developmental understanding is seen in Rousseau's notion of freedom too. It requires individuals, in accordance with their developmental stages, to acquire the previous one first in order to comprehend the next. It ultimately aims to reach a civil freedom that is solely realized within the ideal society. In Rousseau's (1994c) words, moving "from the state of nature to the civil state produces a remarkable change in man, by subsuming justice for instinct in his behavior and giving his actions the morality they previously lacked" (p. 141). For him, while the *general will* limits civil freedom, natural freedom is limited only by the force of the individual (Rousseau, 1994c, p. 141-142). Moral freedom, however, is that "which alone makes man truly the master of himself" (Rousseau, 1994c, 142). In short, natural freedom comes prior to moral freedom and civil freedom since one first lives and is educated in the state of nature. Yet, the ultimate freedom that Rousseau wants for Emile is civil freedom. Therefore, Emile is educated in order to acquire first moral freedom and then ultimately civil freedom, since becoming a free and rational citizen is the purpose of his education.

Regarding the concepts of *rational* and *free*, it may be clear how *man* and *citizen* conceptualize these notions differently, with respect to an individual's relation to him/herself and to other members of society. As addressed earlier, Emile as a natural man relies only on himself and considers only his own interests. Prior to being able to use his abstract reason, Emile is free and good insofar as he can achieve whatever he desires and thus become happy. After becoming able to use his abstract reason, Emile's conceptions of being free, good, and happy take on different meanings. Morally free, Emile still lives for himself, but within the *true position* according to his abstract reason. Within the concept of natural man, being morally free makes him free and good as long as he consciously wants and reaches his desires within the limits of his own power. Considering the concept of civil freedom, however, it is understood that his abstract reason is based upon the limits of the general will and thus becomes concrete reason. That is to say, the basis of his abstract reason which is necessary for him to be morally free switches from the limits of his own power to the limits of the power of the *general will*.

Rousseau (1992b, p.137) maintains that in this transition period, one of the educational aims is to

make individuals acquire the idea that individual will is not necessarily good, but the *general will* is. According to Rousseau (1994b), once an individual enters society, then the nature is no longer "an infallible guide" for him/her since "a goal of shared felicity from which each individual would derive his own" (p. 77) cannot be achieved when individuals continue to follow only their own interests and listen to their passions. Human beings' characteristics of selfishness and being capable of rationally defining their self-interests prevent them from recognizing the vitality of the well-being of the whole society (Rousseau, 1994b, p. 77). For this reason, Emile is educated as a citizen in order to be able to use concrete reasoning in accordance with the *general will* and in order to acquire the knowledge that being free in a civil society is to be able to act within the limits of a concrete set of laws. Then, he understands his own will as a part of the *general will* that determines his own power and accordingly governs his desires within the limits of the *general will*. Therefore, a citizen becomes *rational* and *free* insofar as he achieves his/her *desires* within the limits of *general will,* and thus he does pursue a *happy* life within his/her society. Accordingly, it may be argued that the ultimate aim of Rousseau's educational theory is to contribute to establishing and sustaining an ideal society populated by true citizens who are responsible for their society and who have willingly and reasonably committed themselves to follow the *general will* that makes them dependent on the whole.

EDUCATION AND PLURALISTIC SOCIETY

Once Emile is able to enter society, he has to learn how to act, and how to live among and engage with other members of the society. His education replaces his independence or individual dependence with mutual dependence "so that he no longer regards himself as one, but as a part of the whole, and is only conscious of the common life" (Rousseau, 1993, p. 8). Being a part of rational but concrete agreements among the members of society is inevitable for the sake of the unity of the whole society. As Rousseau (1994b) states:

> The earth would be covered with men between whom there was almost no communication…Everyone would be isolated among others, and would think only of himself…We would lie without feeling anything; we would die without having lived … There would be neither goodness in our hearts nor morality in our actions, and we would never have enjoyed the soul's most delicious feeling, which is love of virtue (p. 78).

Emile has to comprehend a new version of how to be rational and free as discussed above and thus must learn to be virtuous. It is one of the main aims of Emile's education for citizenship, which dramatically changes everything he has learned so far. He is to agree to, and be a part of, the *general will*. In fact, the notion of freedom is a vital element in Rousseau's social and political theory, as well as in his educational theory. "Had Rousseau not been centrally concerned with freedom … he would never have made *the general will* the core idea of his political philosophy," as Riley (2001, p. 148) succinctly emphasizes. What Emile "loses by the social contract is his natural freedom and an unlimited right to everything that tempts

him and that he can get; what he gains is civil freedom and the proprietorship of everything he possesses" (Rousseau, 1994c, p. 141). Thus, Rousseau puts citizens in a situation in which they find themselves dependent upon the laws.

The relation between citizens and laws are important since Rousseau argues that the relationship among citizens is to be minimal, whereas the one between citizens and the entire body is to be maximal (Rousseau, 1994c, p. 164). In other words, one's dependence should be upon the state rather than upon other individual members of society, since only the state can provide real freedom for its members. As discussed by Neuhouser (1993), full political freedom is achieved by citizens only if the two (objective and subjective) conditions are realized. These conditions are necessary to attain full political freedom, but one is not sufficient without the other. In this sense, Neuhouser (1993) concisely argues that (1) the laws are to be objectively liberating, meaning that "they must effectively mitigate the freedom-endangering consequences of dependence on the individuals" (p. 395) and (2) citizens are to be in an appropriate subjective relation to the laws, meaning that "the principles that inform the laws must be consciously embraced by citizens as their own" (p. 395). Emile, therefore, may be considered as still dependent only upon himself as he was in the state of nature. Yet, at this time, he recognizes other members of society as free and independent beings and he believes that each member of the state is independent from others but dependent on the whole, that is, on the laws by which they preserve their freedom and independence. Thus, it seems possible for an individual or a group of people not to share a singular cultural doctrine necessarily, in order to live together within a single society. A condition to make this possible may be the idea that the doctrines held by different groups do not contradict with the social contract and are included within it, which makes the idea of *general will* reasonably acceptable for everyone. But can this idea really be drawn from Rousseau's ideas? What happens if different groups come up with conflicting ideas? Are the unity of the whole and a common consensus endangered in such situations?

Regarding Rousseau's understanding of *passions*, it may be argued that passions lead people to hold conflicting ideas. Rousseau (1992c) discusses how "the more violent the passions, the more necessary Laws are to contain them" (p. 38). Conflicts may arise among different groups and become harmful for both individuals and the whole. Yet unity must be fostered through the control of the laws. Rousseau (1994c, p. 91) argues that if personal interests and passions dominate over public interest, then abuses become inevitable and the social structure turns out to be disastrous for the whole. Rousseau (1994d, p. 70) criticizes moralists for considering human beings as reasonable. For him, human beings are sensitive, consult solely their passions to act, and use reason to decrease thoughtless actions led by their passions (Rousseau, 1994d, p. 70). So, should children be taught how to destroy their passions in order to make themselves rational? His answer is clear, since he argues that no one can be good without possessing any passions (1992a, p. 155). Yet, instruction on how to control passions through reason is vital.

Self-love may provide a good example for such concern. According to Rousseau (1993, p. 208), as an

effect of self-love, everyone loves him/herself above everything. Yet everyone also loves anything that contributes to their preservation (1993, p. 208). In this sense, two crucial concepts appear as vital: *reason* and *contribution*. From Rousseau's perspective, reasoning should instill in students the idea that they are dependent on only *general will*, and any contribution to the well-being of society (the whole's self-preservation) is in turn a contribution to their individual self-preservation. Therefore, within a society consisting of well-educated citizens, every group is understood to overcome any conflicting ideas among each other and arrive at a common consensus in order to preserve the well-being of the whole.

Furthermore, since Rousseau gives human actions dependence upon laws and morality, citizens are to be educated to embrace the sacredness of the bonds of social unity, to love and serve each other, and, in his words, to "scrupulously obey the laws" (Rousseau, 1992c, p. 80). Thus, students are to acquire the vital role of reciprocal relationships between individuals and different groups. According to Rousseau (1994b), justice can be found in "the fundamental and universal Law of the greatest good for all" (p. 114) rather than in a relationship between two individuals. Similarly, regarding pluralistic societies, justice must not be in a relationship between groups of people or individuals. Therefore, well-educated citizens in a pluralistic society that aims to be just should always search for a fair consensus, even if their ideas conflict.

In the final analysis, Rousseau provides us with an insight that may help us establish a framework of citizenship education for creating free, rational, and virtuous members of a just society. His educational ideas may give us some crucial elements of the curriculum in citizenship education concerning pluralistic social structure. For instance, *reasoning* appears as a crucial element in order to create rational individuals who acquire the necessary limits of relationships among citizens and who embrace principles of equality and the value of love. *Moral education* seems to be another important component of such an educational curriculum in order to instill the meaning of being free and virtuous into students. According to Rousseau, children are to be trained early enough to see themselves as parts of the whole and to learn obedience to each other. In order to achieve these ends, they are to be "raised in common in the midst of equality" and to be surrounded by love so that they can internalize the value of loving one another as brothers and sisters, wanting nothing but what the society needs (Rousseau, 1992a, p. 156). Even though Rousseau did not have a specific interest in a pluralistic social structure, his ideas may be interpreted with a special reference to citizenship education in pluralistic societies. It may be concluded that Rousseau's educational theory suits the realities of pluralistic societies well and does not conflict with them, insofar as an educational system is provided that includes crucial elements in its curriculum such as *reasoning*, *moral education*, and *equality* alongside the aim of creating *rational*, *free*, and *equal* citizens. Unquestionably, a further and detailed discussion on the integration of these and similar curriculum elements into existing curriculum is required in order for us to benefit from and extend his ideas. Yet, for now, Rousseau's educational theory appears to provide a viable direction for the future.

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ABSTRACT

Mechanical translation (MT) is the transfer of a text from a source language (SL) into a target language (TL) via a cybernetic machine, in other words, "computer". Human labour, human skills, human experience and human brain power are inevitable in this operation.Mechanical translation is based on word-for-word translation. What occurs in mechanic translation can be summarized as the mutual functioning of SL and TL together, and the achievement of coherence and equivalence in the performed translation. The data are given by humans and the translation is "automated" and mechanized by the computer.With the development of computers, mechanical translation has progressed to a more advanced level in recent years. The recent developed technology has put the polysemy of the words as well as the grammar rules at the disposal of humanity with a developed computer for an optimal translation.This study will show the stages of mechanical translations and the working systems of the projects conducted in this field. On the other hand, sentence-for-sentence-translation, which is the point that normal translation has arrived at, renders the mechanical translation more successful and fruitful. In this way, the contextual meaning of the text gets transferred.The current paper is comprised of the titles of The Realization of Natural Language Elements in Computer, Terminology Formation in Mechanical Translation and Actions Occurring in Mechanical Translation, and mechanical translation is tried to be presented and explained through illustrations and the main elements used.

Keywords: *Machine Translation (MT), PC/Computer, Source Language (SL), Target Language (TL), Terminology*

INTRODUCTION

Today's individuals follow the scientific, political, cultural and commercial developments, and watch them with interest. A political or a commercial development in a country could affect the lives of those individuals who are so far away from that country. It is so interesting and important to read or listen a document or a novel that was written in a foreign language in our mother tongue through Machine translation techniques with the help of electronic tools-especially with computer.

Translation which is automatically performed from a human language into another by using computer software and hardware technology is called automatic translation, or machine translation (MT) in general. The function of computer assisted translation (Mechanical Translation) is to ensure that the source text is analyzed by Computer (PC) and synthesized into a target language, that is, to ensure that the source text is translated word for word or sentence for sentence by PC. A Machine translation block between two persons is given in Figure 1. O. Kade, A. Neubert, G. Jaeger from "Leipzig Translation School" have contributed significantly to the works in MT.

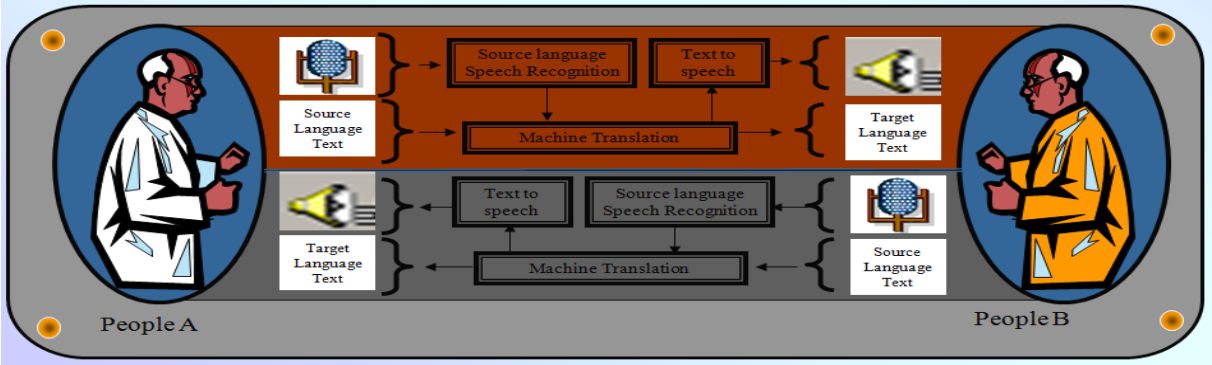

Figure 1.[1] Machine Translation between two persons

There have been many studies conducted on machine translation and the automatication of machine translation. These works began with the invention of computer and progressed in parallel with the development of computer technology. It is 1950's and 1960's that the works on this field boomed. The advancements and successes in those years are limited and unsatisfactory translations were accomplished. The works that began in 1950's continue rapidly and significant achievements have been reached. Still, full automatic translation is yet to be reached and human translation has to be a part of it. On the other hand, the studies are still being carried out on scientific methods to create better and more accurate translations.

