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The Relationship Between Final Grades and Tutoring Methods of At-risk College Freshmen

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This is to certify that the doctoral dissertation by

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Walden University
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Abstract

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Valeria A. Russ

M, Webster University, 2003

BA, Fayetteville State University, 1999

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Psychology

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Abstract

Without academic intervention, such as tutoring, at-risk students may not pass their courses. This study examined differences between the final grades of at-risk students and tutoring methods, such as self-determined tutoring, academic advisor scheduled tutoring, group tutoring, one-to-one tutoring, peer tutoring, and professional tutoring. This study drew from cognitive learning theory and humanistic theory for its conceptual framework. A quantitative, ex post facto research design was used. Archived data supplied by the Registrar's Office and the Academic Enrichment Coordinator included records of 95 male and female students conditionally enrolled at Methodist University in the Academic Enrichment Program during the 2007 to 2009 academic years. The results of an independent samples *t* test determined there was a significant difference between final grades of students who had self-determined tutoring compared to those who had academic advisor determined tutoring. Results of a one-way analysis of variance determined there were significant differences in final grades of students who received group tutoring compared to one-to-one tutoring and peer tutoring compared to professional tutoring. The preliminary results raised questions of the importance of tutor status in a group or one-to-one setting. A post hoc analysis using a paired-samples *t* test revealed a statistically significant difference in final grades of students in group settings but not in one-to-one settings. The results of this study offer the potential for positive social change to those in higher education by advancing the understanding of how to support and provide intervention programs, such as tutoring for at-risk students, in order to reduce their risk of academic failure during college.

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Dedication

I dedicate this dissertation to my Lord and Savior who gave me the mind and strength to continue on the path. I would like to dedicate this dissertation to my family and close friends who have supported me in this endeavor. My two sons and friends have demonstrated immeasurable patience and understanding while my time has been focused elsewhere. All the words of encouragement have helped me continue on this long process even though there have been many life changes along the way.

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Chapter 1: Introduction to the Study

Introduction

Students with different academic abilities are being admitted into postsecondary schools (Laskey, 2004). This results in an influx of students who may not have the skills to be successful at the college level. Students may be considered at-risk for achieving academic success for a variety of reasons. Maxwell (1997) stated that at-risk students' skills, knowledge, motivation, and/or academic ability are significantly low compared to students who are not at-risk. As a result, many colleges and universities have had to provide intervention programs such as tutoring to attend to the needs of all students, especially those who are considered at-risk students (Thompson & Geren, 2002). In addition to tutoring programs, some colleges and universities have opted to conditionally admit academically at-risk students. The number of students enrolling in colleges and universities has grown approximately 25% in the past20 years, and the number of academically at-risk students has also increased (Heaney & Fisher, 2011). Conditionally admitted students have a contract with specific guidelines they must adhere to in order to maintain their enrollment, with mandated tutoring sessions being one requirement (Methodist Enrichment Program, n.d.). Conditional admission provides the opportunity for students who would not have otherwise met college admission criteria to obtain a college degree (Methodist Enrichment Program, n.d.).

Student success rates have been examined in several ways, such as retention, student engagement, and grades (Hartman, 1990). Student engagement during tutoring

sessions has been identified as a key factor to academic achievement, particularly for at-risk students (Hartman, 1990). The conventional goal of tutoring is to help students improve academically; tutoring is also a social process where learning skills improve through social interaction (Hartman, 1990). Students who attend group tutoring may have an advantage because other students may contribute additional information relevant to questions, whereas one-to-one tutoring will give the students the undivided attention of the tutor. In addition, students who attend tutoring provided by their peers rather than professional tutors may feel more relaxed and relate to them differently than professional helpers (Maxwell, 1990). Maxwell (1990) suggested that the closer the tutor and tutee were in grade, the more problem solving the tutee may engage in during the session. In either setting, students will have the opportunity to engage in the tutoring process and/or students will have an information basis with each other.

Approximately 30% of all students entering college have some type of academic deficiency (Laine, Laine, & Bullock, 1999). Traditionally, tutoring instruction is geared toward one type of learning style and often assumes specific background (Laine et al., 1999). However, research has suggested various tutoring methods, such as group, one-to-one, peer, and professional tutoring, may influence scores as well as social interactions (Abrams, Podojil, & Jernigan, 1984; Hock, Deshler, & Schumaker, 1999; House & Wohlt, 1990; Xu, Hartman, Uribe, & Mencke, 2001).

A small private college in a rural area saw a need to enroll students who were considered at-risk. In 2007, Methodist University began the Academic Enrichment

Program (AEP), which is 2-semester program that students who are considered at-risk are enrolled. Students in this program sign a contract with several guidelines, one being mandated tutoring. Although all students are mandated for tutoring, some students were allowed to self-determine their tutoring schedule at the discretion of their academic advisor. Students who did not choose their tutoring times were given a schedule by their academic advisor.

The purpose of this quantitative ex post facto study was to investigate the influence of tutoring methods on final grades of students conditionally enrolled in the AEP program. In this ex post facto study, I analyzed archived data of tutoring methods that included self-determined, academic advisor determined, group, one-to-one, peer, and professional tutoring of students in the AEP program to determine if there was a statistically significant difference in final grades.

Primarily, the positive social changes resulting from this study revolves around the enhancement of tutoring programs. From a better understanding of how to support and provide intervention programs, such as tutoring for at-risk students, appropriate tutoring programs can be developed in order to reduce their risk of academic failure during college.

In an overview of the background of this study, quantitative studies addressing the relationship between final grades and methods of tutoring and tutoring programs are briefly reviewed. I describe in detail the problem statement and the purpose of the study as well as the research questions, terminology, and conceptual framework.

Background

The transition from high school to college can be difficult for many students. Some of the difficulties may be due to students who do not have effective study habits or are underprepared for college academically or socially (Thompson & Geren, 2002). In the past, there has been an increase in the number of underprepared students enrolled in colleges and universities (Hock et al., 1999). Access to college has been expanded to include an increasing number of minorities, disadvantaged, and nontraditional students, who are often less academically prepared than students who were traditionally admitted (Grimes & David, 1999).

According to Patrick, Furlow, and Donovan (1999), many students, including underprepared students, are often unsure of their long term goals and may select majors that are not in line with their interests and/or abilities. Patrick et al. (1999) further stated that since many institutions of higher education are admitting academically underprepared students, there is an increased obligation to provide academic intervention programs for underprepared students. Thompson and Geren (2002) suggested there is an overwhelming need to provide tutoring and other academic support programs that are designed for at-risk students who are more likely to drop out of college due to inadequate preparation. The American College Testing (ACT; 2011) reported in the annual college readiness report that only 25% of the high school students who took the ACT in 2011 were considered college ready on all four college readiness benchmarks. In 2012, the dropout rate for the freshman year in 4-year colleges and universities was 23% (ACT:

Newsroom: News Release: National College Dropout and Graduations Rates 2012). These needed academic support programs included the provision of remediation courses, study skills courses, orientation programs, and intervention programs, the most popular begin tutoring (Patrick et al., 1999; Thompson & Geren, 2002). Hock, Deshler, and Schumaker, (1999), found that students who were considered academically underprepared and who participated in intervention programs, particularly tutoring services, achieved better grade point averages (GPA) than comparable students who did not participate in any intervention programs. This study showed academic improvement of five of the six students participating in the study. Patrick et al. (1999) along with other researchers (Abrams et al., 1984; Hock et al., 1999) suggested that academic intervention programs, particularly professional tutoring, are successful and may lead to increased student persistence in course completion.

Since college entrance and acceptance is predominately based upon high school performance, such as GPA, Scholastic Assessment Test (SAT), or American College Testing (ACT) scores, some students may not be admitted into postsecondary schools for failure to meet the criteria set by that school. However, there are some students who may be conditionally enrolled even though their GPA, SAT, or ACT scores are lower than what is required by the institution to which they apply (Hock et al., 1999). Some institutions of higher learning have developed programs that will accept students whose SAT or ACT scores are lower than what many schools may consider for acceptance. According to Hock et al. (1999), one-to-one tutoring has become the program most often

provided. A study conducted at Eastern Michigan University (Abrams et al., 1984) that admitted high risk, underprepared students in the Promote Academic Survival Success (PASS) showed that students who actively participated in the tutoring program had greater academic success compared to those who did not participate in the tutoring program.

Tutoring continues to be an intergral part of academic support programs designed for students. These academic programs often target at-risk students such as those likely to drop out of college due to inadequate preparation (Rheinheimer, Grace-Odeleye, Francois, & Kusorgbor, 2010; Thompson & Geren, 2002). Promoting the success of underprepared college students has become a major focus for many postsecondary institutions (Hock et al., 1999). In an attempt to meet the needs of underprepared students, group tutoring, one-to-one tutoring, peer tutoring, and/or professional tutoring have become services provided by many institutions (Hock et al., 1999).

During the 2011 to 2012 academic year, 75% of colleges in the United States, both 4-year and community colleges, enrolled at least 30% of their students in one or more remedial course with a total enrollment of 1,592,400 remedial students (Nerberger, 1999, p. 4). College readiness researchers have suggested that there is a great need for intervention programs, such as tutoring services for college students (Barnes & Slate, 2013).

Research has been conducted to investigate tutoring practices and the effect tutoring has on the performance of high risk and/or underprepared students (Abrams et

al., 1984; Hock et al., 1999; House & Wohlt, 1990; Xu et al., 2001). An examination of these studies showed that tutoring programs seem to be associated with student retention and increased credit hours, which may have had a positive effect on GPAs. However, in each of the studies reviewed, student participation in tutoring services was voluntary without any conditions to enrollment in college. In the literature reviewed, no research was found that reported outcomes for students who were required to participate in tutoring services as part of their enrollment in colleges or universities. Further, no researchers had compared outcomes for students who received tutoring in a group setting rather than one-to-one settings. In addition, no researchers had compared outcomes for students who received tutoring from peers tutors rather than professional tutors. Therefore, research exploring the variables of required tutoring and tutoring methods such as group tutoring, one-to-one tutoring, peer tutoring and professional tutoring was warranted in order to gain a better understanding of how intervention programs such as tutoring have the potential to impact student grade outcomes.

Problem Statement

Tutoring is a method of learning that works not only for underprepared/at-risk students but for all students (Dvorak, 2004). Tutoring is a practice that is growing in use on college campuses where increasing numbers of at-risk students are in attendance (Dvorak, 2004). Tutoring has been used to counteract failure and low grade rates. Tutoring programs also engage students in active learning. Although tutoring can stigmatize or label students as developmental or remedial, most college students need

some academic support (Dvorak, 2004). Almost all colleges in the United States offer individual tutoring services, and about half offer group tutoring sessions (Maxwell, 1990).

Studies of effective tutoring and other supplemental programs targeted students who were considered academically high risk (Hodges, 2001). However, much of the current research tends to investigate tutoring effectiveness for students who were considered at-risk because of social disadvantages and physical and/or cognitive disabilities, rather than focusing on their academic preparedness for college (Eisenberg, Fresko, & Carmeli, 2001; Kowalsky & Fresko, 2002; Vogel, Fresko, & Wertheim, 2007). Many intervention programs, particularly tutoring, tend to target students who have learning disabilities rather than students who are academically at-risk. Although these studies showed that tutoring for students with learning disabilities was effective and students enjoyed the tutor/tutee relationship (Hock, Pulvers, Deshler, & Schumaker, 2001; Hodges, 2001; Kowalsky & Fresko, 2002), students who have a learning disability diagnosis are not usually considered academically at-risk by the institution in which they are enrolled. This study focused on students who were academically at-risk based on academic performance measured by GPA, SAT, and/or ACT scores.