What happens in mechanical translation is to ensure that the ST and TT, that is, both languages, function together and create harmony. And that happens with the help and skill of human power. The data are given by the humans and the translation is "automated" - mechanized by the computer. When mechanical translation finds the various meanings of the words belonging to a source text in the target texts, it will succeed in reaching an optimal automatic translation. We cannot say we have accomplished it today. Significant achievements have been reached in a few languages (English, German and French). That level has yet to be reached in many languages apart from them.

Let's have a look at the English and German translations of a Turkish sentence done by the "google translate" program.

„**Üç yıl önce Dubai'de bulundum"**

a.Three years ago **I** was in Dubai (engl-human translation)

b. Vor drei Jahren war **ich** in Dubai gewesen.(german- human translation)

On the other hand:

c. Three years ago **we (I)** have been to Dubai (english - google translation

d. Vor drei Jahren **haben wir (ich)** bereits in Dubai (…) (german -google translation)

There is problem in the perception of pronouns in German and English. "We" should be "I", "wir" should be "ich" and "haben" should be "sein". The syntax is not completely realized in German. While the verb "gewesen" should be at the end, it is not understood in translation. It is revealed here that for a meaningful translation, humans must take part in translation process.

„**Üç yıl önce Dubai'de bulundum**"

(English) Three years ago **I** have been to Dubai: a. ***Üç yıl önce ben dubai olmuştur***. (Turkish)

(German) Vor drei Jahren war ich in Dubai gewesen: b. **Üç yıl önce Dubai'de olmuştu.**

In the Turkish equivalents of the English and German sentences, we are more faced with meaning-based incomprehensibility. Both sentences reflect a meaningless translation. After the translations performed above, the problem is seen as the fact that Turkish is from a different language family (Ural-Altaic language family). As the syntax

[1] This table was firstly used in the article of Oz, C., Leu, MC. (2011) and was taken and modified according to the scope of this study.

structures of the both language families are different, there is a problem in the transfer from ST into TT.

According to the determination of UNESCO, there are 4000 languages in the world and translation is done only between 1200 of them (Ljudskanow:1972:219). Mechanical translation is successful only in a few languages as understood from the illustrations we have seen above and the success is limited to the translations among European languages.

Mechanical translation is based on word-for-word translation. It seeks to give more than one meaning of a word in TT. To the extent that the computer succeeds in knowing which one of the meanings to choose, the translation will reach its translation goal. The biggest trick of the mechanical translation is idioms. In this regard, the difficulties are much more in social and literature texts.

In this respect, mechanical translation will be more fruitful to the extent that it is able to do sentence-for-sentence translation which human translation has reached. While a mechanical translation of any sentence of a text is performed, it is a necessity to know all the information of the whole context.

Methods Used in Machine Translation

In all machine translations bilingual dictionaries and grammar rules in Data-Form are used as moduls. Yet each method differs from each other. We can part the approaches in machine translation in four groups: Direct MT, rule-based MT, Corpus-based MT and information-based MT. There are advantages and disadvantages in each approach group. The methods used in Machine Translation are given in Figure 2.

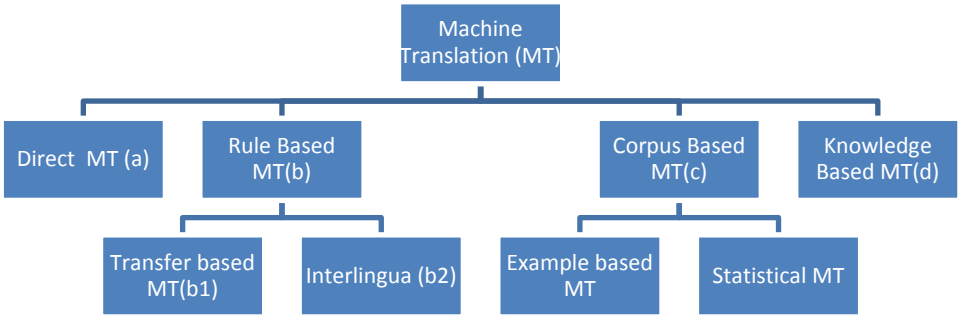

Figure 2.[2] Methods used in Machine Translation

(a) Direct Machine translation

There is no interim representation or a complicated structure in Direct Machine translation the block diagram of which is given in Figure 3. The words of the source text are transferred into TT with the same word-for-word arrangement with the help of bilingual dictionary. After the translation is performed, the sentences are changed according to the TL rules and then transferred into TL. This method is the oldest one. The stages of direct machine translation are as follows:

- The morphological inflections are removed from the words of the source text according to the different grammar rules of the word.
- The target language equivalent is found in a bilingual dictionary.
- Necessary syntactical arrangements are performed.

[2] This table was firstly used in the article of Jaganadh G. (2010) and was taken and modified according to the scope of this study.

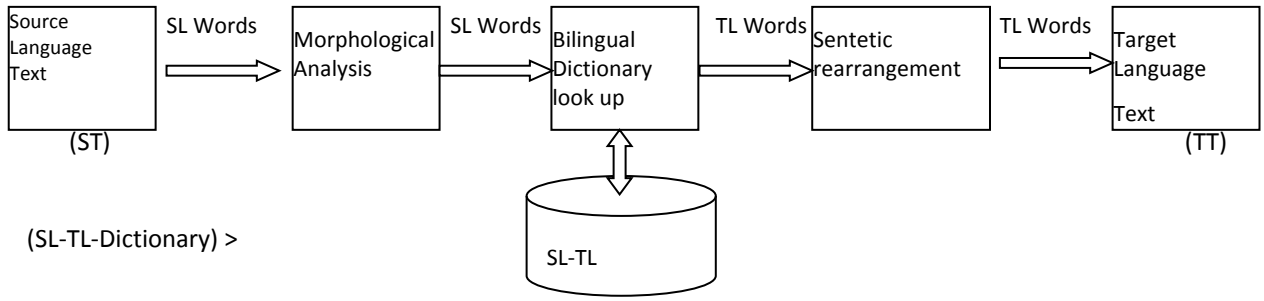

Figure 3.[3] Direct machine translation system **(Direct MT)**

The disadvantages of direct machine translation are that it does not take into consideration the structure and relations between the words, that a system developed for a given language cannot be applied to a different language and that the perceptions and changes in the language are not considered.

(b) Rule-based Machine Translation

Compared with direct Machine translation, rule-based machine translation yields better results . The system includes language rules which play an important role in machine translation and which are created by linguists. There are two rule-based machine translations: transfer-based and Interlingua.

(b1) Transfer- based MT : This application is a classic method comprising of three stages. These stages are Analysis, Transfer and Generation. First the grammar structure is analyzed. Then the semantic structure is produced. At the end, all actions are transferred into TT. Thus the operations performed in TT are reproduced. Transfer-based MT diagram is given in Figure 4.

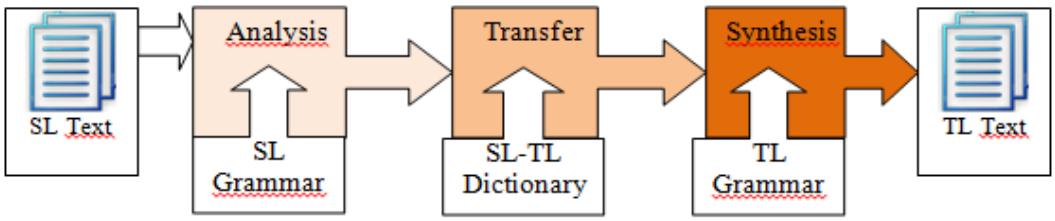

Figure 4.[4] Transfer-based MT diagram

(b2) Interlingua: Here the grammar data of the source text is analyzed and transferred into an second interlanguage (Zwischensprache). These grammar data is produced in TL via this second interlanguage. This method is suitable for the statements with multiple meanings.

(c) Corpus-based MT

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Corpus is the database of the conversations and words in a language. It is possible to see many studies on this subject. It results from the fact that there is a less need for qualified linguists. It is parted into two groups: SBMT (Statistics-Based Machine Translation) and EBMT (Example-Based Machine Translation).

(d)Information-Based MT

Information-based MT is a system that performs translation from a source language into a target language by using one of the morphological, syntactical or expanded semantic information. These kinds of systems make use of artificial intelligence.

Translation Programs

The number of MT systems and programs used today increases gradually. Especially recent years have seen great expansions and advances in this field. It is worthwhile to introduce some systems which are among translation programs.

a. SYSTRAN

SYSTRAN is one of the first commercially used machine translation systems. It was first used in 1971 for a translation from Russian into English. And NASA used SYSTRAN in sharing spacecraft information.

b. LOGOS

It was begun to be developed in 1964. It was used for translation from English into Vietnamese at Air Force of United States of America. It was supported by Siemens AG in 1978 and was used for the translation of communication documents from German into English. The system was not used any more since it was not found successful. Later, this system was bought by multi-partnered companies (Hewlett-Packard, Nixdof etc.).

c. COMSKEE

It is a system established and used by Saarbrücken Research Center (SFB-100). This system was specifically adapted to Computational Linguistics base. This is a program language oriented towards Linguistics. It has greatly contributed to MT. Translation processes are performed on mathematical four operations of addition, subtraction, division and multiplication (+ , - , : , x), logarithm and potential calculations and for this, "**Computers**" are an inevitable equipment. Elementary actions of mathematical logic (and - ^ , or > , negation >, if ---) are performed in the production stages of translation processes. For this reason, computer is necessary and without it there cannot be MT (K-D-Schmitz:1987:116).

d. EUROTRA (European Translation System)

EUROTRA translation system has been created with a work performed in 1982 at the request of European Union Council.

As is evident from its name, as EUROTRA was founded with the support and wish of European Union, it will conduct its operations with a function that will comprise of the states of European Union. We see that Turkey has not been included in the MT projects carried out up to now. Although included in the programs of some private firms, qualified Turkish translation programs have not yet been developed as we will see in the following text illustrations.

It could be overcome with the entry of Turkey into European Union. One reason why the executers of the MT programs up to now were not interested in Turkish is that Turkish has a rather different structure than the European languages that are accepted as main languages. After our private attempts on this subject, we learnt that there had to be computer programming knowledge besides theoretical knowledge. We understood that in order to take part in such a project, there is a need for a double skill of both processing and using theoretical knowledge in computer environment. Apart from that, we have understood that there is an alternative to work together with the dominant computer programmers.

European Center for Scientific Knowledge Processing too was performing works in this field too, They had

yielded the first product of their first work in 1963. With the system they had developed, they were able to translate 60,000 Russian words into English in an hour. 1000 Russian words were translated for 7 Dollars. When looked at from a financial aspect, it was seen that it could compete with human translation. While EUROTRA was focusing its attention on knowledge and developments, the Russian scientific institution ISPRA was concentrating on translation.

As a result of this cooperation, 115 translations were performed and a translation capacity of 700,000 words were realized between 1965 and 1968 (Piatrowski:1984: 335). As soon as the translations were obtained from the machine, they were given to the **Editors** with the Russian original text.Even though the machine could not translate the comparisons and formulas in the original text, a successful action had then been realized on the text base. It was observed that those who gave translation brief were more or less satisfied with the performed translations.

300,000 words were transferred with these translations done with IBM Computer system. A dictionary had a capacity of around 150,000 words.

e. SUSY: Meanwhile, significant works were being performed with a project (**Saarbrücken Mechanical Translation System**) conducted by **H. D. Moos** in Saarbrücken, Germany. Its works serve as a source for world-wide developments even today. It contributed significantly to MT with translations of word-for-word and word groups.

Though the works of mechanical translation augmented rapidly, it was not possible to make fast progress due to the resulting problems. This in turn led the researchers to translate texts in certain fields. The purpose was to settle the foundations of translation system. As a result, some characteristic views emerged.

- Full automatic translation cannot be performed completely.
- Understandable, albeit flawed, translations in specific languages and fields are performed.
- Much better translation programs should be developed and translations should be done with the existing good programs.
- The correlation of the languages to be applied in mechanical translation should be determined.

In 1966, the scientific academy of Automatic Language Processing Advisory Committee in USA performed works. After its works, this committee had some decisions about mechanical translation.

In parallel with the worldwide attempts, Germany conducted some mechanical translation works as well. The SUSY project in Saarbrücken could be given as an example to these works. Important developments to machine translation were made with this project. With a project named **"Feasibility study on fully automatic high quality Translation**" at the University of Texas, USA, in 1970, it was aimed to meet the fully automatic translation need felt in the fields of Philosophy, Linguistics and Computer. Numerous scientists as well as linguists worked in the development of this project.

The first outputs of this work showed that only the translations of individual sentences were successful and were presented by Stachowitz. For him, these works had to be concentrated more in the fields of descriptive, theoretical and comparative linguistics. In this way, many issues such as the studies of linguistic models would be examined (Stachowitz: 1973: 9).

The main starting point of mechanical translation is the realization of word-for-word translation with the help of a dictionary. The equivalents of the words are automatically brought and there is more than one translation possibility for each word in question. The problem here is the fact that the syntaxes of different languages cannot be ordered clearly. We have seen in the examples above that the syntaxes of German, English and Turkish are different and that problems arise resulting from that.

The computer has not yet completely succeeded in transferring the equivalency of different syntaxes, because each language carries a different syntax system. A second problem is how to give which one of the different meanings of the words and where to give. The whole problem lies at the two points here. It is seen that humans should be a part of this process. It is a fact that even human help cannot render mechanical translation completely automatic.

Application processes of mechanical translation

Trojanskji (1946) who started the first study in the field of mechanical translation made it possible for the mechanical system to be understood with the tool he acquired. With this tool, the researchers applied the following processes (Bruderer:1982:24).

1st Process: This system transfers the code number of each word of the foreign language into TT with the relevant codes. The name of this application is "directory system". The coding in this system is performed as such: A=01 , B=02, C=03.....Z= 26

The code number of the German word "**und**" is (as the code number of each letter is different) is 211404 with u=21, n=14, d=04. The equivalent of the English word "and" would be coded as 011404 with a=01, n=14, d=04 (**and** : 211404 = 011404). This system is not practical because an alphabet of 26 letters on average would have a combination of fourteenth power of 1.4 x 10, which would not be practical at all.

2nd Process: An application performed with the adoption of a dictionary system: trying to the give the code words of SL with the equivalents of TL.

	SL (fr.)	TL (eng.)
E.g.:	beau: 0205011200	beautiful :020501232009062112 (beautiful)
	Chien:0308090514	dog : 041507 (dog)

(Schwanke:1991:26)

If we consider that this system was made with the punched card system of the day (1947) we could understand how difficult it is. Still, it is an application that has a place in mechanical translation as a successful endeavor. Both the present situation is much more beyond it, and it is successful and easy. At the same time, the data are applied and realized on a digital environment.

3rd Process: The first step in this field was taken by two entreprenuers named Booth and Richens. It is a system which ensures that the root and affixes of the word reflect in the translation. It was an advanced stage compared with the first step. With this method, not the word with its root but just its root was kept in the memory. When a word was looked up and not found, the longest word that is nearest to it comes to the screen. It was a significant stage then but as the computer technology was not sufficient enough it could not yield the desired success. A block diagram belonging to MT conducted in this process is given in figure 5.

Director of Physical Sciences of **Rockefeller Foundation**, **Warren Weaver,** made an offer to Language and Physical Sciences and made it possible for this kind of works to be performed. In this context, the works **Erwin Reitler** performed at the University of Washington are noteworthy. The innovation that the foundation brought to the works is the new style it offered to the **human-machine** connection.

Text producer	+	Machine tr.	+	Review	=	Translation

Figure 5. MT. Block diagram showing the third process

Here it was not considered that the text producer should have TL knowledge. His/her task is to remove the words with double meanings from the ST. The task of the editor (Nachredaktuer) was thought to be all about orderly putting down on paper the text given by the machine. As seen, these works did not give the expected result either.

4th Process: In 1952, a conference on mechanic translation was held in U.S.A. for the first time. The significance of the international conference is that it accelerated the subsequent works. The creation of Russian Machine Dictionary was realized after the works of this conference. After even all this intervening time MT still was not able to proceed practically. The year 1955, in this sense, is a turning point to remember. Conducted at the same year and published in 1956, "Machine Translation of Language" is an important work carried out by **Booth**.

After all these works, the structure of the mechanical word was getting more and more complicated because the separated root and suffixes could not be found distinctly. The word was found either in the form of "root + suffix" or just in the form of "root". Also the "**roots**" was not found on their own. The suffixes and the words had to be found with individual structure numbers (e.g: -er:12; -st:75; -haft:81…) structure number This could not be achieved because the TL rules was not introduced to the machine completely. The biggest hardship here was that the machine did not completely identify the syntax rules and idioms of SL and TL. Meanwhile, while there were intense works being performed on MT in America, in Russia there were intensive developments where 500 researchers took part.

The Realization of Natural Language Elements in Computer

The most important component of this process is database. The data on the database constitutes all the materials and building stones of machine translation. Databases should have such information:

a. Morphological explanations
b. Syntax explanations
c. Word roots
d. Word separations and suffixes
e. Frequency differences between the words (such as gehen: **go** on foot / fahren: **go** with a car Geist: life, soul)
f. Expression styles
g. Bibliography

While the information above and the explanations of roots and words are being loaded to the database, the characteristics of both partner languages should be known in detail. However, as will be seen in the following example, there may arise difficult problems to resolve such as the emergence of different translations in the German equivalents of an English expression.

Terminology Formation in Mechanical Translation

Unknown words seem to be more than normal in a text before a translational act gets started. For this reason, it is more useful to do a raw translation firstly, put the new words instead of those which cannot be determined by the computer and start the translation in that way. Terminology relating to the expertise fields of relevant texts could be loaded to the database or could be added in addition to the existing dictionaries. Trados translation program could be given as an example to it. The function of Trados translation programs continually increases.

Trados was founded as a language service provider (LSP) in Germany in 1984. The company started developing translation software at the end of 1980's. By the end of 1990's, it had become an important trademark in desktop translation memory software. Trados was purchased by SDL in 2005 (www.trados.SDL :14.10.2012). In SDL/Trados system, MultiTerm Extract process operates and the following concepts are valid. They are operated on action process.

Monolingual Term Extraction Project	MultiTerm Extract extracts source language terms starting with a, b, c, and d, up to a maximum of 100 terms. If the source language is not Latin alphabet-based, the first 100 terms are extracted. No export functionality is available and projects cannot be saved.
Bilingual Term Extraction Project	MultiTerm Extract extracts source language terms starting with a, b, c, and d (and associated translation proposals), up to a maximum of 100 terms. If the source language is not Latin alphabet-based, the first 100 terms are extracted. No export functionality is available and projects cannot be saved.
Translation Project	MultiTerm Extract processes the first 20 terms that are common to both the termbase and the bilingual input files. No export functionality is available and projects cannot be saved.
QA Project	MultiTerm Extract processes QA projects that contain one file only; the file must be less than 100KB in size. No export functionality is available and projects cannot be saved.
Dictionary Compilation Project	MultiTerm Extract extracts source language terms starting with a, b, c, and d (and associated translation proposals), up to a maximum of 100 words. If the source language is not Latin alphabet-based, the first 100 words are extracted. No export functionality is available and projects cannot be saved.

(www.SDL Multiterm 2007)

There is a dictionary server in MT translation. Some firms create their own databases and create translation programs. If the technical side of the issue, the money and time spent and the difficulty thereof are considered altogether, it is more appropriate for the firms to buy ready translation programs from the outside. However, the firms Siemens, Bosch and Mercedes which develop their own translation programs make significant progresses on it. After overcoming the specified hardships, the introduction of original translation programs creates more productive, faster and more qualified translation from the programs that could be bought.

Many terminologies are created automatically im MT where works have been conducted since 1950's. These words are put on our agenda as specialty language **(Fachsprache)**. These newly coined words are called (information) source.

The act of machine translation is a phenomenon where appropriate algorithm operations are realized on Computer with the power of human intelligence. In other words, Mechanical translation is the realization of appropriate algorithm marks on machine environment with human power.

Here what is mentioned is a phenomenon that does not take place in human practice. Each number, figure and mark processed by computers, and each command given to the computer are stored in a cell within its memory. The operation occurring here or realized by humans is "**Euclidean Algorithm**".

Ders bitene kadar beklemelisin. – Du musst warten, bis der Unterricht aus ist. (German)

The above sentence is comprised of a series of words. We should express the forms of discourse and meaning created by each word and their suffixes with direct speech paraphrase) What constitutes the content of the text is paraphrase. Each word, suffix, letter and grammatical mark that serves a purpose in the sentence has a value. If we give the number equivalents of each element in order to find the value of this sentence, we will be confronted with millions of numbers. In this regard, it is revealed that the euclidean algorithm is an inevitable mathematical operation (Ljudskanow:1972:219).

Accordingly, Machine Translation should have the following characteristics:

a. The translation should reflect the word meanings of the original text

b. It should reflect the inner meaning of ST.

c. The TT should be read as the original

d. The TT should reflect the style of the translator

e. TT should reflect the style of ST author by adapting to the style of the translator

f. TT should also reflect the time when the ST was created

g. Nothing should be added to or removed from the TT

h. If the translation cannot be transferred as poetry, it should be transferred as prose

As we have stated before, although all the translation programs use different methods, they are basically established on computer technology. With each passing day, new usage conveniences and solutions for MT are created along with the innovations in computer technology.

Technology Use in Translation Works in European Union

For multilingualism, language learning has crucial importance for European Union. Multilingualism has been accepted as a identity determination criterion for EU. In this regard, European Commission has Directorate-General for Translation. Translation briefs are performed among 23 languages in 27 member countries. Directorate-General for Translation of European Union Commission conducts these translation briefs.

The translators in the Directorate-General for Translation work with translator's work bench and translation memories. This commercial application package (TWB) is a program that includes local translation memory and stores all official documents and allows for being taken from itself when necessary. In addition to them, **Euromis** (European Advanced Multilingual Information System) is a commonly used application. Euromis is a set of web applications that is combined with electronic mail mechanism and that allows access to many services in the field of language operations. Terminology formation in the Directorate-General for Translation is the task of language departments. By means of terminologists, these departments support the formation of the terminology necessity for the translations between the official languages of EU. The Union supports for the formation of different institutions for the development of the following translation professions: European machine translation (computer translation) institution, European Council of Associations of Literary Translators, European Community of Translation Works and European Union of Associations of Translation Companies (www.euro.eu.) http://ec.europa.eu/pubic

Comskee: It is a system founded and used by Saarbrücken Research Center (SFB-100). This system has been specifically adapted to the LDV (Computational Linguistics) base. It is program language oriented towards Linguistics. It has greatly contributed to MT. The translations are performed on the mathematical four operations of addition,

subtraction, division and multiplication (+ , - , : , x), logarithm and potential calculations and "**Computer**". Elementary actions of mathematical logic (und - ^ , oder > , negation >, wenn ---) are performed at the formation stages of translation processes. In this regard, computer is necessary and without it, MT cannot be realized (K-D-Schmitz:1987:116).

The system processes raw translation (Rohübersetzungen) in fully automatic translation process. Specific subject domain texts are more suitable for the structure of the system. These texts are processed in a short time, that is, translated and put into the service of the customers. LFC system has a capacity of processing one word in a second or 200 pages of text in a work day (Schwanke:1991:104).

CONCLUSION

As the countries become closer and closer to each other, people are left no choice but to reach more information. This in turn created an effective translation need between languages. Automatic machine translation is a commercial market and a new research area which ensures that people instantly access current information in global world. While mechanical translation is a field also related to artificial translation, it is the research subject of also linguistics, informatics and computer science. Today, MT is a world-famous branch of Software Industry and many softwares have been developed in this field. Most of them are carried out in University environments. Despite these, 1 % of all the translations is performed with MT (www.google.de/maschinelle übersetzung). In this study, machine translation, methods used in machine translation, the past and present of machine translation have been presented. In the light of these explanations, still many works are being conducted on machine translation. In spite of this, it cannot be denied that human translation is inevitable and irreplaceable in this process.

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Strengthening the Synergy between Teaching and Research

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ABSTRACT

It is now proved that with the changing context role of management education has become much more important. Teaching-learning process at management education institutions means more than facilitating learning environment and it address the demands and challenges of the knowledge based economy. In the area of management education an ongoing global debate about the teaching-research link is going on. The present paper attempts to answer how research informs teaching and how teaching is informed by research. This paper explores the linkage between teaching and research and suggests ways to strengthening that link. In the first part of the paper it talks about the Research and Teaching relationship; in the second part it discusses the Research-informed teaching. Last part of the paper deals with the Teaching – inform Research aspect.