Other studies targeted specific groups, such as athletes. These studies showed tutoring to be effective with student athletes, who were able to earn grades in their courses that were similar to grades earned by their nonathletic peers (Hock et al., 1999). Several studies have investigated the effectiveness and student response to peer tutoring

and one-to-one tutoring (Eisenberg et al., 2001; Fuchs, Fuchs, Bentz, Phillips, & Hamlett, 1994; Graesser, Person, & Magliano, 1995; Hock et al., 1999; Klavina & Block, 2008; Veerkamp & Kamps, 2007; Xu et al., 2001). This study compared self-determined tutoring to academic advisor determined tutoring, group tutoring to one-to-one tutoring, and peer tutoring to professional tutoring with the final grade earned in the course for which tutoring had been received to ascertain whether there was a significant difference in tutoring methods.

To assist at-risk students Methodist University has developed the AEP, which is a 2-semester program designed to provide help to students who have been identified as underprepared and/or at-risk, using the Methodist University admissions criteria. Underprepared and/or at-risk students who were accepted to the University were admitted with the understanding that their participation in the AEP program was a condition of their admission and enrollment in Methodist University. Students enrolled in the AEP program signed a contract detailing the rules and guidelines of their enrollment (Appendix A). These rules included the students' agreement to attend tutoring sessions as determined by their academic advisor, to contact their academic advisor with changes to their contact information, to contact their academic advisor if they were absent from class, to send monthly progress reports to parents, to maintain at least a C average in each course in which they are enrolled, and to maintain weekly contact with their academic advisor (Methodist University Academic Enrichment Program, n.d.).

Some institutions have developed programs that are geared toward assisting underprepared and/or high risk students with academic success. In many of these programs, there are specific requirements for enrollment; for example, at Methodist University, AEP students were generally required to attend tutoring services. Although AEP students sign a contract that specifies they would attend tutoring services, they were given some autonomy by their academic advisor in when and how long they would attend. As such, these students had self-determined schedules for tutoring. Students who had a C or better were given the opportunity to determine their schedules for tutoring sessions, whereas AEP students who were deemed by their academic advisor or instructors as performing inadequately in class would have academic advisor determined schedules to attend tutoring. These students were given a structured schedule of specified times and duration for tutoring.

In the literature review, no research was found that reported outcomes for students who were required to participate in tutoring services but allowed to self-determine their schedules; however, research has shown that students who voluntarily received tutoring service regularly most often received a passing grade in the course for which they received tutoring (Blaine, 1988; White, Lare, Smeaton, Waters, & Mueller, 2007). Studies also showed that underprepared and/or at-risk students who voluntarily receive tutoring regularly and obtain tutoring early enough will earn higher grades than those who are required to attend tutoring sessions, although the gain is minimal and not statistically significant (Hock et al., 1999; Maxwell, 1990).

As stated, several studies showed that students who voluntarily attend tutoring sessions may be successful in the course for which tutoring had been received; however, the literature review did not reveal studies involving academic advisor determined tutoring schedules. In this study, I investigated whether there were significant differences in final grades earned in the course for which tutoring had been received by AEP students who attended tutoring based on academic advisor schedules compared to those AEP students who had self-determined schedules for tutoring.

In regards to peer tutoring, it is defined as tutoring that involves student helpers assisting in the learning process and helping their peers to learn by teaching (Miller, 2005). Traditionally, students who struggle in a specific content area would be paired with a higher performing peer to receive instruction (Miller, 2005). Damon and Phelps (1989) defined peer tutoring as an approach in which one child instructs another child in material on which the first is an expert and the second is a novice. Another definition of peer tutoring is a method of cooperative learning based on the creation of pairs of students with an asymmetrical relationship and a single common goal that is known, shared, and must be achieved through a relationship framework planned by the teacher (Duran & Monereo, 2005). In this study, I defined a peer tutor as one who has the same or similar academic background as the tutee where the tutor and tutee are considered at-risk and/or underprepared and were conditionally enrolled in their university. Further, I investigated whether there were significant differences in the final grades in the course that involved tutoring from peer compared to professional tutors.

Purpose of the Study

Research has demonstrated that there may be a positive relationship between tutoring programs and grade outcomes of students who are considered at-risk because of social, physical, or cognitive disabilities (Kowalsy & Fresko, 2002). Given this, tutoring is one of the services often offered to students with disabilities in need of special support services to enable them to integrate, both academically and socially (Kowalsy & Fresko, 2002). Although there is research on the effectiveness of tutoring programs, there was little research found that specifically targets students who are academically at-risk. Much of the current research tends to investigate tutoring effectiveness for students who are considered at-risk because of social disadvantages, physical and/or cognitive disabilities, and specific groups, such as athletes (Eisenberg et al., 2001; Kowalsky & Fresko, 2002; Vogel et al. 2007).

This quantitative ex post facto study contributed to the body of literature by focusing on the relationship between the final grades of academically at-risk students and methods of tutoring. These methods include self-determined tutoring, academic advisor determined tutoring, group tutoring, one-to-one tutoring, peer tutoring, and professional tutoring. In this study, I determined whether there were significant differences between final grades of AEP students who self-determined their tutoring schedules, compared to AEP students who attended academic advisor determined scheduled tutoring sessions. Moreover, I determined if there were significant differences in final grades when comparing group tutoring to one-to-one tutoring. Lastly, I determined if there were

significant differences in final grades when comparing peer tutoring to professional tutoring. The final grade used for comparison was that earned in the course for which the student received tutoring.

Research Questions and Hypotheses

The purpose of this ex post facto study was to explore whether there were differences in final grades between AEP students who self-determined their tutoring schedules compared to AEP students who attended academic advisor scheduled tutoring. The purpose was also to explore whether there were differences in final grades between AEP students who attended group tutoring compared to AEP students who attended one-to-one tutoring sessions. Lastly, it was important to explore whether there were significant differences between AEP students who received peer tutoring compared to those who received professional tutoring.

The research questions of this study were as follows:

Is there a significant difference between the final grades earned between AEP students who attended tutoring based on self-determined schedules compared to AEP students who attended tutoring based on academic advisor determined tutoring schedules?

Is there a significant difference between the final grades earned when comparing group tutoring sessions and one-to-one tutoring sessions?

Does tutoring provided by professional tutors have a more positive effect on final grades compared to tutoring provided by their peers?

I sought to find answers to these research questions by addressing the following hypotheses:

Null Hypothesis 1: There will be no significant difference in final grade earned by students who attended tutoring based on self-determined schedules compared to those students who attended tutoring based on academic advisor determined schedules.

*Alternative Hypothesis 1***:** Students who self-determine their schedules for tutoring will perform significantly higher and earn higher final grades than those students who attend academic advisor determined schedules for tutoring services.

Null Hypothesis 2: There will be no significant difference between the final grades earned by the student who received tutoring in group sessions compared to those who received one-to-one tutoring.

Alternative Hypothesis 2: There will be a significant difference between the final grades earned by students who received tutoring in group sessions compared to those who received one-to-one tutoring.

Null Hypothesis 3: There will be no significant difference in final grades earned by students who receive tutoring services provided by professional tutors compared to those students who are tutored by their peers.

Alternative Hypothesis 3: Students who receive tutoring services provided by professional tutors will earn significantly higher final grades than those students who are tutored by their peers.

Theoretical Framework for the Study

The conceptual framework and guiding principles for this study were based upon the concepts from cognitive learning theory (Bandura, 2002, 2006; Feldman, 2011; Schunk & Zimmerman 1998; Walker, Koedinger, McLaren, & Rummel, 2006; Vygotsky, 1978) and humanistic theory (Burns, 1995; Larrance, 2007) using the holistic approach as proposed by Stephen, O'Connell, and Hall (2008).

Cognitive learning theory represents a part of cognitive science that focuses on the study of how people learn and remember the information presented to them (Alkhalifa, 2005). Although the cognitive learning theory is concerned with the transfer process from the presentation of the material to memory, it is also concerned with the mental representation of concepts in memory (Alkhalifa, 2005).

According to cognitive learning theory (Walker et al., 2006), children demonstrated increased learning in classroom studies because tutors using the cognitive approach tend to focus on instruction to increase domain knowledge, reasoning, and social skills. Tutors used in conjunction with classroom activities should produce learning and mastery of content information. The cognitive theory focuses on what is going on in the mind of the learner rather than thinking of learning as a stimulus-response connection (Steadman & Svinicki, 1998). In this theory, the learner is an active participant in the learning process; learning is almost completely a function of the learner's interpretation of events. The cognitive learning theory describes learning as a building of connections

between the learner's prior knowledge and experience and new information. The learning episode should result in the assimilation of new information (Steadman et al., 1998).

According to Bandura (2002), a significant amount of learning can be explained by cognitive learning theory, which emphasizes learning by observing the behavior of another person or modeling. Behavior is learned through observation and not by trial and error, much in the same way as operant conditioning (Feldman, 2011). In this study, as tutors provide instruction as well as study techniques and skills, the tutees may recall and thus demonstrate this behavior. Bandura (1986) suggested that cognitive learning occurs under three conditions. First, the participant must pay attention; second, the participant must successfully recall the information; third, the participant must be capable of reproducing the behavior. Cognitive learning theory can provide necessary skills to promote student mastery of domain knowledge, reasoning strategies, and social skills.

The cognitive learning theory is also referred to as social learning theory emphasizes that teaching and learning are highly social activities and that interactions with teachers, peers, and instructional materials influence the cognitive and affective development of students. When students perform activities, they interact with others' participants, tools, and contexts, which could support improved performance and frame individual cognition (Perkins, 2001). The cognitive learning theoretical framework for this study suggests that a relationship exists between final grades and the methods in which students receive tutoring.

It appears the theoretical framework for a holistic approach is that of humanism and constructivist theory. Humanism emphasizes the growth and full development of the whole person where what is learned reflects the values and goals of the person (Burns, 1995). According to Burns (1995), humanist teachers are seen as facilitators who are sensitive, empathic, accepting, and provide a positive classroom climate. According to Larrance (2007), tutors are an important component to the holistic approach to higher education because the tutor tutee relationship allows other targeted students to observe and interact with others students. In constructive learning, students construct their own knowledge (Dufty & Dufty, 1994). The expectation is that students will learn to build a bridge between what they know and what they are expected to learn. The holistic approach in this study included tutors who coordinated activities with student support services, which provided counseling and other support initiatives that attended to the at-risk student.

Stephen et al. (2008) applied the holistic approach with tutors as a means to social interaction as well as instruction. Tutors are vital to promote academic well-being and the development of independent learning skills. Having tutors with similarities to the tutees supports the holistic concept of academic and social advice and support, which is what the majority of students believe tutoring should provide. Further, this study revealed that students who remained with the same tutor throughout their degree thought this provided the tutees with more social support as well as course mastery (Stephen et al., 2008). This holistic approach provided students with social support and interpersonal relationships

through their first year of college, given that the same tutor was with the tutee for 2-semesters. The holistic approach supports this study in that the peer tutors in this study were enrolled in the AEP program during their first 2- semesters at Methodist University. The peer tutors in this study successfully completed the program with a GPA of B or better.