Keywords: *teaching-research, management education, india*

INTRODUCTION

We live in an increasingly interdependent world. There is greater diversity at workplace. Managers have to face new challenges everyday, they have to grapple with uncertain issues and find ways to revamp their organizations in such conditions. In these kinds of scenarios we need to have decision-making talent capable of flourishing in the new environment.

> *"Involving students in inquiry - in research - is a way of improving their learning, motivating them more. After all, what motivates large numbers of academics is engaging in the excitement of research. Bringing research and teaching together is a way of enhancing the motivation of both academics and students."*
>
> *(Brew, in preface to Jenkins et al., 2003, ix)*

In this context the role of management education has become very important. Management education in general is concerned with imparting knowledge that is relevant for managerial career and also concerned with developing capabilities to use this knowledge in problem analysis, diagnosis, anticipating events, etc. and in decision-making. (Dayal 2002)

The quality of education or teaching-learning process should enable future managers to contribute global learning solutions to their organizations as quickly as possible.

Recent Debate

Teaching-learning process at management education institutions means more than facilitating learning environment where academics staff and students are 'working together'; teaching and learning are interwoven towards the needs of students and the demands/challenges of the knowledge based economy.

There is an ongoing global debate in the teaching-research nexus. There are issues such as how research inform and enhances leaning and teaching? How research is useful in the management education context? How Teaching-informs Research?

The present paper attempts to answer these questions. This paper explores the linkage between teaching and research and suggests ways to strengthening that link. In the first part of the paper it talks about the Research and Teaching relationship; in the second part it discusses the Research-informed teaching. Last part of the paper deals with the Teaching –inform Research aspect.

Feeding research knowledge into teaching can be viewed as a knowledge transfer process. The relationship between Research and Teaching has been widely studied in the last two decades. Jenkins and Zetter (2003) view the value of creating such a link from three perspectives: experientially (both students and faculty benefit); conceptually (benefit from development of knowledge); and operationally (benefit from reciprocity of Research and teaching as learning activities. Scarfe Adam in his paper, 'Conceptualizing the Teaching - Research Contrast: A Process Philosophical Perspective' formulates an argument by definition, inspired by Whitehead's manner of thinking, by which we can poist how teaching informs and enhances research and further conceptualize the teaching-research contrast. Similarly Vammila (1995) and Henkel (2000) pointed out that there are a number of studies, which show that academics feel strongly about the problems caused by the desire/wish to do research and to teach.

According to Sagor (2003) as cited by Donna R. Everett argued that teachers, who conduct action research, bring certain skills to their classrooms. They are observers (looking at what is happening and thinking about information they already have); they are questioners (everything that occurs in a classroom can be seen as data to be understood); they are learners (reflecting on what they learned rather than on what they taught); and they are more complete teachers because they bring together the concepts of knowing and doing. Senaratne, *et al.*, (2005) as cited by McFarland indicates that the changes in quality assurance and funding mechanisms have created a tension between research and teaching. Firstly the separation of research and teaching quality assurance has created problems within universities as regards choosing a mission statement (research excellence versus teaching excellence) and allocating resources. A second tension arises among academics "as research is more rewarding compared to teaching, academics aim for research excellence at the expense of teaching" (p.588). Brown considers that the academic discussion on the linkage between research and teaching "contains a certain confusion. It is uncertain whether the research that academics are supposed to overtly link to their teaching is the research already undertaken and published by others in books, journals or textbooks, or whether what is to be introduced to teaching is their own personal research" (2005, p.394). Scott (2008) opined that business school must articulate what type of research is valued (pedagogic, discipline based or applied). AACSB International - The Association to Advance Collegiate Schools of Business in their Accreditation Standards- talks about the Portfolio of Faculty Contributions which is explained by a generalized categorization of intellectual contributions includes contributions to learning and pedagogical research, contributions to practice, and discipline-based scholarship. According to AACCB accreditation standard, Learning and Pedagogical Research contributions influence teaching-learning activities of the school. Preparation of new materials for use in courses, creation of teaching aids, and research on pedagogy all qualify as learning and pedagogical research contributions. Watkins, C. & Mortimore, P. (1999) expressed pedagogic research as applied research into teaching and learning practice. The primary aim of such research is to enable the teacher to understand and interrogate their practice, rather than add to the global stock of knowledge.

Pedagogic research plays a key role in the university's plans for future development, building on existing expertise in areas such as experiential learning, education for sustainable development. Thus, Pedagogical research can pave the right path for the development of b-school. Applied research is designed to solve *practical problems* of the modern world, rather than to acquire knowledge for knowledge's sake. It is basically to answer appropriately to the needs of businesses by dissemination and valuing knowledge and know-how.

Cooper and Mcalister(1998) in their paper suggested that Business schools in research universities can compete effectively if we focus on research that is both basic (influencing further knowledge development) and applied (problem driven), and if we differentiate our offering by incorporating the findings of our basic, applied research into our curriculum. Paul et. Al (1998) also talks about the use of applied research extensively by different B-schools. Many educational institutions believe in the strong relationship between teaching and research. Foundation for Organizational Research and Education (FORE) school of Management believes in research strongly and to boost

their presence in field of Research, the institute has formed a "Centre of Research" under which faculty work in the varied functional areas of management with particular emphasis on organizational research. They have their refereed research journal for more than last twenty-seven years. Goa Institute of Management in its philosophy of education details core functions of GIM which includes:

- Through a learning centric mode (as against being learner centric or teaching/teacher centric), impart knowledge that is contemporary, practical and useful to managers, organizations and society.
- Generate knowledge through research that informs teaching and is informed by teaching

Research That Informs Teaching

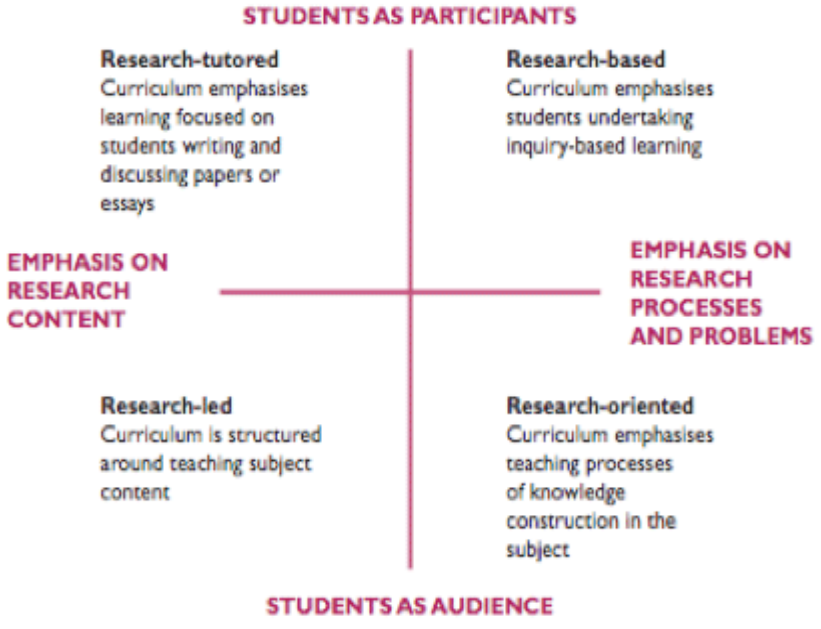
There is a widely held axiom in universities that 'research informs teaching'. But what does this actually mean? Teaching in discipline and subject areas should reflect research knowledge, as it informs the discipline or subject area.

Research can directly inform teaching through example and practice by mirroring the thought process. (Ray and Woods berry 2009). Here are some points for research – led-teaching primarily taken from University of Melbourne experience. (Baldwin 2005)

1. Sketch on your own research in designing and teaching courses

This facet of research informed teaching Research *in* Teaching focuses on teaching that reflects the impact of research that occurs in the context of teaching practices as they intersect specific discipline/unit/course content, teaching experiences and student experiences. In this context faculty plays role of a reflective practitioner.

Fig. 1: Curriculum design and the research-teaching nexus



Source: Based on Healey (2005a, 70)

According to Garnett and Holmes (1995) one obvious way in which research used in teaching is in underpinning curriculum, especially at postgraduate level.

It is true that its not easy to use personal research directly in teaching, however, there could be possibilities in this direction.

> *"We are all researchers now ….Teaching and Research are becoming ever more intimately related …In a 'knowledge society' all students – certainly all graduates –have to be researchers. Not only are they engaged in the production of knowledge; they must also be educated to cope with the risks and uncertainties generated by the advance of science."*
>
> Peter Scott, Vice Chancellor of Kingston University '*High wire: We are all Researchers now,*' Guardian Education, January 28, 2002, 13

There are many opportunities for teachers to introduce their own research experiences into classes in the form of illustrations.

In my course on Research Methods, I use my recent research project during my sessions to give them practical examples. I used my papers in various occasions such as when I was teaching Factor Analysis, that time I refereed my paper and asked students to see how in that context factor analysis is useful. Similarly when taking a session on questionnaire design and data coding etc; I again shared my questionnaire development process to give them practical understanding.

Garnett and Holmes (1995) stated that research can provide teachers with a framework for the development of up-to-date course material and research related projects.

It is believed that good teacher is constantly searching for relevant examples and anecdotes. If a teacher is engaged in research in his/her areas, then this can very well keep him/her up-to-date with the current innovations in the respective field and the dynamic changes too. This understanding provides ample scope for using those facts/data in class room environment.

2. Plan learning activities around contemporary research issues

In many disciplines/ subjects it is possible to ask students to explore some of the cutting-edge research themselves. Such as in Marketing discipline; while taking a session on 'online marketing'; faculty may ask students to find out the current trends in advance and share their finding in the class.

These kinds of experiential activities may be more effective as they give a chance to involve students' in practical exposure as well as break the monotony of chalk and talk technique. For example, students in one course were asked to investigate the Management Information System used in the different oragnisations.

3. Integrate research activity into students' assignments

This facet of Research *Skills & Practices* most directly on students (and, where appropriate, academic staff) acquiring skills needed to successfully undertake and complete their own research.

Some courses can include full research project or given a chance to analyze 'real data' from an existing research project. Here again the author would like to cite an example of the Research Methods course at Goa Institute of Management where Project is an important part of the course. The project there is used to engage students through a process of experiential learning.

A group comprising 4- 5 students generally choose a specific research topic in consultation with the Course Instructor(s). They have to identify a work – based issue in the area of Human Resource /Finance/Marketing/Operations/Social that can be investigating using a qualitative and quantitative approach. This research project is aimed to provide students with lasting benefits, e.g.

- The student selected project reinforces classroom instruction and students learning about both the qualitative and quantitative aspects of research.
- The students will become more experienced in applying suitable research tools, working in teams, brainstorming, so necessary for professional success.

The author have witnessed some of the very good quality projects in last four years at GIM. Many of the projects taken up by students were applied in nature and live projects. This has given them a chance to enjoy the unique kind of learning that comes with it. Through their projects students were able to understand the technicalities of the research process apply them in their projects and again contribute their experience in the class.

A student project is the ideal form for active learning- learning by doing, rather than just listening. Professor Ranjini in her internal document for CIS and dissertation opined that GIM could consider offering students the option of doing a Comprehensive Project of about three units. The project would require students to take up a live problem

or opportunity (of defined and modest scope) facing a company and help the company to respond effectively *on the ground*. Thus the student must help the company act effectively; he must help the company execute decisions. (A library based project would not be considered acceptable as a comprehensive project.) A comprehensive project would provide student with an opportunity to (a) integrate learnings across the disciplines/ fields of management (b) learn the challenges in execution. Faculty members guiding the project have to be permanent faculty of the Institute. The student could access help from others within or outside the institute; however, the guiding and evaluation would primarily be the responsibility of the permanent faculty member who is the guide.

Brew and Bound (1995b) stressed that latest research into teaching and learning suggests that actively engaging with content is a way of gaining in depth understanding of the contents. An effective way of achieving that is by having students carry out research.

RESEARCH INFORMED TEACHING

Teaching can be *research-led*

curriculum is structured around subject content, and the content selected is directly based on the specialist research interests of teaching staff

Teaching can be *research-oriented*

attention is given to the teaching of inquiry skills and on acquiring a "research ethos";

Teaching can be *research-based*

curriculum is largely designed around inquiry-based activities; students are also involved

4**. Encourage students to feel part of the research culture of the institute**

At institute level one can stimulates students' interest in research through different clubs/ societies or by holding guest lectures to keep students up-to-date with new discoveries and ideas. Many institutes have components of dissertation, case writing etc in their curriculum. The Dissertation allows students to explore deeply, a research question of interest and relevance to the student.

Sadeghi Abbas (2009) talks about the benefits of teaching from research and explained that active involvement in the research process directly improves the quality of teaching by promoting a critical engagement with the subject matter and by providing experiential learning environment. It keeps the academic up to date with the frontiers of knowledge within the discipline. He opined that research gives teachers the opportunity to convey to students not only specific new information but an understanding of the value and intrinsic excitement of scholarly endeavor and an appreciation of the spirit of enquiry underlying it.

Research Which Is Informed By Teaching

The aim of teaching is knowledge transmission and many a times there could be possibilities where teaching can be key to research or we can say teaching-led research.

Specially when designing/re-designing of curriculum; one needs to think through. Here the core is to teach 'a subject' and in the process of understanding that subject teacher requires research. For example when an idea came to the author of this paper to launch an elective related with Lyrics and Management at GIM last year; the author have to do whole lot of research on justifying her idea; creating the course outline; collating the relevant material. The author decided to link role of music in advertising; this gives her ample scope to research in order to understand the conceptual background. Launching this kind of a totally new course can provide research opportunities.

In this context; author used research at understanding level. Also later, she included this experience in one of her paper and shared with the intellectual world. This is an example of teaching –led research.

Teaching-led research can be used to showcase new courses/new developments with stakeholders group. Sometimes questions from students can led to substantiate research or class hours with students can give new ideas of refining research. In a paper by Becker and Kennedy (2004), interviews of the faculty members in respect to the question as to how their teaching informs their research were discussed. And, there was a consensus of responses to the effect that teaching substantially informs research.

One professor expressed that "Teaching keeps research in perspective – I can think of several instances in which teaching has forced me to come to my senses and give up on a topic because I couldn't explain why it is important.

CONCLUDING REMARKS

Thus, there's a synergy between teaching and research -- research informs teaching and teaching informs research. It should be very significant that management education ensure ways to strengthen this synergy. Many research studies suggest that Indian B-Schools lack research culture. In light of this, to strengthen the teaching-research relationship; it is important that business school first recognize its importance and find ways to create a research culture.

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"Involving students in inquiry - in research - is a way of improving their learning, motivating them more. After all, what motivates large numbers of academics is engaging in the excitement of research. Bringing research and teaching together is a way of enhancing the motivation of both academics and students."

(Brew, in preface to Jenkins et al., 2003, ix)

The Effects of Parent's SES and Education Level on Students' Mathematics Achievement: Examining the Mediation Effects of Parental Expectations and Parental Communication

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ABSTRACT

Although there has been prior research concerning parental involvement effects on students' mathematics achievement, little attention has been placed on the reasons for the mathematics achievement gap between low-and middle-income students, and how to reduce this gap associated usually attributed to students' SES. The present study's focus is specifically on parent-child communication and parental expectations mainly because these two variables can increase students' mathematics achievement despite parental income and education level. The correlation matrix was derived from a national, cross-sectional study of children. The 1997 Child Development Supplement of the Panel Study of Income Dynamics (PSID-CDS) data set was used to analyze the hypothesized model using SEM. The goodness-of-fit indices for the hypothesized model fit well to the data.

Keywords: *mathematics achievement, mediation effects, parental expectations, parental communication*

INTRODUCTION

Research about the effects of parental involvement on students' mathematics achievement have revealed that parent's SES and parent's education level play an important role on their children's early and later mathematics achievement (Crosnoe & Cooper, 2010; Clements & Sarama, 2007; Jordan, Kaplan, Locuniak, & Ramineni, 2007). Davis-Kean (2005) noted, however, that the effects of parents' educational level and SES background have not been investigated in a coherent manner because previous studies have found that the effects of these variables on children's mathematical achievement can possibly be explained by other parental variables. For example, Smith, Brooks-Gunn, and Klebanov (1997) found that the correlation between children's mathematics achievement and parental background (namely parent's SES and education level) was mediated by the educational environment at home. Additionally, the mediation effects were higher on parent's educational level than parent's SES. Halle et al. (1997) sampled from parents with low-SES backgrounds, and reported that children's mathematics success was related to parents' educational level. The reason for this relationship was because highly educated parents held more positive feelings towards mathematics and set higher success expectations from school than less educated parents (Halle, Brooks-Gunn, & Klebanov, 1997). Alexander, Entwistle and Bedinger (1994) demonstrated that although parents with low-SES backgrounds set high expectations, there was no correlation between their children's mathematics achievement and their high-expectations; however, there was a correlation between parents with high-SES backgrounds and their children's mathematics achievement. This does not mean that low-income and less educated parents are not concerned about their children's mathematics achievement, but the reason is that they themselves do not feel ready to assist their children because of their own limited educational and financial resources (Clements & Sarama, 2007). Padavick (2009) found that children's mathematics achievement can be increased even when parents read books to their children at an early age, and this early active involvement develops not only

students' mathematical understanding but also their later social interaction. Therefore, research is needed with specific attention to parent-child communication and parental expectations because these two variables can be changed in a way that can help to develop children's mathematical achievement. At first glance, it appears that schools and teachers might be incapable of changing parental attitudes, but thanks to the efforts of educators through educational research's implementations, it is possible to increase parental expectations, beliefs and parent-student relationships (Yan & Lin, 2005). Therefore, the aim of the present study was to determine how parent-child communication and parental expectations play a role in explaining children's mathematics achievement regardless of their parents SES and educational background level.

Literature Review

Home experiences are vital in shaping children's future mathematical interests, beliefs, and motivations. The role of parents in shaping their children's future mathematics' attitudes and motivation is especially key during early childhood. Iruka and Barbarin (2008) noted that parents and families are considered the most essential others who children encounter in the earliest stage of their lives. The reason why parents are considered the most essential others in their children's early and later lives is because children observe and learn from, and later apply as parallel their early observations. Because each parent provides different experiences at home, the observations of each child results in differences related to their parents' attitudes, values, and beliefs about mathematics. All of these parental behaviors lead to different educational emphases in the home (Cross, Woods, & Schweingruber, 2009). To provide more positive educational experiences at home, parents need to be informed about how their involvement affects their children's mathematical skills and knowledge.

Friedel, Cortino, Turner, and Midgley (2010) noted that parental involvement in its many and varied ways is a vital parameter for increasing children's mathematics achievement. Current studies have indicated some specific factors that play an essential role in increasing children's mathematics achievement: Parental aspirations, parent-child communication, home structure, and parents' involvement in school's activities (Singh, Bickley, Keith, Trivetta, Keith, & Anderson, 1995; Wang, 2004). Bicer, Capraro, and Cetin (2010) noted similar indicators affecting children's mathematical achievement either adversely or positively: parents' SES, parents' success expectations from their children's mathematics courses, parental beliefs about mathematics, and parent-child, teacher and school communication.

Parents' SES and Educational Background Effects on Mathematics Achievement

Students who come from low-SES backgrounds enter school far behind their peers who come from higher-SES backgrounds and understand less mathematical topics including but not limited to counting, and number relations (Jordan et al., 2007). Although there has been much research about parental involvement effects on students' mathematics achievement, little attention has been placed on the reasons for the mathematics achievement gap between low-and middle-income students, and how to reduce this SES gap. Cross et al. (2009) further added that there was a huge mathematics achievement gap between low-and middle- SES students even before they enrolled in elementary school, suggesting that low-SES parents can support their children's informal mathematical knowledge and skills by enhancing their readiness before they start school; thus reducing the gap between low-SES students and high-SES. However, this support may be improved by providing information about early and later mathematical development, and its connection to parental support (Starkey & Klein, 2000). Once parents believe their support is of importance to their children' s mathematical development, they will try to provide as many opportunities as they can (Bicer, et al., 2010), and students who have had opportunities at home to learn mathematics demonstrated more mathematical achievement than their peers who lacked such opportunities. Zadeh, Farnia and Ungerleider (2010) showed that providing an enriched home environment was essential for the reading and mathematics achievement of both boys and girls, and they indicated that providing an enriched home environment was one of the options available to influence children's mathematics achievement, particularly that of children of less well-educated mothers. Crosnoe and Cooper (2010) noted that the achievement gap due to the students' economic background was larger for reading but more related to family socialization factors in mathematics.

> Children had smaller gains on the math and reading tests between their kindergarten and first-grade years with each additional marker of family economic disadvantage (especially the combination of low parent education, family poverty, and some third dimension of disadvantage) (Crosnoe & Cooper, 2010, p. 26).

Guo and Harris (2000) found that the economic status of parents has had significant effects on mathematics achievement during early childhood, but its effects have not been shown to be as noteworthy as during later childhood. The reason is because there is a vital period in a child's life when development of cognitive skills is greatest and that is during the time before formal schooling when involvement by parents is generally the highest. In other words, the worst effects of poverty on children can be explained by a lack of early cognitive development within the home (Guo & Harris, 2000). Unfortunately, low-SES students receive less support in their home environment to

develop their mathematical skills than their middle and high-SES peers (Blevins-Knabe & Musun-Miller, 1999). Demir, Kilic, and Unal (2010) found that parents' educational background was also an important indicator for students' mathematics achievement, and noted that if parents had higher educational background, this could increase their children's later mathematics success. Starkey and Klein (2000) noted the gap between students' mathematics achievement associated with their SES background was not only explained by parents' financial resources, but it was mostly based on parents' educational background and exposure to mathematics. For example, although providing board game materials was cheap, and could be easily made at home, most Head Start children were not provided these activity games at home. While 80% of middle-income children reported that they played one or more board games activities at home, only 47% of Head Start children reported that they did (Ramani & Siegler, 2008). This demonstrates one of the reasons for the gap associated with SES background and why it is more likely due to parents' educational background rather than their financial resources.

Demir, Kilic, and Unal (2010) demonstrated that students whose parents were highly educated and exposed to mathematics before in their lives tended to show more success in mathematics than their peers whose parents were less educated and not being exposed to mathematics. The reason for this correlation is because highly educated parents knew the learning requirements and had the opportunity to provide the best educational environment for their children (Alomar, 2006).

> Exploring the contribution of these educational settings is important because interpreting SES effects as emanating exclusively from the family or the child means that policy and program intervention may focus too narrowly as they attempt to improve the educational outcomes of low-SES children (Aikens & Barbain, 2008, p. 236).

U.S. Department of Health and Human Services (2005) reported Head Start programs were not significantly impacting students' early mathematics development. Later, Clements and Sarama (2007) showed similar findings that students who attended Head Start demonstrated little gains in numbers and almost no gain in geometry. Therefore, research in mathematics education should specifically target programs like Head Start and reconsidered it in terms of its impact on children's early and later mathematics achievement, with more parental involvement being encouraged. Also, parent-child, teacher, and school communication need to be integrated into K-12 in various ways to reinforce students' mathematics development (Bicer, et al., 2010).

Parents-Child, Teacher, and School Communication

In order to decrease the gap in students' mathematics achievement, parents might be encouraged to participate in their children's education actively by attending school events, activities and mathematics workshops. Griffin, Case, and Siegler (1994) noted that parent's active participation in small group mathematical activities led to improvement in their children's numeracy skills. For instance, playing games at home such as Building Block and Big Math can significantly impact children's mathematical development (Clements & Lewis, 2009). Reading books at an early age and having students receive help from their parents or guardians with their school homework can also foster children's mathematical development (Padavick, 2009).

Educators and educational programs in K-12 should emphasize parents-teacher, parent-child, and parents-school communication to yield positive effects on students' mathematics development. Bicer et al. (2010) found that obtaining curricular information from schools and/or teachers enables parents to follow the progress of their children; thus they can help their children with problems related to their mathematics learning. For example, when parents understand and are aware of school resources, they can encourage their children to use these resources. This is an especially helpful practice for students who have fewer resources at home. Although some children may have enough resources at home, their parents may not know how to use these resources in effective manner; thus making parent-school communication important. This is because parents can be assisted by school counselors or teachers when they have curricular questions (Bicer, et al., 2010).

Parent-teacher communication is vital for parents to track their children mathematics learning processes from a professional education viewpoint. Bicer et al. (2010) noted that if parents met with their children's mathematics teacher in order to guide their children at home, those children could become more successful than students whose parents did not participate in parent-teachers conferences. Epstein (2005b) demonstrated that students whose parents joined mathematics training and informational workshops had children who demonstrated more success than student whose parents did not attend.

Parents-school or teacher communication might be difficult because of the number of hours parents spend at their jobs, with other children at home, to name a few. To overcome these difficulties, new and innovative ideas can be used to promote parents participation such as online-communication tools (Strayhorn, 2010) or social networking sites. Shirvani (2007) researched four Algebra classes in order to show the effects of parental communication on students' mathematics success, and found that students whose parents received a monitoring sheet about their

mathematics' performance outperformed students whose parents did not use the sheet. Hyde, Quest, Alibali, Knuth, and Romberg (2006) noted that parent and school communication was more important for students whose parents did not possess enough mathematical background than for students whose parents had a strong mathematical background. This might be because less-educated parents may not know how mathematics plays a crucial role in their child's later education lives, and then they may not transmit more positive feelings to their child about mathematics.