Nature of the Study

This study used a quantitative ex post facto approach, using archived student data. The design was ex post facto because of the use of historical data and did not deliberately manipulate any of the mentioned variables (Aron & Aron, 2003; Gall, Borg, & Gall, 2003). The data supplied by the Registrar's Office and the AEP Coordinator for each research question already existed, which precluded random assignment of data to any particular variable grouping. Specifically, each research question relied upon data that already belonged to specific self-determined tutoring, academic advisor determined tutoring, group tutoring, one-to-one tutoring, peer tutoring, and professional tutoring. The archived student data included tutoring schedules, tutoring assignments, courses students received tutoring, and final grades.

Research has shown quantitative ex post facto designs are more appropriate in topical areas such as education outcomes (elementary, middle, secondary, and postsecondary; Aron & Aron, 2003; Crews & Aragon, 2004). Crews and Aragon (2004) have demonstrated that performing Analysis of Variance (ANOVA) testing in quantitative ex post facto studies allows for the detection of any significant interaction

between research variable groupings. The purpose of this study was to examine archived data that already belonged to specific variable groupings, which precluded the use of the quasi-experimental design.

A qualitative methodology was most appropriate for this study since the purpose of the research was to describe any significant differences between tutoring services and final grades (Gall et al., 2003). Such a methodology allowed for a description of any significant differences between variable groupings (Aron & Aron, 2003). This study's terminology of *independent* and *dependent* variables suggests that one or more variables are being manipulated and infers causation, which is not the intended purpose of this ex post facto design (Gall et al., 2003).

The sample consisted of 95 college freshmen, 80 men and 15 women, who were conditionally enrolled at Methodist University in the AEP. Each of the participants was assigned to group tutoring or one-to-one tutoring conducted by either peer or an professional tutor. All students enrolled in the AEP were required to attend tutoring as part of their contract; however, based on progress reports from the instructors, high school transcripts scores in math, science, and English, SAT/ACT scores in math, the academic advisor determined if the student was given a structured schedule of tutoring times and days or if the student was allowed to self-determine times and days to attend tutoring. Students whose progress reports showed a C grade or better were allowed to choose their days and times for tutoring; however, students whose grades were below a C

were given scheduled days and times to report to tutoring services by their academic advisor.

This study focused on the relationship between the final grades of academically at-risk students and methods of tutoring. The independent variable included self-determined tutoring, academic advisor determined tutoring, group tutoring, one-to-one tutoring, peer tutoring, and professional tutoring. In this study, data were reviewed from archived student records. Once all of these data were reviewed, an independent samples *t* test was used to compare the final grades of the students who self-determined their tutoring schedule to those students who had academic advisor determined schedules. The independent samples *t* test was appropriate in this study as it allows for a sample from two populations that is, a self-determined schedule compared to an academic advisor determined schedule for tutoring. Further, a one way ANOVA was used to assess the relationship between group tutoring and one-to-one tutoring. Moreover, the ANOVA helped to assess the relationship between peer tutoring and professional tutoring and final grades earned in those courses in which students received tutoring. One way ANOVA was appropriate for this study is that it allows for one independent variable with several conditions. In addition, ANOVA allowed for a closer examination of the main and interactive effects of tutoring methods and final grades. Aron and Aron (2003) concluded that performing and ANOVA is the most effective way to examine significant differences between two or more groups simultaneously. Additional information on methodology of this study is presented in Chapter 3.

Definitions

The following list provides an explanation of terms and acronyms that are used throughout this study.

Academic advisor determined schedule: A specified group of students in the AEP are required to attend tutoring because of low progress reports as determined by their academic advisor (Methodist University Student Handbook, 2008).

Academic Enrichment Program (AEP): A 2-semester program for academic at-risk students who were conditionally enrolled in Methodist University, designed to enhance student success by placing them in a monitored program (Methodist University Student Handbook, 2008).

Academic Enrichment Program student: Students who were conditionally enrolled in a liberal arts school. These students were accepted on the condition of a signed contract, which specifies tasks the student must complete or maintain during their first 2 semesters at Methodist University. They have been determined to have some academic difficulty, which is defined as students who may have had a high school GPA lower than 2.0, SAT scores below 900, and/or ACT scores lower than 18 (Methodist University Student Handbook, 2008).

At-risk students/Underprepared students: Some of the research used in this study refers to students as at-risk, while other studies use the term underprepared. For this study, those students are one in the same and as such may be referred to at-risk.

At-risk students have been defined in various ways, including students who fail to take advantage of support programs and students whose reading comprehension test scores fall more than 1 year below their textbook reading levels (Abrams et al., 1984). Kulik et al. (1983) defined at-risk students as students who have low test scores, low achievement in high school or college courses, or in a socioeconomically disadvantaged group. For the purposes of this study, a student is considered to be at-risk if their high school GPA is lower than 2.0, SAT scores are below 900, and/or ACT scores are lower than 18 (Methodist University Student Handbook, 2008).

Underprepared students are students who have academic skill and strategy deficits (Hock et al., 1999). Hock et al. (1999) explained that these students may have large gaps in their academic and social expectations of college. These students are those who may have returned to school a number of years after graduating from high school or they may have not been expected to attend college after high school because of a low GPA or their course tracks during high school (Hock et al., 1999). For the purposes of this study, a student was considered to be underprepared if their high school GPA is lower than 2.0, SAT scores are below 900, and/or ACT scores are lower than 18, and if the students were required to enroll in remedial courses (Methodist University Student Handbook, 2008).

Grade point average (GPA): The total of the grade points earned (i.e., the value of each letter grade earned times the number of credits each class is worth) divided by the total number of credits completed (Methodist University Student Handbook, 2008).

Group tutoring: Tutoring services provided by a peer or professional tutor to more than one student, but not to exceed five students during a session (Methodist University Student Handbook, 2008).

One-to-one-tutoring: Tutoring services provided by a peer or professional tutor to one student during a session (Methodist University Student Handbook, 2008).*Peer tutoring:* A method of cooperative learning based on the creation of pairs of students with an asymmetrical relationship and a single common goal (Duran & Monereo, 2005). Another definition of peer tutoring is an approach in which one child instructs another child in material on which the first is an expert and the second is a novice (Damon & Phelps, 1989). Miller (2005) defined peer tutoring as student helpers assisting in the learning process and helping their peers to learn by teaching. In this study, peer tutors were defined as the ones who have a same or similar academic background as the tutee where the tutor and tutee are considered at-risk and/or underprepared and were conditionally enrolled in their university.

Professional tutoring: Tutors aged 19 to 65 years, who have a minimum of a bachelor's degree in the subject they tutor, or a minimum cumulative GPA of 3.0. These tutors complete the application process through Human Resources to be hired as tutors. These tutors also complete a formal training in providing tutoring services (Methodist University Student Handbook, 2008).

Self-determined schedule: AEP students with satisfactory progress reports. These students could self-determine their days and times to attend tutoring to seek help for instruction in a given subject (Methodist University Student Handbook, 2008).

Tutoring: The Methodist University Student Handbook (2008) defined tutoring as a method of providing help to students by instruction outside of class. The focus is on curriculum content and is characterized by specific role taking. Someone has the role of tutor and the other person has the role of tutee (Topping, 1998). I used the Methodist University Student Handbook definition for purpose of this research.

Assumptions

The following assumptions were made as part of this study. It was assumed that the grouping variable categories (self-determine schedule and academic advisor determine schedule) were independent of one another. It was assumed that tutoring methods would be designed according to the ability of the student, while meeting the academic and financial requirements of the institution. It was assumed that appropriate tutors were assigned to students; for example, math tutors were assigned to students requiring tutoring in math. It was assumed that all tutors made a due diligent effort to assist the tutees, meaning no one was treated differently due to participation status, if known. It was assumed that students and tutors received the necessary resources to succeed in the tutoring process. Another assumption was that no random assignment or random bias with the mentioned variable groupings occurred. Finally, it was assumed that

the participants would make academic gains in the subject area in which they received tutoring.

Scope and Delimitations

The scope of this study focused on tutoring methods provided to students who were academically at-risk and enrolled in the AEP program at Methodist University. Research focused on final grade outcomes of students who received tutoring by self-determined tutoring compared to academic advisor determined tutoring, group compared to one-to-one, and peer tutoring compared to professional tutoring. Delimitations of this study were acknowledged. First, there was a geographical delimitation, as only students who were located in Fayetteville, North Carolina were used. Second, this study included students enrolled in Methodist University, which is a small, private, religious university. Third, this study included at-risk students who were conditionally enrolled in Methodist University's AEP program. Fourth, the Registrar's Office and Academic Enrichment Program Coordinator provided all archived student data, which decreased the chance for any experimenter effect to occur. Finally, this study focused on students who were considered academically at-risk, rather than students who were considered at-risk because of social disadvantages, or because of physical or cognitive disabilities. Although it may be plausible that students with cognitive disabilities would be included, none of the AEP students had diagnosis of cognitive disabilities.

Limitations

In this study, I investigated whether there were differences in final grades earned when comparing three methods: group tutoring compared to one-to-one tutoring, self-determined tutoring compared to academic advisor tutoring, and peer tutoring compared to professional tutoring. Efforts were made to minimize potential limitations. However, some limitations are acknowledged. First, this study was limited to AEP students at Methodist University, Fayetteville, North Carolina. This study did not include students who may be at-risk or underprepared who may not have been part of the AEP program. Methodist University has a cap on the number of students that may be accepted in the program, and although students are accepted, they may choose not to attend the university. Second, the sample size was reduced due to the number of students enrolled in the AEP program. Third, there were limitations on age range; the AEP students were within the ages of 17 to 21 years old. Students enrolled in the AEP program were students who attended college upon graduation from high school. Students who may have fit the academic requirements for the AEP program but did not enroll immediately after high school were not eligible for the AEP program. A fourth limitation were students who graduated high school with a GPA of 2.0 or higher, SAT scores of 900 or higher, and/or ACT scores of 18 or higher were not included in the study. A fifth limitation was the reliance on archived data. Relying on archived student data increased the possibility of fluctuations of the grouping variables such as group assignments. Although students were supposed to remain with the same tutor in the same group

assignments, this could have changed at any point during the semester. Finally, time was another limitation. A longitudinal study may give more information on the effects of tutoring on grades earned and graduation rates.

Significance

The increased enrollment of students who were academically underprepared or academically at-risk has created a significant need for intervention (Hock et al., 1999). It is estimated that at least 30% of students enrolled in tutoring programs or other academic intervention programs were considered socially or academically at-risk while in high school (Hock et al., 1999).