Research has revealed that families from low SES background did not communicate with their children's school and teacher as much as parents from high SES background did. However, clear reasons have not been identified as to why families from low SES backgrounds often do not participate in educational programs and activities, and what else can be done to increase their participation (Cross et al., 2009). It has been shown that teachers, schools, and educators cannot easily change parental involvement structures, but communication between parents-child, parents-teachers, and parents-school can change parents' attitudes and beliefs about mathematics (Yan & Lin, 2005). Parental expectation as one of the important parental involvement parameter can be shaped by parental communication. Epstein (1995a) noted that in order for children to be successful in mathematics parents needed to demonstrate high expectations for school achievement despite their socio-economic background.

Parental expectations and beliefs about their children mathematics achievement

Parents can increase the potential development of their children mathematical knowledge and skills by setting high expectations and providing stimulating environments (Cross et al., 2009). Because early education years have been found to be so vital for children's later mathematics achievement, children need to be supported by their parents in their social, emotional, and cognitive development in addition to instructional support in mathematics. What happens at student's homes is related to their mathematics intrinsic motivation in childhood and later improvement through high school (Gottfried, Gottfried, & Oliver, 2009).

Parents' behaviors are crucial for their children attitudes towards mathematics (Hyde, Quest, Alibali, Knuth, & Romberg, 2006), but the relationships between parents' academic reinforcement and student's mathematics achievement was not found a significant. However, a significant relationship was found between the parents' mathematical values and students' mathematics achievement (Hong, You, & Wu, 2010). If parents thought mathematics was important, they could transfer this importance to their children's mathematics success; thus they have more positive attitudes towards mathematics.

Much research has shown the relationship between parental beliefs and attitudes, including the expectations of parents, target orientations, and ability beliefs' children espouse (Friedel, Cortina, Turner, & Midgley, 2007). However, most parents thought that the mathematics skill of their children is less important than other skills of their children. Barbarin et al. (2008) demonstrated that parental time spent on literacy skills was rated at 50%, however, the time they spend on their children's numeracy skills was rated as only 3.5%. Cannon and Ginsburg (2007) also concluded similar findings as mothers thought learning literacy, and developing language skills were more important than learning mathematics. The survey done by these researchers showed that mothers spent much of their time developing their children's language usage, however, they devoted less time to working on mathematical skills with their children. However, to decrease the gap between Low-SES and High-SES background of students mathematics achievement, parents' role should be mentioned as follow:

> Parents need to become teachers within their homes. There are two key reasons behind this statement: (a) parents can influence their children by being their original teachers of intrinsic motivation, morals, and discipline; and (b) they can capitalize on the teachable moments that happen in abundance in the home! (Padavick, 2009, p. 97).

By providing more positive encouragement, parents can support their children's mathematics success. Canavagh (2009) reported that parents helping to improve their children's skills in mathematics leads to an increase in their children mathematics test scores. Children who received high levels of encouragement showed more persistence and effort when they faced difficult mathematical tasks (Hokoda & Fincham, 1995). Tocci and Ergelhard (1991) indicated that the higher levels of encouragement children received from their parents, the more positive the attitudes they displayed in their mathematics courses. In contrast, when the lower level of encouragement children received from their parents, the higher mathematical anxiety these children demonstrated. Almost all parents tried to encourage their children in mathematics, but they either did not know how to involve and/or they did not know why their involvement was important. Cavanagh (2007) showed that parents can make mathematics more interesting and joyful for their children by practicing real world informal mathematics that schools usually do not provide. Students whose parents were aware, knowledgeable, encouraging, and involved tended to gain higher academic achievement than students whose parents were not. Despite the differences between parents' backgrounds, a general view to be successful in mathematics was when parents showed high expectations for the school achievement of their children (Epstein, 1995a).

Purpose of the Statement

The present study's purpose was to examine how the socioeconomic background of parents, namely parents' income and parents' educational level, indirectly relates to children's mathematics achievement as mediated through parental expectations and parental communication.

METHOD

Participants

To conduct the present study, many relevant samples from previous studies were reviewed to find the best fit answer associated with the purposes of the study. After analyzing many data sets, one correlation matrix reported by Davis-Kean (2005) was selected because this matrix included all the variables which were previously selected for use in this study. In the present study, only 5 variables (see the correlation matrix in Table 1) associated with the present study were purposefully selected among 27 variables.

Table 1. Correlation Matrix

Variables	Parent's Education	Family Income	Parental Expectation	Parent-Child Communication	Mathematics Achievement
Parent's Education	1				
Family Income	.53	1			
Parental Expectation	.42	.34	1		
Parent-Child Communication	.17	.18	.24	1	
Mathematics Achievement	.38	.33	.44	.21	1

This correlation matrix was derived from a national, cross-sectional study of children, the 1997 Child Development Supplement of the Panel Study of Income Dynamics (PSID-CDS) data set were used. The data-set included families with children up to 12 years of age. In cases where there were more than 2 children at home, only one child from each family was randomly selected to avoid perfectly correlated data. The PSID data-set included interviews, home-observations, and students' reading and mathematics achievement scores. The preset study sample size was 868 because the correlation matrix reported by Davis-Kean (2005) reported only the sample of 868 students from the 1997 PSID data set. This sample includes 8-12 years old middle school students, and their gender was equally distributed with 435 females and 433 males. The ethnicity of participants were mainly European American (n= 423) and African American (n= 411), with the remaining (n= 34) from the other ethnic backgrounds.

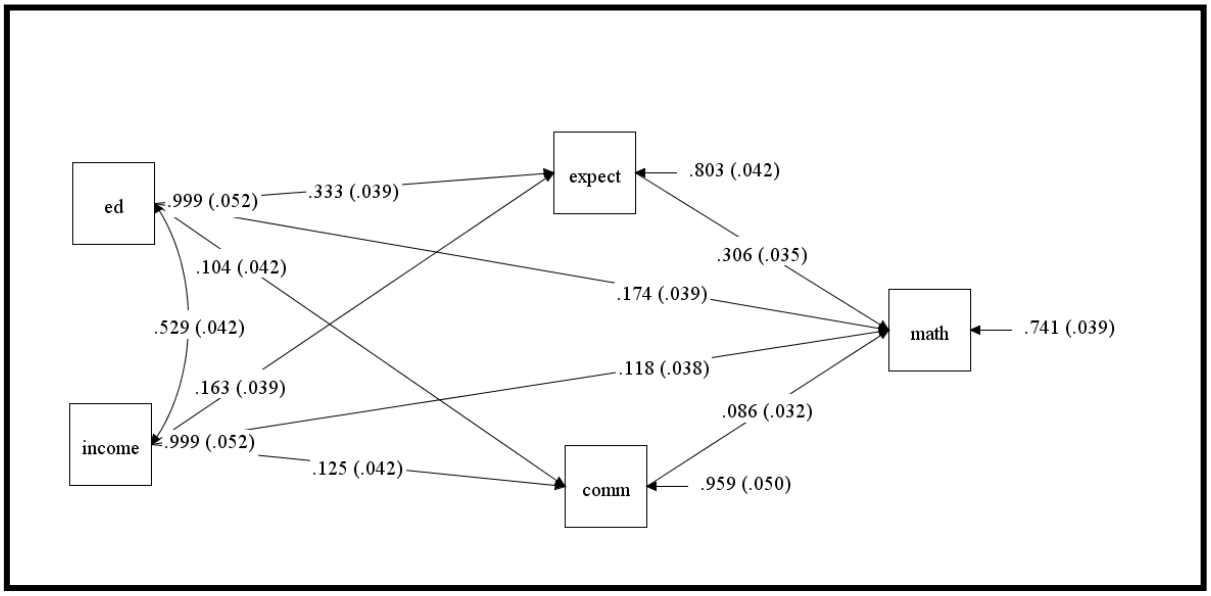
Measures and Analysis

In the present study parent's income, parents' education, parents' expectation, and parents-child communication were selected as predictor variables, and students' mathematics achievement score was the outcome variable. To test the hypotheses that parent income and education indirectly influenced children's mathematics achievement through parental expectation and communication, structural equation modeling (SEM) in M-plus was employed to estimate the fit of the hypothesized model (see Figure 1). All fit indices in M-plus were taken into account to determine whether or not the hypothesized model fit the given data.

RESULTS

The results from the SEM analysis revealed that parent's income and parent's education were related to students' mathematics achievement indirectly through parental expectations and parental communication. The goodness-of-fit indices for the hypothesized model were: chi-square (1= df) = 23.093, CFI = 0.95 and SRMR= 0.04 indicating that the hypothesized model (see in Figure 1) fits well to the data, and the explained variance of children's mathematics achievement (R^2 = .25). Without parental expectations and parental communication, the explained portion of children's mathematics achievement by parent's education and parent's income was (R^2 = .16).

Figure 1. Standardized parameter values of the model.



According to the hypothesized model, all paths other than the two paths (one from parental communication to students' mathematics achievement, and the other from income to parental communication) drawn were statistically significant, and each path was positively estimated as shown in Figure 1. In the hypothesized model, the direct path through parent's educational level to students' mathematics achievement (β = .17, p < .005), the direct path through parent's income to students mathematics achievement (β = .11, p < .005), and all other indirect paths were non zero; thus suggesting that parental expectation and parent-child communication have mediation effects on students' mathematics achievement, but this mediation effect was partial. In other words, students' mathematics achievement was not fully mediated by the indirect path of parental expectation and parental communication. The mediation effects of parental expectation on parental education level to explain students' mathematics achievement were (.333x .306 = .101) about 10 %, and had the largest mediation effects on mathematics achievement compared to other mediation effects in the hypothesized model. Therefore, the present study suggested that there might be other mediation effects which were not taken into account in the hypothesized model. Table 2 through 5 shows the estimation, significance, and relationships to variables of each path in the hypothesized model.

Table 2. Standardized Parameter Estimates, p Values, and Relationships of Variables

Variables		Estimates	p	Relationship
Mathematics on	Parental Communication	.08	>.005	Positive
	Parental Expectation	.30	< .005	Positive
	Income	.11	< .005	Positive
	Parent's Education Level	.17	<.005	Positive

Table 3. Standardized Parameter Estimates, p Values, and Relationships of Variables

Variables		Estimates	p	Relationship
Communication on	Income	.12	>.005	Positive
	Parent's Education Level	.10	<.005	Positive

Table 4. Standardized Parameter Estimates, p Values, and Relationships of Variables

Variables		Estimates	p	Relationship
Income with	Parent's Education Level	.53	<.005	Positive

Table 5. Standardized Parameter Estimates, p Values, and Relationships of Variables

Variables		Estimates	p	Relationship
Expect on	Income	.16	< .005	Positive
	Parent's Education Level	.33	<.005	Positive

DISCUSSION

The present study examined the effects of parental-expectation and parent-child communication as mediator variables on parents' educational level and parents' income to explain students' mathematics achievement. The hypothesized model proposed that parents' education level and parents' income were indirectly related to students' mathematics achievement through the parental expectation and parent-child communication. In the model, parental expectation has the largest mediation effects on parents' education level to explain students' mathematics achievement. This suggests that parents with higher educational backgrounds set a higher success expectation from school to their children. However, the mediation effects of parental expectation are small on parents' income to explain students' mathematics achievement. The reasons why parental expectation has larger mediation effects on parents' education level rather than parents' income might be because: 1) highly educated parents are more likely to be believers of mathematics importance on their children lives; thus they transfer their positive feelings and attitudes to their children (Hong, You, & Wu, 2010). Once students are exposed to positive mathematics feelings and attitudes, their intrinsic motivation towards mathematics can increase (Gottfried, Gottfried, & Oliver, 2009) and they want to be more successful in mathematics, 2) students whose parents were highly educated and exposed to mathematics before in their lives tended to show more success in mathematics than their peers whose parents were less educated and not exposed to mathematics (Demir, Kilic, & Unal, 2010). Therefore, because highly educated parents knew the learning requirements and had opportunities to provide the best education environment for their children (Alomar, 2006), their children were exposed earlier to mathematics in the most effective home educational environment.

In the hypothesize model, there are two non-statistically significant paths; one is from parents' income to parent-child communication, and the other is from parent-child communication to students' mathematics achievement. This is surprising because the literature revealed parental communication is one of the important parental factor on children' mathematics achievement. However, the reason why these two paths are not significant might be due to the present study's limitation that parent-child communication was selected as only one variable, but there are various parental communication namely parent-child, parent-school, and parent-teacher. Further research needs to investigate all three parental communication dimensions to determine the role of parental communication on students' mathematics achievement.

In summary, parental expectation and parental communication are two important variables that can increase students' mathematics achievement. Regardless of parental background related to SES and education level, the gap between high and low SES background students' mathematics achievement can be reduced by increasing parental expectations and parental communication. Once parental communication is establish, parental expectation will more than likely happens by itself. This is because once parents communicate with their children and their children's teachers; they may become more knowledgeable about their children needs.

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The Use of Technology in Academic Translator Training in the Restructuring Process of Higher Education

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ABSTRACT

As the present age is communication age, the function of translation in this environment is gradually increasing. As a consequence of the developments occurring in the present century, it seems inevitable that translation be performed by means of today's technological/electronic tools and resources. Accordingly, technological tools have taken their place in translation education as well. The most important reason of this is the expansion of translation fields and the increase in what is expected from the translator. In this framework, the translator is expected to use computer assisted translation tools, to create translation memory, to access information and use resources. In this article, it has been focused on how and for what purposes technological/electronic tools and resources such as computers and computer hardware will be included in translation education within the context of Bologna process for the purposes of gaining these skills and meeting the expectations. In this regard, how the Bologna process is reflected in translation education will also be examined carefully.Translation occupational standards and specifically the use of information technologies have been discussed within the framework of the projected revisions in Bologna process. Besides, the approaches towards the academic translation education have been examined within the scope of this process. In addition to this, parametres necessary for the future of translation education have been determined and some conclusions have been reached for future studies to be carried out in translation.

Keywords: *Bologna Process, Translation Occupational Standards, Academic Translation Education, Computer Assisted Translation*

INTRODUCTION

The establishment of the departments giving academic translation education dates to early 80's. The increase over time in the number of the departments giving translation education brought various approaches in this field. Among those approaches, the most common one is the view that market expectations should be kept in mind while creating programs. However, it is not possible to train students as ready staff for the market in a 4-year education[1].

As a result of the developments taking place in the present century, the restructuring of higher education has become a current issue. In 1999, the first steps were taken in this direction. How did/will the revisions realized/to be realized in line with the objectives of the Bologna process and be reflected in academic translation education? How did/will these revisions affect the academic translation education? In this study, these questions will be answered by focusing on the use of technology in translation education. Accordingly, the approaches towards academic translation

[1] c.f. Eruz 2004:158

education will be examined. In addition to this, the Bologna process and occupational standards of translation in parallel with it will be examined; current parameters will be determined and conclusions will be drawn about the inclination of translation education. The aim of this study is not to make characteristic determinations and providing a closing remark to the discussions but to bring questions about the objectives of translation education and to ensure that they are being reconsidered according to the changing conditions.

The Use of Technology in Translation

It is known that the translation activity is not just a simple transfer occurring between the languages. The need for translation, which increases each day in every field started to require better quality the translators performance during the translation activityBesides the existing fields, new fields started to emerge with the recent developments in translation and related fields. What needs to be questioned at this point is how the use of technology is involved in education programs. Examining the use of technology in translation will be providing answers to these questions.

Various developments that took place in the 20th century were also reflected in science and technology as well as in social life. These developments affected international relations and increased the need for translation. Computer -aided translation became a current issue in translation field with the invention of computer in 1950's. In his article titled "Foundation of Computer Assisted Translation Activity", İlyas Öztürk explains the developments in "mechanical translation" as follows:

> The period when works in this subject intensifies is 1950's and 1960's. As the progress and success in these years were limited, satisfactory translations were not achieved. The works that started in 1950's continues powerfully and as a result of them, significant achievements have been made today. Fully automatic translations have not been reached with these accomplishments and human translation should undoubtedly be put into use. While on one hand works on scientific methods are carried out in order to create better and more accurate translations, on the other hand new theories and views come on the scene." [2]

The expansion of the working field of translators has brought with it various expectations such as technology use. Translators as experts are expected to improve themselves and to cope with the needs of the current conditions in order to meet the demands. This is also reflected in education. Developments taking place in our century increased the responsibilities of the institutions giving translation education and forced them to change their objectives and introduce innovations.

> "It is surely important to learn how to use technical tools, such as computers. Computers are important tools for both creating texts and correcting them rapidly, and prepare the list of literature and databanks. Today we can say that there is no field left operating without using computers."[3]

Margret Amman emphasizes that technical tools are used widespread in every field. As a consequence of the developments taking place in our age and especially in parallel with the prevalence of technology, the use of technology has taken its place in translation activity as well. We noted above that the most important reason of it has been the increase in what is expected from the translators due to the same developments.

[2] Öztürk

[3] Eruz 2004:24

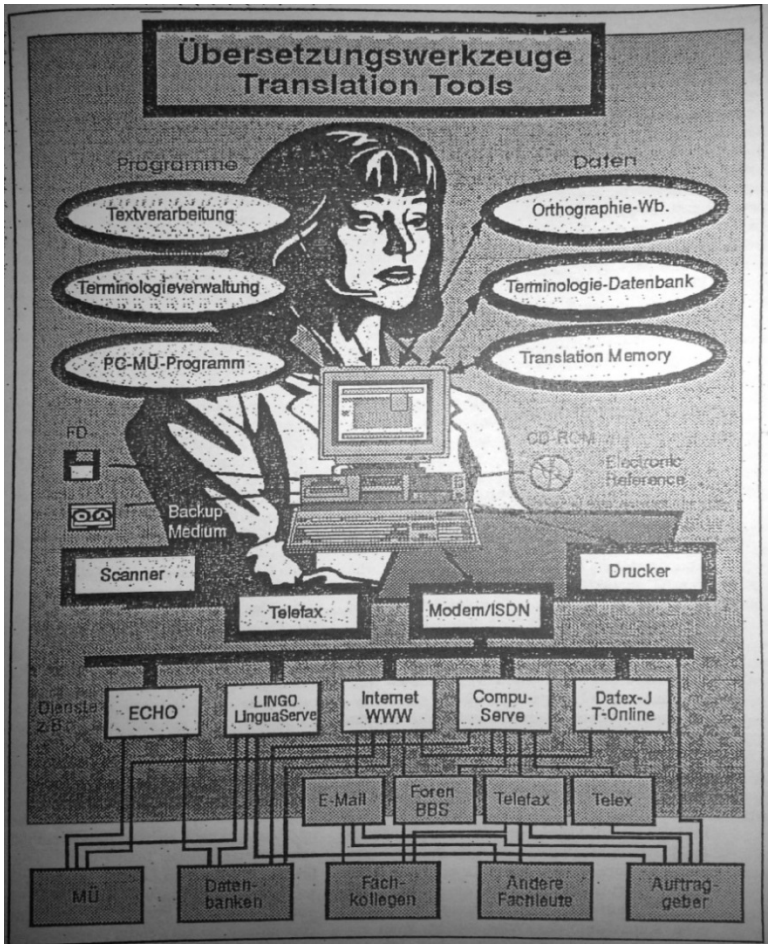

Figure 1: Tools that the translators benefit from[4]

According to Peter A. Schmitt, the above figure is important in that it clarifies the sources that the translators benefit from in technology use. By making good use of this figure it is possible to say that technology from a translation point of view shows its face in three ways. The tools and devices used by the translators (for instance, computers, printers, scanners etc.), translation material (for example website localizations) and the tools and resources the translators benefit from in translation process (online dictionaries, translation programs, memories etc.) are important in this process.

As the fields expand accordingly, what is expected from the translators has also increased in this framework. While translation demands increase in such fields as technical text autorship, localizations of computer software, website translations etc, the translators are expected to perform computer-assisted translations, to use translation programs and translation memories etc.

In her book Susanne Hagemann "Translationswissenschaft und der Bologna-Prozess: BA/MA-Studiengange fur Ubersetzen und Dolmetschen im internationalen Vergleich" tells the developments and transformations about translation education andexplains the changes as follows:

> "The tools and the equipment of the translators are not any more just paper, pencil, typewriter and printed sources, but computer, internet and all the opportunities it provides."[5]

The vastness of the opportunities quoted by Hagemann is known by everyone. For the translator, it means to know how to utilize increasing opportunities with an ever advancing technology. Since the working area of the translator is the market, then the expectations of that market are too important to be underestimated. The importance of translation education should be stressed at this very point. In order to answer such questions as "What is the situation of the institutions that give translation education?", "What sort of an endeavour do the candidate translators need to show and who are able to follow the progressing technology and who are able to know how to

[4] Peter A. Schmitt(1998) "Technische Arbeitsmittel" in Handbuch derTranslation"

[5] Hagemann, 2004:10

profit from that technology ?" and "Do the education institutions train ready personnel for the market within this sense?" In order to answer these questions it is essential to examine the Bologna process and translation occupational standards closely.

Bologna Process And Translation Occupational Standards

The effects of technological and scientific developments are deeply felt in translation activity when it is compared to various different fields. Bologna process is one of the most visible indications of this effect. It is the restructuring process of Higher Education System implemented by the member states. All the actions performed by professional competency board do have an utmost importance in this restructuring process.

In regard to shareholders, all the attempts related to the restructuring of higher education system have been conducted in Bologna process where Turkey along with many countries have also been a part of this process. The reasons of this need and its relation with the market that are explained in the booklet of Bologna process are as follows:

> "Economic, social, cultural, political, scientific and technological developments taking place in the present century make it necessary for the higher education to be restructured. As the demand for higher education increases in information societies, it requires the higher education systems to develop accountable and transparent processes. New technologies make it possible to use new materials in education and research fields and increase the importance of flexible learning ways and life-long learning. In addition, the importance of the relationship between the higher education institutions and business world increases along with the increasing demand for the higher education in globalizing economies."[6]

Bologna process formally began with the Bologna Declaration signed in 1999. The studies carried out within the framework of this process, have ensured and consisted of two-stage degree system consisting of higher education undergraduate and post-graduate with a European Credit Transfer System (ECTS) provided the mobility of students and instructors. It is aimed to develop the quality assurance and European dimension in higher education system.

Within the framework of these objectives, shareholders of the professions have taken their position in the program improvement stepsfor higher education. External shareholders, graduates, representatives of employers and professional chambers and an advisory committee were also involved in this process. The contributions of all the shareholders revealed the importance of relationship between academy and market. If it is interpreted in terms of translation education, then the shareholders, graduates, translation business enterprises become the objective group. In this regard, it is essential to take into consideration and involve all the related shareholders in the restructuring process of translation education.

In the light of all these datas, firstly the expectations of the market needs to be determined in order to interpret the reflections of Bologna process in translation education. Benefiting from not only the studies "Professional Competency Board", which is specifically acting as a decision body in the restructuring process of higher educationbut also the translation occupational standards will make it possible for us to progress over concrete determinations.

Professional competency board "determine the essentials of national competencies in technical and occupational fields, and conduct activities related to inspection, assessment and evaluation, documentation and certification"[7]. It is also mentioned in the explanations of Bologna Process that the studies conducted by the board should be taken into consideration in the structuring process of higher education;

> "Determining the professional competencies is among the main tasks of PCB. Professional competencies are essential in terms of forming educational programs in line with the requirements of

[6] "Restructuring in Higher Education: Applications of Bologna Process in 66 Questions", http://bologna.yok.gov.tr/?page=yazi&c=0&i=129 , 2010:2

[7] These information has been taken from the formal website of Professional competency board http://www.myk.gov.tr/index.php/tr/hakkimizda/genel-olarak

business market and determining the skills of the individuals to perform the profession. "[8]

Occupational standards directly contribute to the translation education. Occupational standards have been defined by a group of professionals whom have taken the views and perceptions of the related shareholders. . These shareholders are as follows;

Ministry of European Union Translation Coordination Directorate, Turkish Translator's Association, Conference Interpreters Association of Turkey, Association of Translation Enterprises, Republic of Turkey Ministry of Foreign Affairs, Translation Enterprises, Translator Associations and Universities. Since the determination process of the translational professional standards studies are still ongoing, the information that has been analysed within the framework of our study has been taken from the existing draft.

Technology use in the translation profession has been particularly included in the examined draft. Among the tasks of the translator which are defined inseven categories, do have relations with technological tools;:

- He/she eliminates Translation Memory repeated entries
- He/she performs updates and improvements in an effort to keep the memory clean according to terminological changes and content similarities
- He/she makes possible the width of translation memory usage area relating to the operations of import and export
- He/she checks the appropriateness of the cabin and voice hardware of the environment where simultaneous translation will be performed according to the standards
- He/she checks the functionality of the technical hardware and software by means of which he/she will perform written translation and renders them suitable for use
- He/she translates the content of the speaker simultaneously with the help of technical equipment
- He/she follows the professional and sectoral developments through relevant sources and reflects them in his/her works.[9]

When we have a look at these tasks, we see that the area of responsibility for the translator is not only limited with the translation product. The translator is expected to have a command of the tools he/she uses and benefits from, and checks and updates them continually. Considering the technological tools used by the translator in the working environment, the importance of technology in the translation profession is revealed. The first thing that comes to mind when talking about technology is the use of computer . Text creating programs, skills of creating terminology, mechanical translation programs, skills of creating memories and utilizing them, database use are included in it as well as the use of printer, scanner and in general computer. It is necessary to examine the objectives of academic translation education in order to explain how much it is possible to make the students to gain all these skills.