Several early studies have shown tutoring to be effective and an important component in student success in their courses, but these studies have not always included students who are at-risk. Further, these studies may not have focused on tutoring methods and services such as self-determined tutoring compared to academic advisor determined tutoring, group tutoring compared to one-to-one tutoring, and peer tutoring compared to professional tutoring. The existing studies have shown that tutoring can be effective; however, at-risk groups included students with academic, social, cognitive, and/or physical disabilities. This research has the potential to fill the gap of early studies of effective tutoring in understanding tutoring methods and services specifically targeted toward students who are academically at-risk, rather than those who may have social, cognitive, or physical disabilities. Students are more willing to engage when their academic needs are properly addressed (Hock et al., 1999). As such, the results of this

study has the potential to contribute to social change by identifying the effectiveness of different tutoring methods and services, such as self-determined tutoring compared to academic advisor determined tutoring, group tutoring compared to one-to-one, and peer tutoring compared to professional tutoring. Identifying ways to augment achievement for academically at-risk students may lead to greater retention and student success.

Summary

In summary, tutoring is one of the services often offered to students with cognitive or physical disabilities in support of their need for special support services to enable them to integrate, both academically and socially (Kowalsy & Fresko, 2002). An explanation of tutoring methods was provided in this research. In Chapter 1, I covered the background of tutoring services as well as the significance of the current research. In Chapter 2, I present a review of the literature focusing on tutoring methods from various perspectives. In Chapter 2, I will discuss documentation of the empirical research and professional work that provides a backdrop and background of information for the current study. Further, I will discuss the significance of tutoring practices and the effectiveness of tutoring methods. I will assess peer tutoring among students who have similar academic backgrounds. For example, AEP students are tutored by peers who completed with a cumulative GPA of 3.0 or better. This study revisited existing research on the effectiveness of tutoring conditions, such as self-determined tutoring compared to academic advisor determined tutoring, group tutoring compared to one-to-one tutoring, and peer tutoring compared to professional tutoring. The chapter concludes with an

overview of how the variables of academic at-risk students, tutoring methods, and services have relationship to final grade outcomes.

Chapter 2: Literature Review

Introduction

Tutoring services have been and continue to be an important part of academic support programs designed for students. Tutoring programs are designed for and target at-risk students who are more likely to drop out of college due to inadequate preparation (Rheinheimer et al., 2012). Tutoring programs were reviewed with specifics to research linking tutoring with academic performance. These studies showed that tutoring programs may have had a positive effect on academic performance in specific courses and may have had a positive impact on students' social environment. Although the results from these studies indicated that different tutoring interventions are beneficial, Rheinheimer et al. (2010) pointed out that the extent of tutoring services that are necessary to produce positive outcomes remains unclear, and how different tutoring methods yield positive outcomes.

A review of the research strategies used to conduct this literature search will be presented, followed by a comprehensive delineation of the research related to the topic of tutoring methods and services. This research study focused on the tutoring services for academically at-risk college freshmen and the relationship to final grades. The review of the literature includes tutoring methods, such as group tutoring compared to one-to-one tutoring, self-determined tutoring compared to academic advisor tutoring, and peer tutoring compared to professional tutoring.

Research conducted earlier showed that tutoring can be an effective tool for student success (Eisenberg et al., 2001; Fuchs et al., 1994; Graesser et al., 1995; Hock et al., 1999; Klavina & Block, 2008; Veerkamp & Kamps, 2007; Xu et al., 2001). Many of these studies do not include students who are academically at-risk nor do they identify specific tutoring sessions such as group tutoring compared to one-to-one tutoring or peer tutoring compared to professional tutoring. The majority of existing studies tend to focus on students who are considered at-risk because of social deficits or cognitive or physical disabilities. As such, in this study, I explored if there were significant differences in the tutoring session (group, one-to-one) to the final grade earned in the course in which tutoring was received of academically at-risk/underprepared students. It determined whether there were significant differences in final grades earned in courses of AEP students who self-determined their tutoring schedule compared to AEP students who attended academic advisor determined scheduled tutoring. Moreover, I assessed for significant differences between students' final grades earned in the courses they received tutoring from peer tutors compared to those receiving tutoring from professional tutors.

Literature Search Strategy

Multiple online sources and electronic databases, including library services of Walden University, Methodist University, Fayetteville Technical Community College, and the Cumberland County Public Library were used for this literature review. The electronic databases reviewed online consisted of Google and Questia. Scholarly and peer-reviewed articles were gathered from the Walden University Library's EBSCO

database system. Specifically, the main databases used to complete this research were (a) Academic Search Premier, (b) SAGE journals, (c) PsycARTICLES, (d) PsycINFO, (e) Education Research Complete, ERIC and (f) SocINDEX with full text. The primary offline sources for books and articles were my personal library and the interlibrary loan department at the local library.

Significant key words and concepts in the literature review are *tutoring, one-to-one tutoring, group tutoring, self-determined tutoring schedule, academic advisor tutoring schedule, academic enrichment program, peer tutoring, professional tutoring, cognitive learning theory, social learning theory, humanistic theory, holistic approach, underprepared student,* and *at-risk student*.

Theoretical Framework

Cognitive Learning Theory

Cognitive learning theory suggests that the different processes concerning learning can be explained by analyzing mental processes. Further, cognitive learning theory focuses on the study of how people learn and remember the information presented; in other words, what people know and how they come to acquire it. According to cognitive learning theory, thoughts and expectations affect attitudes, beliefs, values, assumptions, and actions (Berger, 2014). The cognitive learning theory relies on notions of information processing, which holds that through incoming sensory stimuli, people mentally process and then perform a series of discrete mental operations based on rules and strategies that become more sophisticated and development occurs (Bandura, 2006).

Bandura (2007) emphasized that people abstract and integrate information that they encounter in the course of their social experiences, exposure to models, verbal discussions, and encounters with discipline. In addition, this theory focuses on the mental representation of the concepts in memory during the learning process (Alkhalifa, 2005).

Research has shown that college students' attributions to success or failure and their abilities or self-efficacy influence their motivation and goals for academic work (Bandura, 1997). Freire and Faundez (1989) suggested that social conscience and self-efficacy, particularly in students who are academically at-risk, can stimulate learning. Further, students can develop realistic attributions regarding success and failure when working with tutoring programs or other intervention programs (Stage, Muller, Kinzie, & Simmons, 1998). Research has shown that tutoring programs designed for low achieving students, which focused on self-efficacy and academic learning are successful (Stage et al., 1998).

Friel and Friel (1982) suggested that students who are the product of dysfunctional homes may have distorted rules in the family system; as such, these students may exhibit personal, social incompetence and poor, if any, study skills. Thus, the use of cognitive learning may be an effective tool as it stresses teaching students' skills for effective living (Webb, 1992).

Social Learning Theory

The social learning theory is based on the idea that behavior is learned from social experiences or interactions with others (Bandura, 2006). Intellectual development is

achieved when students are involved in learning activities in which they interact with others (Vygotsky, Cole, John-Steiner, Scribner, & Souberman, 1978). Students come to understand information through negotiating meanings with people in the environment, and they achieve goals through interacting with instructors, peers, materials, and atmosphere embedded in context (Kim & Baylor, 2006). Bandura (2006) contended that individuals perform a series of discrete mental operations on incoming information and then mentally digest the conclusions they have drawn from the process. He asserted that how individuals mentally process their social experiences influences their behavior.

Schunk and Zimmerman (1998) discussed self-regulation learning in accordance with social learning theory. For Bandura (2006), self-regulation is intended to enable students to contribute to their own life by selecting, influencing, and constructing their own circumstances. In the classroom, students would be encouraged to pursue tasks, recognize the difficulties of the tasks, actively address the challenges of the tasks, and evaluate the results (Bandura, 1996). Students are encouraged by the teachers, tutors, or peers to take the risks of pursuing these tasks, although there are risks of being wrong. The risk taking and result of understanding the task initiate the student learning activity. This idea of self-regulation in regards to social learning theory emphasizes students actively engaged in curricular settings with the support of the teachers who encourage student risk taking.

The use of tutors based on social learning theory provides the students with a problem-solving environment along with a variety of tools and scenarios for the students

to solve (Koedinger et al., 2007). For example, social learning tutors used in a high school algebra course showed that tutors provided students with real world scenarios that required algebraic reasoning and the use of various tools, such as a grapher, and an equation solver, such as a calculator. The use of social learning theory provided students with firsthand experience in their problem solving; they also received tutorial guidance, immediate feedback, and next step hints, and importantly, they received student-tutor interactions with the tutors (Koedinger et al., 2007).

Humanistic Theory

The humanistic theory maintains humans are different from all other organisms, and as such, humans actively control their destinies and shape the world around them (Crandell, Crandell, & Zanden, 2009). Therefore, the tutor will need to recognize that individuals differ in almost every area of performance and that diversity is everywhere in education (Tsung & Ta Yu, 2011). Tutoring is a resource used to assist students in specific areas. Those who design the sessions need to understand the variations in students' attitude, motivation, and ability (Tsung et al., 2001). Tailoring learning content and tutoring sessions for students to fit individual differences will provide students support in adaptive learning. According to Duffy, Kirsh, and Atwater (2011), human existence should focus on the meaning and richness of our experiences, the holistic characteristics of that experience, and our ability to choose and determine behavior and thoughts for ourselves. Therefore, much of what we learn and how we learn it is based upon our emotions and motivation (Izard, 1984). Students' emotions and motivation deal

with their desire to participate in the learning process, which gives strength to the theory that there should be a person-fit technique to learning (Tsung et al., 2001).

Shechtman and Leichtentritt (2004) conducted a study to enhance classroom management by comparing cognitive teaching with a holistic approach. The holistic perspective emphasizes that the teaching process should take into account individual differences in cognitive, emotional, and motivation in students, whereas the cognitive perspective emphasizes learning should actively engage the learner and be relevant to interests (Shechtman & Leichtentritte, 2004). The two variables were cognitive teaching and affective teaching. Cognitive teaching referred to regular classroom lessons taught on the informative level. Affective teaching referred to focusing on the personal lives of children, including perceptions and emotions. Students who received affective teaching showed less off task behavior, fewer behavioral problems in the classroom, an increase in positive behaviors, and increased learning on test scores compared to those students who received only cognitive teaching (Shechtman & Leichtentritte, 2004).

A review of the literature focusing on theories of learning showed that social learning experiences such as peer tutoring and group tutoring allow students to observe other students' successful learning and encourage them to emulate those behaviors. The review also showed the learning process should occur in an environment that contains interpersonal relationships. When learners are involved, it may not only affect their learning but may enhance social skills as well.

Literature Review and Concepts

Background of Tutoring

Tutoring is a practice that has been around from some time and is growing in use (Dvorak, 2004). Tutoring has also flourished in the education of students. Once a privilege afforded only to the children of the wealthy, tutoring programs are now widely available to students through their schools, churches, and community agencies as well as through private tutorial services (Claxton, 1991). Today, students at all levels receive tutoring to help them master basic skills such as reading and math, difficult content such as chemistry or biology, to prepare for tests, and for enrichment.

Many colleges and universities offer tutoring to students to promote academic success. Tutoring services have been used to counteract the drawbacks from lectures where knowledge is passed from top down (Claxton, 1991). Tutors work with students who do not learn well in a lecture system. They engage students in an environment of mutual communication that will allow the student to develop critical thought. Students often prefer an environment with a circular structure with interaction and support.

The concept of scaffolding describes the processes of tutoring. Based on Vgotsky's theory (1978) of the zone of proximal development, in the scaffolding model, tutors support their students until they are comfortable with the concept, and then remove the scaffold when mastery is achieved, and then move to more difficult concepts. This method has been successful with at-risk students (Dvorak, 2004).