Objectives of Academic Translation Education

It would not be wrong to say that translation education is formed according to the translation understanding prevalent in its existing period. According to the traditional point of view, translators "are persons that mediate between different languages"[10]. This point of view which attributes the language primary importance is directly reflecting on education as well. Translation education was formerly given by the departments of foreign language teaching and philology, but after the translation studies was gained its position as a scientific approach, departments of translation have started to be founded.[11]

The increase of translation need in the market brought new responsibilities for education institutions each day. The expansion of translation field led to the questioning of the **objectives** of translation education. These approaches

[8] "Restructuring in Higher Education: Applications of Bologna Process in 66 Questions", 2010:33

[9] See Professional Competency Board Translation Profession Standard Draft Text http://www.myk.gov.tr/index.php/tr/haberler/34-meslek-standartlar-dairesi-bakanl/1056-myk-calma-grubu-tarafndan-taslak-meslek-standard-hazrland 2012: 10-17.

[10] Ammann, 2008:14

[11] For detailed information in translation education, see Eruz, Sakine (2003, 2008)

particularly focus on the formation of translation education and the extentşon of translation staff whom could be trained for the market. One of the most important approaches commonly adopted among these views is the opinion of Christiane Nord. In her article "Praxisbezug im Übersetzungsunterricht – Wie realitätsnah muss eine universitäre Translatorenausbildung sein?"she mentiones her ideas as follows;

> "Eine Universitätsausbildung soll eine wissenschaftlich fundierte, breite Grundlage für ein Berufsfeld vermitteln. Das heisst, es werden Juristen, nicht Richter oder Staatsanwälte, Mediziner, nicht Neurologen oder Genforscher, Translatoren oder Experten für interkulturelle Kommunikation und nicht Konferenzdolmetscher / Fachübersetzer für Elektrotechnik ausgebildet."[12]

These words seem to sum up Nord's views on translation education. Nord points out the fact that there is neither any education for the specific field of expertise in academic translation nor in other professions. What is stressed here is that it is not possible to train translators prepared for the market. Nord also explains the point that the translation education should be including theoretical and historical information (contemporary translational theoretical models, the history of translation theories, translation oriented text analysis, communication models etc.) so as to form the basis of translatological competence.

Noting that it is also important for the translation oriented research and documentation methods to be taught in a systematic and application-focused manner, Nord lays stress on the necessity that the students ought also to be informed about the technological supplementary tools for translation act. In addition, Nord makes it clear that it is necessary to inform the students about translation problems and finding a solution for them on the basis of the theoretical information given in translation education and real or near-real examples in translation practice.[13]

There is a need for translation in every field of life. How could the expectations in many fields like medicine, law, technique, politics be taken into consideration?The answer of this question lies at the objectives of academic translation education. In her paper where she examines "The Relation Between Academic Translation Education and Translation Market", Neslihan Demez interprets Nord's statements in such a way:

> "I am of the opinion that it would be wrong to interpret Nord's opinion that academic education should offer a wide viewpoint towards a given profession rather than offering an expertise in that profession in the manner that the academy is against expertise, that it does not consider the conditions of the market and that it does not prepare the studens for the market. What is wished to be emphasized here is that academic education aims to give the students the skills of multi-purpose thinking, evaluating the events from different points of view and positioning them within different contexts."[14]

This explanation of Demez should not be overlooked. It is acceptable that the educational objectives of the translation education departments can be different however the above mentioned points need to be taken into consideration as a priority in curriculum and content planning. Likewise, approaches overlapping with this view have been brought by various translatologists.

Turgay Kurultay discusses the main objectives of translation education in his article "WWhat are the "condiciones sine quibus non" of Translation Education? An Essay on Determining Main Principles in Translation Education" and states that a graduate of translation studies should have;

- To be able to create functional and active texts with specific aims, to be able to criticize the texts of others and suggest corrections.
- To be able to approachanalytical to a given translation task, to make suggestions about the features of the final product to the person who gives the task and act as consultant (if necessary to give suggestions about the translated text in question).
- To decide whether taking or not taking the suggested work, to make a self assesment about the personal

[12] Nord, 1990:9

[13] c.f. Nord, 1990:11

[14] Demez, unpublished paper, 2008, titled "The Relation Between Academic Translation Education and Translation Market"

skills, knowledge and working conditions.

- To be able to translate for different purposes and to be able to take decisions as required by the communication environment.
- To be able to perform consultancy and mediation in an interlingual communication; to be able to determine, the necessary knowledge and comprehension for creating a common understanding ground for the related parties
- To be able to create a realistic working network in order to perform the undertaken task with a productive and satisfactory manner.[15]

It is particularly remarkable that the skills listed by Kurultay are broad in scope. It is the 'consciousness' that is being tried to be earned by the student for this objective. Accordingly, a translator is expected to be aware of the work he/she is performing and the responsibilities he/she will be undertaking. Stating those facts requires a specific intellectual background besides those skills. Kurultay lists the main parameters for translation education as follows:

- Creating a substructure with a wide perspective for a basic education;
- Introducing the translation process as a whole;
- Leading the student for an individual study;
- If a skill-focused field is chosen it is necessary to define the objectives of vocational educationand related fields;
- Treating different fields, different texts and different translation tasks in a comparative manner;
- Offering theoretical information as a justification tool for practice;
- Gainining translation skills not a matter of having high quantity in translationpractice but rather performing translation with a manner of methodical class practices oriented for specific skills;
- Teaching to practice with a systematic way and making use of supplementary tools and showing the students how to approach critically and come to an evaluation (within this scope, teaching the students to work with the field experts and benefit from them for the purposes of translation in a practical way);
- Informing the student about the field of practice (market).[16]

It will be fruitful to consider these parameters in when preparing programs for the translation education in order to to reach its objectives. It is observed that these points also cover technology use in translation education. It is clearly seen in the profession standards draft that technology is an necessary in translation profession.

Technology in translation activity is devided in three parts. In order to objectify this study to make evaluations within the framework of parameters mentioned above it will be beneficial to give an example about translation program that the translator benefit from as a research field and supplementary tool.

Technology in Translation Education

Today it is inevitable to use translation technologies and computer assisted translation tools not only in the marjket but also in translation education programs. The student is informed about the importance of technology use both in research methods and in computer assisted translation practices.

The classes that have computer assisted translation are included in education programs in general. Within the scope of computer assisted translation classes of some departments introduce Trados to give translation education. Trados is one of the most commonly used program . the presence of these kinds of software programs included in education programs can be interpreted as a result of market expectations. However, if the content of the class is examined, it is observed that this class has been included in curriculum only for teaching the Trados program. The

[15] Kurultay, 1997

[16] Kurultay, 1997

developments that have been occurring since the beginning of mechanical translation history until today are being the matter of discussions within the scope of the class practices. The students are informed about theknowledge and skills that are essential within the market such as computer assisted translation programs and online dictionaries. The Trados program is given after the students have all of these related information about technology usage. Here are the following features:

A. Translation Memory: One could benefit from the translation memories offered by SDL Trados as well as from the ones offered by other servers. For example, IATE.

B. Automated Translation Server: Translation is performed by a machine. The resulting translation is formed in a server and therefore it is realized by means of connecting to a server. For example, SDL BeGlobal or Google Translate.

C. Termbanken: You can use your databases or those databases created by others. You can also use server based term databases.

D. AutoSuggestWörterbücher: This feature enables the translation to be completed rapidly. When you enter a letter for the objective text the system automatically makes a suggestion and you can use those suggestions as well. You can create new ASW or choose the existing one.[17]

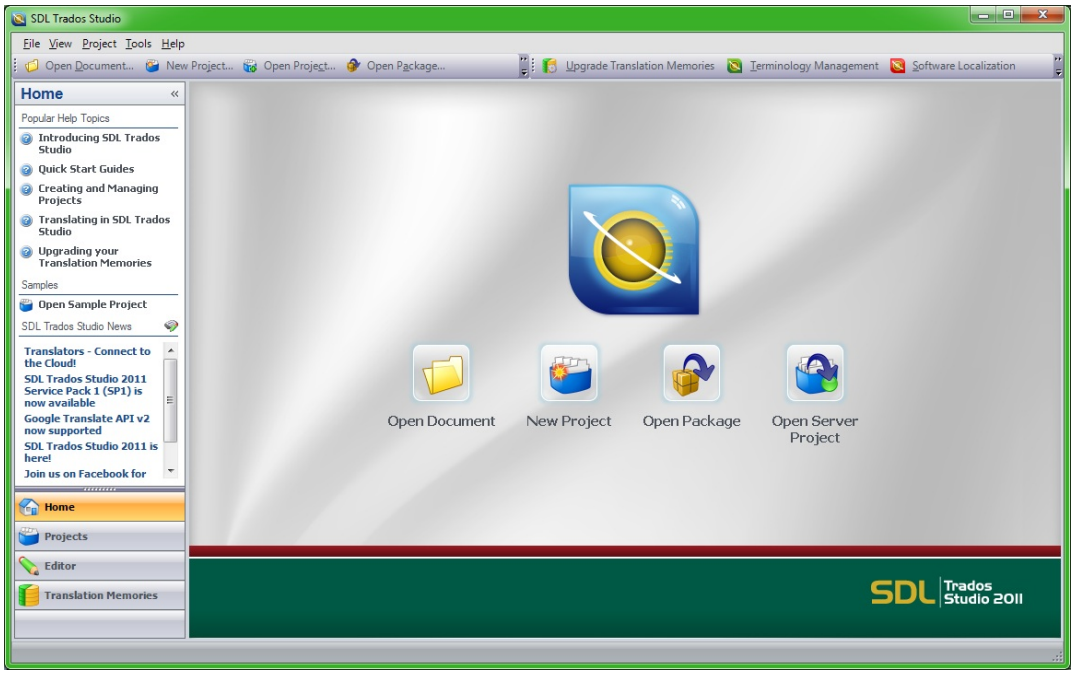

Figure 2: SDL Trados Studio 2011 Main Page View[18]

Here the students are informed about the features of Trados, a computer assisted translation program, and the students are taught how to use it. What if Trados, which is commonly used in continually developing technology, loses its popularity?

If we start from the objectives of academic translation education explained above and to study carefully the technology use in translation education, it is necessary to say that it would be appropriate to adopt an approach similar to the translations of specific fields. It is evident that it is impossible to train translator candidates /the students with a high level of competency with all of their skills developed .

At this point the question of how to keep up with the ever progressing and developing technology in education programs comes to mind. Undoubtedly, this should not be considered as an exclusion of translation programs from

[17] Can: EBS Trados Lecture Notes: http://www.ebs.sakarya.edu.tr/ebs_2012/?upage=fak&page=drs&f=02&b=16&ch=1&dpage=tnm&InKod=8265&dpage=all

[18] SDL Trados web page: http://www.sdl.com/products/sdl-trados-studio/

the education. What matters here is the skills that are desired to be acquired by the students. For instance, translation programs are all essential in the field of translation activity. Yet, one should not forget that the translation programs used in the market may also differ from each other.

If we consider the education objectives that we have discussed above, we can list the skills that are aimed to be earned by the student about technology use as follows:

- To be able to evaluate technology as a whole;
- Comprehending the general logic of computer assisted translation programs;
- To be able to benefit with a conscious manner from the technological supplementary tools with the method knowledge he/she has learned;
- To be able to envision -and provide solutions to- the problems that he/she could face when working with programs of this kind;
- To be able to compare and critically question a new program he/she could come across;
- To comprehend the logic of translation memories and term databases, to make use of them, update and create them;
- To be able to adapt to the new situations that he/she could find himself/herself in.

In addition to these, the expectations in the translational professional standards that we have told above should be taken into consideration in the technological objectives of translation education.

CONCLUSION

In this paper, technology used in translation education was discussed within the scope of restructuring process of higher education. In this context, one of the main objectives of Bologna process which was creating relationship between the higher education institutions and business world, was taken into consideration. The studies of Professional Competency Board about the professional translation standards were discussed. Objectives of translation education were taken within the framework of the acquired information and the issue of technology in translation education was examined within the scope of computer assisted translation. The expectations from the translators about the computer assisted translation were mentioned and accordingly some skills that a translator candidate should possess in his/her translation education were listed.

Although the fact that such programs as Lingua-soft, Trados, Systran which are used in translation market are given in translation education create some further problems they may have some help for the translation market. In this process, the acquired information will lose its accuracy by the developing technology and the translator will encounter new, much more advanced programs. Despite the fact that the daily increase of the translation programs used in the market make it harder for the translators to follow these developments; education programmes may turn them into a possibility and an opportunity to develop basic competence and coping skills in use of translation technology. However it is not realistic to consider that all of the translation programs can be taught when we consider the variety of market expectations. The institutions giving translation education should be aware of this fact.

In the light of the above mentioned facts, it is necessary to consider market expectations within the objectives of academic translation education. It is possible to claim that this act of turning towards the market will be more intense in the future. While the supplementary tools which are included in translation education such as Trados are introduced to the students, the intention should be to give basic information about the general logic of using such programs. Training the students for the market conditions is not only the matter of teaching one supplementary tool but rather ensuring that they are able to approach with a wider perspective and know how to use technology. Performing the translation act by using the technology in an education process is also the prerequisite of Bologna process.

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