Tutoring services derives its power from two factors: its capacity to adapt to the learner's cognitive needs and the emotional benefits of the tutor tutee relationship (Gaustad, 1992). Through tutoring, the elements of instruction can be adapted to the student's pace and level of understanding. The tutor can adjust instruction and cues if the student reactions show lack of understanding. Constant interaction will influence higher levels of participation; tutors can provide the amount of practice needed to master the task and then move to more difficult material as the student is ready (Gaustad, 1992).

Tutoring has several emotional benefits for students, especially at-risk students (Gaustad, 1992). Tutoring, particularly one-to-one tutoring is free of competition and will allow students to set individual goals without comparison to other students. Tutoring sessions allow the students to receive more praise and encouragement; in addition, the tutor has more time to respond to each student, and thus, the student is more likely to demonstrate progress. Research has shown that students who receive praise and encouragement tend to have better attitudes toward learning and their capabilities. Educational researchers have advocated settings that engage students in active learning or problem solving (Graesser & Person, 1994). Tutoring is an active learning process with tutors acting as role models and facilitators of the learning process.

At-risk/Underprepared Students

Student enrollment at postsecondary schools is on the rise (Xu et al., 2001). This rise coincides with an increased number of academically underprepared and/or at-risk students. The increasing number of academically underprepared students entering

college indicates a rising need for tutoring (Xu et al., 2001). Many underprepared students find difficulty adjusting to college life because of the expectations placed on college students and the skill and knowledge levels they possess; as a result, these students are more likely to fail their college courses (Hock et al., 1999).

Many colleges and universities admit high risk students for several reasons: to provide opportunities for college education that otherwise would not exist, to stabilize enrollments, and to further affirmative action goals (Abrams & Jernigan, 1984). Whatever the reason, tutoring is one support service most often provided to underprepared and/or at-risk college and university students (Hock, Schumaker, & Deshler, 1995). In an effort to meet the needs of underprepared college students, tutoring programs have become a popular service (Hock et al., 1999). It is not uncommon that schools that enroll students who are underprepared and/or at-risk provide developmental courses such as English and mathematics to assist student achievement. Schools that provide these developmental courses also provide tutoring sessions along with the courses (Kolajo, 2004). Kolajo (2004) suggested that students who attend the tutoring services and successfully complete the developmental courses are more likely to achieve higher grades in other courses. Several studies have suggested that when students volunteer to receive services, tutoring has a positive effect on students and improves learning gains (House & Wolt, 1990; Taylor, 2008; Xu et al., 2001). Students who were tutored compared with those who were not tutored, participated more in class, were more

satisfied with their academic performance, and tended to study more (Eisenberg, Fresko, & Carmili, 1983).

House and Wohlt (1990) conducted a study to investigate the effect of participation in a tutoring program on the academic performance of college freshmen. It was hypothesized that students who participated in tutoring their first year of college would perform better than students who participated only one semester, and that students who did not participate in tutoring would show lower academic performance than tutored students. The results showed that participation in a tutoring program the first year was related to students earning more credit hours during their first year. The study also showed that the tutoring program had a direct positive effect on GPA.

Abrams and Jernigan (1984) conducted a study to investigate whether the number of hours spent in a reading and study skills program is directly correlated with college GPA and retention of high risk college freshmen. They also investigated whether the use of academic support services decreases from the fall semester to the winter semester and if participation in a structured reading program results in measurable increases in reading. A group of 219 high risk freshman attended small English courses specifically designed for academically at-risk students. The results of the study showed that students who took advantage of tutoring services made demonstrable gains in their skills. The students with higher fall semester GPA's saw the tutors an average of 2.26 times during that semester, whereas, those who failed saw the tutors an average of 1.81 times. The study also showed that students who returned during the winter semester used the tutoring services less than

they did during the fall semester. The study did show that students who participated in tutoring sessions during both semesters resulted in significant increases in reading test scores over the course of the semester. A review of the literature gives reason to believe that tutoring programs have a positive impact on course outcomes and cumulative GPA's.

One-to-One Tutoring

Graesser, Person, and Magliano (1995) suggested that one-to-one tutoring, in additional to the course, is more effective than traditional teaching methods. The authors further suggested that one advantage of one-to-one tutoring may be attributed to conversational dialogue patterns of tutors. Often, tutors are peers of the students, or slightly older students, and tutees may feel somewhat more comfortable interacting with tutors rather than with professional and adult volunteers.

Many of the studies reviewed for one-to-one tutoring involved children in elementary school or high school; none of the studies reviewed involve one-to-one tutoring at the college level. Eisenberg et al. (1981) conducted a study to examine cognitive changes as a result of one-to-one tutoring in Grades 5 to 7. The tutors were university student volunteers. The tutors met with their students regularly over a seven month period for about two hours, twice a week. The results showed that one-to-one tutoring had no impact on the cognitive skills of participants. Two years later the authors conducted a follow up study to examine the tutored children. The results showed that there was a slight difference, although not statistically significant, between tutored and non-tutored children. More than three-fourths of the children who participated in the

study were attending a comprehensive or occupational school, as where non-tutored students (Eisenberg et al., 1981).

Coulter (2004) conducted a study using 12 adjudicated youths in a one-to-one reading program. The study was conducted in a state juvenile detention center; the participants included ten males and two females. The average age was 15 years and the average grade of completion was Grade 9. Their tutors were trained paid professional tutors. The study showed that the youth who received one-to-one tutoring improved their reading performances. Students gained three times the number of correct words per minute per week of one-to-one tutoring. Students who received fewer tutoring sessions did not improve reading performance.

On the other hand, some researchers believe that one-to-one tutoring is a temporary fix to student problems because the tutors do not have tutor training (Hock et al., 1995). Usually tutorial programs employ individuals who are competent in the targeted subject matter, but these individuals may have limited skills to effectively teach the content they know. With limitations on tutoring skills students may be able to successfully complete the current course, but require more assistance in future courses, as they may not gain skills for advanced topic in the subject area (Hock et al., 1995).

According to Hock et al. (1995) tutors need training and skill development opportunities. These researchers conducted a study to determine whether tutors could be taught to use tutoring strategies. The goal of the study was to show tutors how to teach at-risk students to use learning strategies. Another goal was to measure how they tutored

before and after training. The study contained a population of 27,000 students. Fifty-five tutors where employed to provide tutorial services to student athletes. The tutors were trained by using a Strategic Tutoring Checklist. The results showed that tutors can be trained to use strategies in their approach to tutoring. Furthermore, university level tutors can be taught to assess the student's approach to task and gain commitment to learn more effective study strategies. Research suggest that one major reason students remain dependent upon tutoring services for academic success is the lack of tutor training (Hock et al.,1995). The review of the literature gives one reason to believe that one-to-one tutoring can have positive impact course outcomes for students. However, this review also gives rise to the belief that one-to-one tutoring has a more positive impact if tutors have training in the tutoring process. Further, the literature reviewed in regards to one-to-one tutoring included participants of elementary to middle school age; no studies were found on one-to-one tutoring at the high school or college level; however, the results of these studies my give insight to possible outcomes of one-to-one tutoring of college students.

Group Tutoring

Some tutors prefer to conduct tutoring sessions in small group situations. Group tutoring is more challenging and is limited in terms of the amount of individual attention that can be provided. Furthermore, in group settings the multiple abilities and backgrounds of students complicate the level and pace of instruction. Finally, the tutor has to ensure that the content covered must be suitable for the general needs of the group

(Stienert, 2004). Stienert (2004) conducted a study to assess student perception of effective group tutoring in undergraduate medical education. The groups were asked to attend group tutoring sessions while responding to questions such as: "What are the goals of small group teaching." "What message would you like to give your tutors" and "What message do you think your tutors would like to give you." The study showed that the group responses found the sessions to have a non-threatening atmosphere with emphasis on problem solving and thinking as the most important characteristic of the group sessions.

A study was conducted to assess the effects of small group math tutoring of at-risk third grade students. The purpose of the study was to assess the effects of small group tutoring with and without classroom instruction. The study included 120 students, of which 40 were assigned to a traditional classroom without any additional tutoring. The remainder of the students received tutoring in a small group setting along with classroom instruction. The results showed that tutoring sessions were significantly more effective when tutoring sessions occurred in combination with classroom instruction. These results suggest that classroom instruction supplemented by group tutoring is effective in the academic success of at-risk students (Fuchs, Fuchs, Craddock, Hollenbeck, & Hamlett, 2008).

Peer Tutoring

Peer tutoring has various definitions; for example, Kalkowski, (1996) defined peer tutoring as an approach in which one individual instructs another individual on

material in which the first individual is an expert. Gisbert and Font, (2008) defined peer tutoring as tutoring that promotes the mastering of interpersonal competencies. Miller (2005) defined peer tutoring as tutoring that involves student helpers assisting in the learning process and helping their peers to learn by teaching. Gaustad (1992) explained that peer tutoring occurs when tutor and tutee are the same age.

Monereo and Duran (2005) defined peer tutoring as a method of cooperative learning based on the creation of pairs of students with an asymmetrical relationship and a single common goal which is known and shared and must be achieved through a relationship framework planned by the teacher. Regardless of the definition of peer tutoring, an important question is whether or not peer tutoring is effective.

According to Maxwell (1990), students feel more relaxed with peers and relate to them in different way than professional helpers. Maxwell further suggests that the closer the tutor and tutee were in grade, the more problem solving the tutee engaged in during the session. In several reviews of peer tutoring programs, researchers found that when students participate in tutoring sessions for reading, improvements in reading occurred for those students (Gaustad, 1993; Maxwell, 1990; Monereo & Duran, 2005). However, other studies showed when tutors were trained in the tutoring process, they were more effective and their tutees experienced more gain (Bobko, 1984; Klavina & Block, 2008; Miller, 2005; Veerkamp, Kamps, Gardens, & Cooper, 2007).

To assess the impact of peer tutoring Gisbert and Font (2008) conducted a study to determine if students who receive peer tutoring would show improvement gains in

linguistic competence. The study consisted on 24 participants who were divided into 12 pairs. Six pairs performed *fixed peer tutoring* which is one student serving as the tutor and the other student the tutee. The other six participants performed *reciprocal tutoring*, which is each student at a given time serving in the role of a tutor. The authors hypothesized that all students, regardless of type of tutoring would show improvement. The authors further hypothesized that the student tutors would have enhanced self-concepts as writers; and the tutored students would express satisfaction with help received from their peers compared to help received from their teachers. The results showed that there was no significant difference as far as peer tutoring; however, there was a statistically significant difference in improved learning gains. In terms of self-concept as a writer, the results showed that students serving in the role of fixed peer tutor displayed significant increases when compared to those students who served in dual roles. Finally, the study showed that students who received fixed peer tutoring were more satisfied with help from their peers; whereas students who served in the dual role were more satisfied with help from their teachers.

Klavina and Block (2008) suggested that because of the specific needs of students who have disabilities and/or are academically underprepared, utilizing peers as a support or tutor might form stronger interactions between the tutor and tutee. Further, peer tutoring can be effective in the classroom to teach students with disabilities, academic skills, social behaviors, and daily living skills. According to Klavina and Block (2008), peer tutoring can be an important part of interaction interventions because peers provide

natural contexts for peer behaviors. Furthermore, students tend to believe that being tutored by their peers increases their confidence in their ability to master the material (Bobko, 1984). Klavina and Block (2008) showed that peer tutoring can significantly impact the student academically and socially.

Mandatory Tutoring

Several studies, have found that students who voluntarily receive tutoring service most often receive a passing grade in the course they received tutoring (Maxwell, 1990; White, Lare, Smeaton, Waters, & Mueller, 2007). Further, some studies show that underprepared students who receive tutoring regularly and obtain tutoring early enough will earn higher grades compared to those who were forced to attend tutoring; however, the gain was minimal and not statistically significant (Hock et al., 1999; Maxwell, 1990).

Some researchers suggest that students who attend mandatory tutoring may not perform as well as those who voluntarily receive tutoring (Maxwell, 1990). However, a study conducted by Sutherland and Snyder, (2007) showed that students who were mandated to receive tutoring performed well. Students who were considered low achieving participated in the study using Peer Assisted Learning (PAL), a program which included activities, social interaction, and immediate feedback between tutor and tutee. These students were mandated to attend these sessions twice a week for one hour. The results showed that these low achieving students benefited significantly from the PAL intervention in the area of reading. However, the students mandated to the PAL program were not compared to students who volunteered for tutoring sessions. A review of the

literature gives reason to believe that mandatory tutoring may have a positive impact on course outcomes and cumulative GPA's.

Summary

It appears from the literature review there was much research on tutoring practices among school aged at-risk children or children with physical and/or mental disabilities; however, there was little research found on tutoring practices among college students. In addition, there was little research found on tutoring outcomes among students who were required to attend mandatory tutoring sessions. Further, there was no research found on required tutoring as a condition of enrollment with the flexibility to self-determine tutoring schedules.

The information of past and present research indicates that additional research is needed on tutoring practices among college students. Regardless of students' disability or functioning, some of the benefits of tutoring are higher academic achievement, improved social development, and increased motivation (Miller, 2007).

This chapter provided research regarding mandated tutoring because there was no research found on students who had the flexibility to self-determine their tutoring schedule; however, there was research on students who were mandated to attend tutoring. This chapter also provided research regarding group versus one-to-one and peer versus professional. It also provided research which supports tutoring as an effective method of intervention in student final grade outcomes. Cohen et al. 1981 concluded from their study that tutored students benefit more academically and develop more positive attitudes

toward the subject matter when compared to non-tutored students. On the other hand, this chapter further provided research which suggests tutoring practices may not be effective in student outcomes. Maxwell (1990) suggests that tutoring outcomes may be due to the degree of student preparedness; underprepared students who receive tutoring may not improve in their grades. Chapter 3 explains the research design and methodology used in this study. Details of the study design, demographics, and procedure for investigating tutoring effectiveness and the variable of at-risk students, tutoring methods, and final grade outcomes.

Chapter 3: Research Method

Introduction

This quantitative ex post facto study focused on the relationship between methods of tutoring and the success of college students who were academically at-risk. The methods of tutoring included self-determined tutoring, academic advisor determined tutoring, group tutoring, one-to-one tutoring, peer tutoring, and professional tutoring. Academic success was determined by the final grade earned in the course or courses for which they received tutoring.

Contained in this chapter is a detailed outline of the research design approach, including the settings in which the tutoring occurred. This chapter also includes details of the population from which the sample was drawn, the instruments used to assess changes in the dependent variables, how the data were collected, the statistical procedures used to analyze the data, and measures taken to protect participants' rights.

This study is a quantitative ex post facto research design that examined students assigned to differing tutoring methods. Existing data had assigned students to self-determined or academic advisor determined tutoring, to group or one-to-one tutoring, and to a peer tutor or a professional tutor. For example, student 79105 had been assigned to academic advisor determined tutoring in a one-to-one setting with a professional tutor. Student 81055 had been given a self-determined schedule in a group setting with a peer tutor. Each subsequent student had been assigned in this manner. All students were assigned to their perspective tutoring sessions by their academic advisor.

In this study, there was one independent variable that was the AEP student assignment; however, there were six methods of assignment that were self-determined tutoring, academic advisor determined tutoring, group tutoring, one-to-one tutoring, peer tutoring, and professional tutoring. The dependent variable was the final grade received in the course or courses for which the student received tutoring.

Research Design and Rationale

Description of Study

A quantitative methodology was most appropriate for the study since the purpose of the research was to examine and describe any significant differences between the variables of final grades and tutoring methods (Aron & Aron, 2003). The design quantified the archived student data and used *t* test and ANOVA testing to detect main and interactive effects between the mentioned variables. In contrast, a qualitative methodology would not have been the most appropriate to use. There was no direct contact with study participants since all secondary data originated from archived records (Aron & Aron, 2003). Reliance on secondary data and the research design precluded the use of survey instruments. The completed study did not rely upon primary data, which is characteristic of most qualitative methodologies (Aron & Aron, 2003).

The research questions arose from secondary data that already existed, which precluded the necessity of developing a measurement tool such as a survey. Since the archived data supplied by the Registrar's Office and the Academic Enrichment Program Coordinator already existed, direct contact with study participants was not necessary.

Participants in this study had already been assigned to self-determine tutoring or academic advisor determined tutoring, group tutoring or one-to-one tutoring, and peer tutoring or professional tutoring by their academic advisor. Because the independent variable placed the participants into one of two categories, namely, self-determined or academic advisor determined tutoring a *t* test was used to determine whether there was a significant difference between final grades of students who self-determined their tutoring schedule compared to those who had academic advisor determined schedules for tutoring.

Students assigned to self-determine tutoring and those students assigned to academic advisor determined tutoring were then placed by their academic advisor in group or one-to-one tutoring and in peer or professional tutoring. The independent variable for this study was the AEP student assignment. This resulted in each student being assigned to three methods of tutoring; for example, a student placed in self-determined tutoring was then assigned to either group or one-to-one tutoring and assigned to either peer or professional tutoring. The dependent variable was the final grades received in the course or courses for which the student received tutoring. Students remained in their assigned tutoring method for the duration of 2- semesters. A one-way ANOVA was used to investigate the impact of tutoring sessions and whether these types have an influence on the final grades earned in those courses in which the students received tutoring. A one-way ANOVA was used to investigate if there were significant differences in the final grades of students who received group tutoring compared to one-to-one tutoring as well as peer tutoring compared to professional tutoring.

An ex post facto design was appropriate for the study with the reliance on archival data and no manipulation of the mentioned variables. The data for each research question included tutoring assignments and final grades for students enrolled in the AEP program during the 2007 through 2009 academic years at Methodist University. Ex post facto designs are primarily used in studies that include the analysis of archival data without intentional manipulation of the different variables (Crews & Aragon, 2004). In contrast, a quasi-experimental or correlational design was not appropriate for the completed study. There was no manipulation or experimental control of the mentioned variables, which can occur with quasi-experimental and correlation designed (Aron & Aron, 2003).

Methodology

Population and Sampling Method

The population consisted of archival records of students conditionally enrolled in the AEP program from Methodist University. Methodist University is a small private religious college located in Fayetteville, North Carolina that enrolls approximately 2,500 students per year. Each year, the University seeks to enroll on a minimum of 35 but no more than 60 students into the AEP program. Students ranged in age from 18 to 21 years old. Methodist University had an enrollment of 48 AEP students during the 2007 and 2008 academic year and 47 students during the 2008 and 2009 academic year. All 95 students' high school GPAs were in the range of 1.57 to 2.0; their SAT scores were in the range of 750 to 900; and ACT scores were in the range of 12 to 17. Based on the Methodist University Student Handbook (2008), the average score for admission without

enrollment conditions is about 1500 on the SAT and 19 on the ACT. These students are the sample pool for the study.

Of the 95 students enrolled during the 2007 to 2009 academic years, 15 of the students were female. Eighty of the remaining students were males. Of the 15 female students, six were African American and seven were Caucasian with two being Hispanic or Latino. Of the 80 male students, 43 were African American, 10 were Caucasian, and the remaining 27 were Hispanic or Latino (Methodist University, 2009).

Archived student records were selected for the study from enrollments of the AEP during the 2007 through 2009 academic years. Each student had been assigned to either the self-determine tutoring or academic advisor determined tutoring, as determined by their academic advisor. The academic advisor determined the assignments based on feedback from professors and high school transcript scores in math, science, and English. In addition, student SAT/ACT scores in math were used as assignment criteria. Each student had been assigned to the group or one-to-one peer or professional tutoring sessions by their academic advisor. The Registrar's Office and the Academic Enrichment Program Coordinator provided all archived records.

Sample Size

A power analysis was conducted to determine the minimum number of participants needed to detect a significant treatment effect, based on the statistical analyses for this study. Based on a power of .80, an alpha level of .05 and expected effect size of Cohen's f =.35 (expected pre-post correlation of .70) the study would have

required a minimum sample of 84, or 28 for the self-determined schedule or academic advisor determined schedule groups with seven for each group of tutoring conditions, such as group versus one-to-one and peer versus academic.

Instrumentation and Materials

Tutoring process. Tutoring services had been available for students from 9:00 am to 9:00 pm. The students assigned to the academic advisor determined tutoring group were given a schedule by their academic advisor. The schedule consisted of daily 1-hour tutoring sessions either with a peer or professional tutor in a group or one-to-one setting. The self-determined tutoring group had the option to use the tutoring services during the hours of operation for a minimum of 4 hours per week. The participants either participated in one-to-one tutoring sessions or group sessions.

The group tutoring sessions were held in a classroom that had been designated for the tutoring sessions. The group facilitator had access to all technical equipment, such as PowerPoint, and computers for presentations.

The one-to-one tutoring sessions were held in the tutoring center. Spaces had been partitioned to give some degree of privacy during the sessions. Two computers were available for use during the one-to-one sessions. Tutors had access to instructor manuals for references. Tutors maintained a current log of AEP students who attended tutoring and the name of the course or courses in which they received tutoring. Further, I was provided with the final grade outcome. This information was analyzed to determine

if there was a significant effect of tutoring services on final grade. The tutoring logs and test scores were significant but not high in construct validity.

As stipulated by the academic advisor, AEP students who attended tutoring sessions, regardless of academic advisor determined or self-determined assignment, maintained the same tutoring condition throughout the 2 semesters. For example, a student who attended a one-to-one session would not be allowed to attend a group session, unless it was approved by their academic advisor.

GPA. The GPA is the total of the grade points earned (i.e., the value of each letter grade earned times the number of credits each class is worth) divided by the total number of credits completed (Methodist University Student Handbook, 2008). Participants' GPA scores were obtained by the academic advisor from student records to determine the type of tutoring sessions students would be assigned.

AEP Students. AEP students were those who have been conditionally enrolled in Methodist University (Methodist University Student Handbook, 2008). These students were accepted on the condition of a signed contract (see Appendix A). These students had been determined to be academically at-risk students, which is defined as students whose high school GPA is lower than 2.0, SAT scores are below 900, and/or ACT scores are lower than 18 (Methodist University Student Handbook, 2008).

Tutoring groups. AEP students were required by their contract to attend tutoring as a condition of their acceptance in Methodist University. However, students who show satisfactory progress by maintaining a C or better were allowed to self-determine their

schedule, in that they chose their times to attend tutoring services. On the other hand, the academic advisor may require some students to attend a highly structured tutoring schedule (academic advisor determined) the following semester if their GPA is lower than the previous semester or if their current progress reports show less than satisfactory (below a C average) in the course. Students were assigned to one-to-one tutoring or group tutoring with either a peer tutor or a professional tutor. Students remained with their assigned groups for the duration of the semester.

Final Grade. The final grade is the overall course grade obtained at the end of the semester in the course in which the student received tutoring.

Computer. The research study required the examination of data in order to determine the effect of tutoring methods on grade outcomes. The data originated from sources that were archived in the college's DATATEL database. The Registrar's Office retrieved archived enrollment and grades of AEP students. The academic advisor retrieved archived AEP student assignment to tutoring sessions and groups. The database is the primary recording tool for all campus operations, ranging from academic transcript to demographic data.

Threats to Validity

Handal, Rankin, and Gilner (2004) discussed the different kinds of internal and external threats inherent in experimental research. Internal validity refers to threats that arise with the treatment group that might affect the analyses. For the purposes of this design, this study identified the following internal validity threats: history and morality.

Threats to external validity include sample selection and the ability to generalize beyond the college as well as future cohorts. The differences between at-risk students of the study population could weaken the external validity among different geographic locations. Ferguson (2004) suggested that using multiple sites reduces the threat. For this study, all archived student records at Methodist University were selected, which services students from multiple regions across North Carolina.

History refers to how experimental conditions might change during the course of the experiment, thus affecting the outcome. For example, AEP students may decide to transfer or leave college prior to completing the program. This study included students who updated their AEP contacts within the past year to minimize the threat of history.

To minimize the morality threat, all student records were examined from 2007 to 2009 academic years of AEP students to guarantee a sample large enough to perform statistical analyses. Morality, according to Handel et al. (2004), refers to participants who drop out of a study. For the purposes of this quantitative ex post facto study, some of the students might unexpectedly leave school. These kinds of threat are almost impossible to prevent and occur throughout all levels of higher education.

Background Data

Students had completed the background data form, which included information such as age and gender as well as ethnicity and extracurricular activities such as sports and band. (see Appendix B). These forms were collected from their student records to obtain student age, gender, and ethnic information; extracurricular activities were not

considered in this study. Students also completed a tutor services evaluation form (see Appendix C). Tutors completed a tutor evaluation form at the end of the semester (see Appendix D). These data forms were collected, coded, and analyzed, and the results are presented in Chapter 4.

Data Collection

I obtained a letter of cooperation form from Methodist University to collect data in this study (see Appendix E). An examination of student GPA and course outcomes were reviewed from the student records at the end of the 2- semesters, and the students were required to participate in the AEP program. I kept all data confidential by keeping them in a locked filing cabinet. All identifying information was removed from any tests, quizzes, and tutoring logs and replaced with a code that I kept confidential. Only the Registrar's Office, the academic advisor, and I had access to identifying information and raw data. All data were handled according to the record policies of Methodist University and will be destroyed after 5 years.

Data Analysis

This study used an ex post facto design to analyze the tutoring methods of the independent variable, self-determined tutoring compared to academic advisor determined tutoring, group tutoring compared to one-to-one tutoring, and peer tutoring compared to professional tutoring. The academic advisor determined tutoring was comprised of students who were given a structured schedule by their academic advisor to attend tutoring. Self-determined tutoring included those students who were given flexibility in

choosing the days and times to attend tutoring for instruction. The academic advisor during the 2007 through 2009 academic years determined all tutoring assignments.

The *t* test is a technique that assesses whether the means of two groups are statistically different from each other (Cozby, 2001). This analysis is appropriate because this study compared the mean of final grades (self-determined tutoring and academic advisor determined groups). An ANOVA is used when there are more than two levels of an independent variable (Cozby, 2001). In this study, the independent variable had six methods, which included self-determined tutoring and academic advisor determined tutoring measured using a *t* test, an ANOVA was used to measure differences in final grades for group tutoring, one-to-one tutoring, peer and professional tutoring. The final grades are in those courses that the students' received tutoring.

The data provided by the Registrar's Office and the Academic Enrichment Program Coordinator included high school GPA scores, SAT, and/or ACT scores and final grades in the courses students received tutoring services. Data were analyzed using the Statistical Package for the Social Sciences (IBM SPSS) 16.0 computer software program. Descriptive statistics were reported for sample demographics, and the independent, and dependent variables of interest. An independent samples *t* test was used to compare the final grade outcomes of students who self-determined their schedule for tutoring versus those who were academic advisor determined to attend tutoring. A one-way ANOVA was used to compare the type of tutoring sessions, such as one-to-one or group to final grade in the course for which the student received tutoring. A one-way

ANOVA compared the tutoring methods to determine whether there was a significant difference in final grades in courses in which the students received tutoring by their peers versus professional tutors. The ANOVA was appropriate for this study because it has the potential to produce significant values indicating whether there were significant differences within the comparisons being made.

The research questions to be answered were:

(1) Is there a significant difference between the final grade earned in a course the student received tutoring when comparing group tutoring sessions and one-to-one tutoring sessions?

(2) Is there a significant difference between the final grades earned between AEP students who attend tutoring based on self-determined schedules to AEP students who attend tutoring based on academic advisor determined tutoring schedules?

(3) Does tutoring provided by professional tutor s have a more positive effect on final grades compared to tutoring provided by their peers?

Hypotheses

There were three hypotheses for this study. Collectively these hypotheses predicted that there would be significant differences in the final grades of students who received tutoring by self-determined schedules compared to those who received academic advisor determined schedules. It was also predicted that there would be significant differences in final grades of students who received tutoring in a group setting compared

to those who were tutored in a one-to-one setting, and those tutored by their peers compared to those who received tutoring by professional tutors.

Null Hypothesis 1: There will be no significant difference between the final grades earned by the student who received tutoring in group session from those who received one-to-one tutoring.

Alternative Hypothesis 1: There will be a significant difference between the final grades earned by the student who received tutoring in group session from those who received one-to-one tutoring.

Null Hypothesis 2: There will be no significant difference in final grade earned by students who attended tutoring based on self-determined schedules compared to those students who attended tutoring based on academic advisor determined schedules.

Alternative Hypothesis 2: Students who self-determined their schedules for tutoring will perform significantly higher and earn higher final grades than those students who had academic advisor determined schedules.

Null Hypothesis 3: There will be no significant difference in final grades earned of students who receive tutoring services provided by professional tutors versus those students who are tutored by their peers.

Alternative Hypothesis 3: Students who receive tutoring services provided by professional tutors will earn significantly higher final grades than those students who are tutored by their peers.

Ethical Considerations

Approval from the Institution Review Board (IRB) was obtained, reference number 12-09-13-0048538 on December 10, 2013 through December 8, 2014, to conduct this study. Careful consideration was given to the nature of this study. No interaction occurred with the participants since all research data directly originated from archived records. The existing data were collected by the Registrar's Office and the Academic Enrichment Program Coordinator through the college's database and assigned a numerical code ranging from 1-100. The archived records provided did not include any individual student names or other identifiable information such as social security numbers.

The data were stored on a password-encrypted computer at the college accessed only by the principal investigator for a period of five years. After that date, the computer will be reformatted, which will erase all data. Only the researcher and staff who participated with the research had access to identifying information and data. All data were handled according to the record policies of Methodist University School and will be destroyed five years after each participant graduates from the University.

Summary

There is an increased focus on ensuring all students achieve academic success. As a result, schools, to include post-secondary schools must measure the achievement of the students, including students with physical or cognitive disabilities (Hock et al., 1999). The research design and methodology has been detailed in this chapter. The purpose of this study was to determine if statistically significant differences exist when comparing

tutoring conditions with final grade in the course tutoring was received among AEP students. The research questions guided the quantitative questions, and an independent samples *t* test was used to examine the results of self-determined tutoring versus academic advisor tutoring. A one-way ANOVA was used to compare group versus one-to-one tutoring and peer versus professional tutoring.

The study followed a quantitative ex post facto design. The use of statistical analysis through the use of final grades in courses and information gleaned from evaluations, presented a solid foundation for this research. The sample of AEP students was sufficient to investigate tutoring services. Permission was obtained from Methodist University. Course outcomes in the courses in which students received tutoring was analyzed using the IBM SPSS 16.0 computer software. Results of the analyses are provided in Chapter 4.

Chapter 4: Results

Introduction

Approval from the Institution Review Board (IRB) was obtained, reference number 12-09-13-0048538 on December 10, 2013 through December 8, 2014, to conduct this study. I investigated whether there was a relationship between methods of tutoring and the final grades of academically at-risk students. The first method was self-determined tutoring compared to academic advisor determined tutoring. This study attempted to determine if there was a significant difference between outcomes of AEP students who self-determined their tutoring schedule compared to AEP students who attended academic advisor determined tutoring sessions. I also investigated the setting in which tutoring took place, group compared to one-to-one tutoring. I also compared peer tutoring to professional tutoring. In this chapter, I present the results of the statistical analyses conducted to test the hypotheses that were proposed for this study.

Descriptive Statistics

Data Collection

Archived data including the academic records of 95 AEP students were analyzed to obtain final grade and GPA scores. Tutoring assignments were reviewed to determine which students self-determined their schedule for tutoring and which students were academic advisor determined for tutoring. Tutoring schedules were reviewed to determine student assignments (i.e., group versus one-to-one and peer versus professional).

Descriptive Statistics

Ninety-five AEP student records were used in the study. The participant records include 15 women and 80 men. Almost half of the participants, 45, were African American33 were Hispanic/Latino and 17 were Caucasian (see Table 1).

Table 1

Frequencies and Percentages for Participant Demographics

Demographic	*N*	%
Gender of participant		
Female	15	16
Male	80	84
Ethnicity of participant		
African American	45	47
Caucasian	17	18
Hispanic/Latino	33	34

Presentation of Data

Research Question 1

The first research question that guided this study was the following: Are there significant differences between the final grades earned by AEP students who attended tutoring based on self-determined schedules and AEP students who attended tutoring based on academic advisor determined tutoring schedules?

Null Hypothesis 1 predicted there would be no significant differences in final grades earned by students who self-determined their schedule for tutoring services compared to those students who attended tutoring based on academic advisor determined schedules for tutoring services. An independent sample *t* test was conducted to compare the final grades of AEP students who self-determined their schedule for tutoring versus AEP students whose academic advisor determined tutoring schedules. Independent samples *t* test was used to compare sample means to see if there was sufficient evidence populations differ. The test included Levene's test for equality of variances to determine if equal variances exist between the sample populations (Gravetter & Wallnau, 2007; Sheskin, 2007). If the *p*-value from the Levene test is statistical significant ($p < .05$), then the conclusion is reached that differences exist between the variances in population (Sheskin, 2007).

The analysis revealed there were significant differences between the final grades for self-determined tutoring $M = 87.15$, $SD = 6.66$ and academic advisor determined tutoring $M = 63.07$, $SD = 16.24$, $t\ (93) = .24$, $p = < .001$, $d = 0.14$. The effect size for this analysis ($d = 0.14$ was found to not exceed Cohen's convention for a large effect ($d = .80$). These

results revealed that students who self-determined their schedule for tutoring had significantly higher final grades than students who had academic advisor determined tutoring schedules, thus the null hypothesis can be rejected. Levene's test for equality of variances indicates the variances for self-determined tutoring and academic advisor determined tutoring were statistically different from each other, $p = < .001$ (see Table 2).

Table 2

Summary of Independent Samples t Test for Self-Determined and Academic Advisor Determined Tutoring

Tutor assignment	*N*	*M*	*SD*	*t*	*p*
Self-determined	34	87.15	6.66	8.24	< .001
Academic advisor determined	61	63.07	16.24	10.14	< .001

Research Question 2

The second research question that guided this study was as follows: Is there a significant difference between the final grades earned by students receiving group tutoring sessions and students receiving one-to-one tutoring sessions?

Null Hypothesis 2 predicted there would be no significant differences between the final grades earned by students who received tutoring in group sessions compared to those who received one-to-one tutoring. A one way ANOVA was conducted to examine if there was a statistically significant difference in final grades of students who attended group tutoring compared to those who attended one-to-one tutoring. For group tutoring, *M* =

78.96, *SD* = 12.50, *N* = 40, and one-to-one tutoring, *M* = 66.40, *SD* = 19.34, *N* = 55. The ANOVA revealed a statistically significant difference in the final grades of students who attended group tutoring compared to those who attended one-to-one tutoring. The Levene's test of error variances was statistically significant, F (1, 93) = 12.90, *MSE* = 282.86, η^2 = .01, p = .001, suggesting that the assumption of homogeneity of variance was not met.

The assumptions of ANOVA include a normal distribution of the values for each group, homogeneity of variance (equal variances), and the independence of values (Gravetter & Wallnau, 2007; Sheskin, 2007). The analysis included Levene's test of error variances to determine if equal variances exist between the sample populations (Gravetter & Wallnau, 2007; Sheskin, 2007). If the *p*-value from the Levene test is statistically significant (p < .05), then the conclusion is reached that differences exist between the variances in population (Sheskin, 2007).

When homogeneity of variance is violated, the *F* statistic may remain robust (Sheskin, 2007). When the large variances are associated with the large group size, the likelihood for a Type I error to occur increases, which means the alpha is less than the level of significance. Larger variances associated with small group sizes increases the likelihood for a Type II error to occur when the alpha is greater than the level of significance (Sheskin, 2007).

Normality can be assumed if the sample size is larger than 50 (Sheskin, 2007). According to Stevens (2002), sample sizes greater than 50 "approximate to normality" even when

the distributions depart from normality (p. 296). For non normal distributions, the approximation to normality can be good with sample sizes as few as 10 to 20. The sampling distribution of *F* and the critical values are only slightly affected when sampling from normal and non normal distributions will not differ by much (Aron & Aron, 2003).

Eta squared (η^2) is interpreted as an estimate of the population strength of association between the outcome variable and grouping variable on a scale of 0 through 1 (Sheskin, 2007). A statistically significant difference existed between group tutoring and one-to-one tutoring.

The Shapiro-Wilk test is a *goodness of fit test*, which examines whether a given distribution is not significantly different from one hypothesized on the basis of the assumption of a normal distribution (Sheskin, 2007). The Shapiro-Wilk test is used when *n* is less than 3000. If the difference between the largest positive and negative difference in the mean and standard deviation is less than the Shapiro-Wilk value, then the *goodness of fit* test is concluded to be significant at the alpha value.

As observed in Figure 1 and Figure 2, the one sample Shapiro-Wilk tests revealed that final grades of students who attended group tutoring compared to those who attended one-to-one tutoring were normally distributed. The Shapiro-Wilk value was 0.94 (p = .014, N = 55) for group tutoring, and the Shapiro-Wilk value was 0.94 (p = .066, N = 40) for one-to-one tutoring. The Shapiro-Wilk tests were statistically significant ($p < .05$) for group and one-to-one tutoring. Logarithmic and square root transformations were

conducted, but the variables did not lend favorably toward transformation; therefore, respectively the results of the analyses revealed that Null Hypothesis 1 cannot be rejected (see Table 3).

Table 3

ANOVA Results One-to-One Tutoring Versus Group Tutoring

Source	*df*	*SS*	*MS*	*F*	n^2
Between groups	1	3649.01	3649.01	12.90*	.01
Within groups	93	26306.50	282.80		
Total	94	29955.50	55.00		

Note. *$p < .001$, one-tailed.

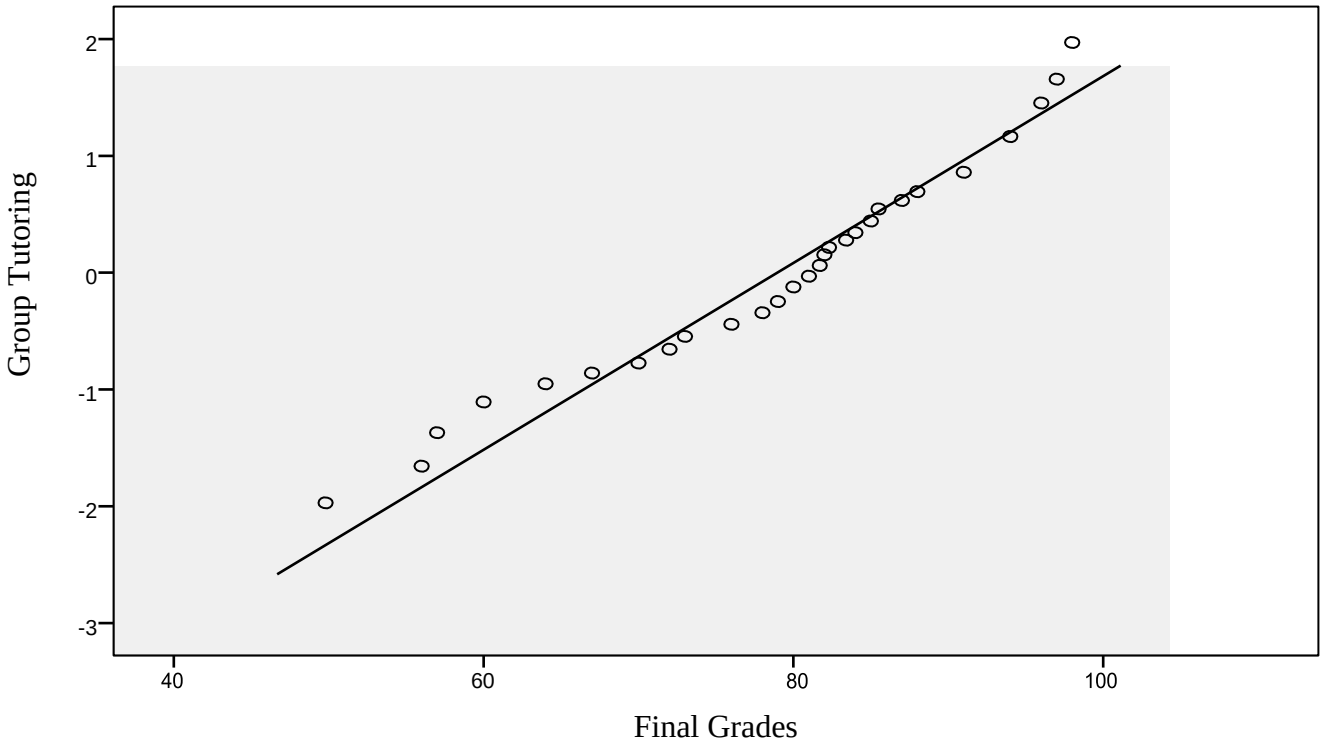


Figure 1. Profile plots of group tutoring distribution.

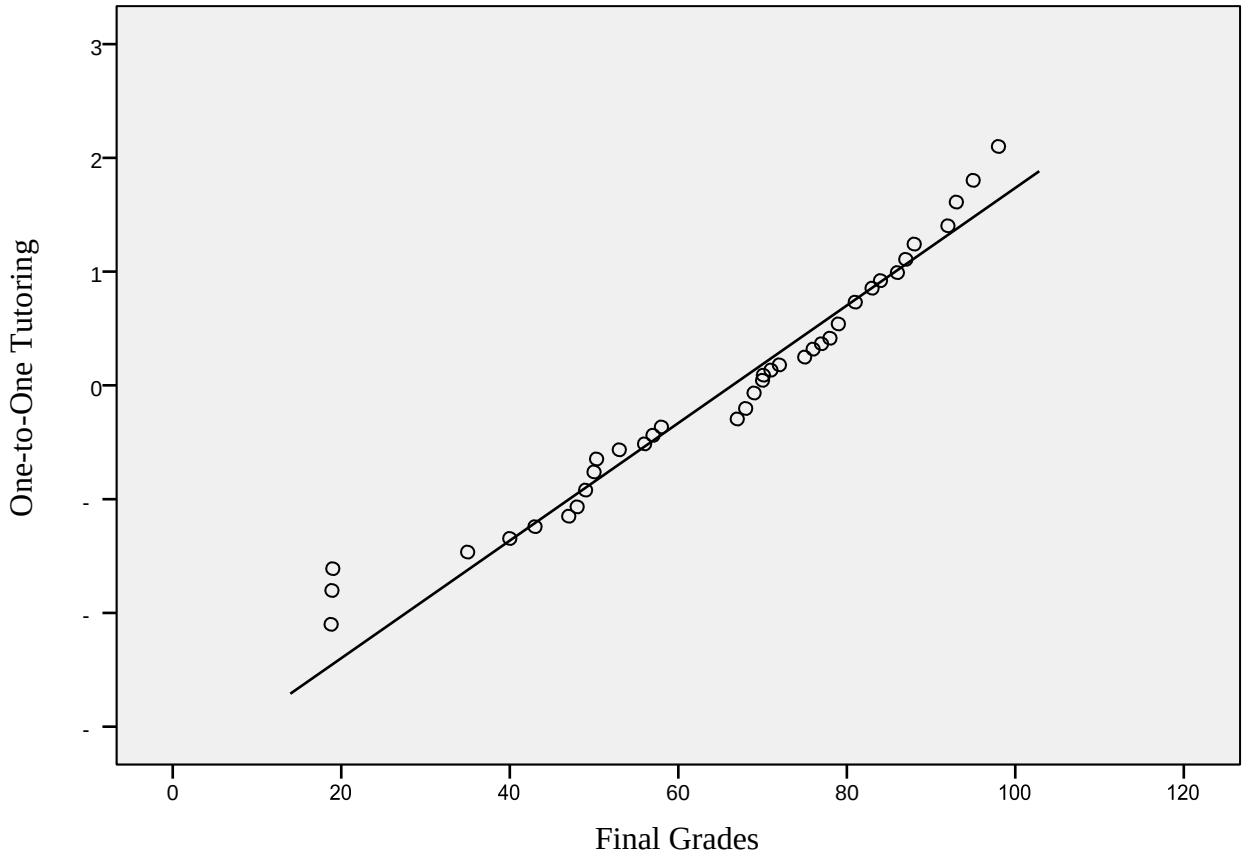


Figure 2. Profile plots of one-to-one tutoring distribution.

Research Question 3

The third research question that guided this research was as follows: Does tutoring provided by professional tutors have a more positive effect on final grades compared to tutoring provided by peers?

Null Hypothesis 3 predicted there would be no significant differences in final grades earned by students who received tutoring services provided by professional tutors

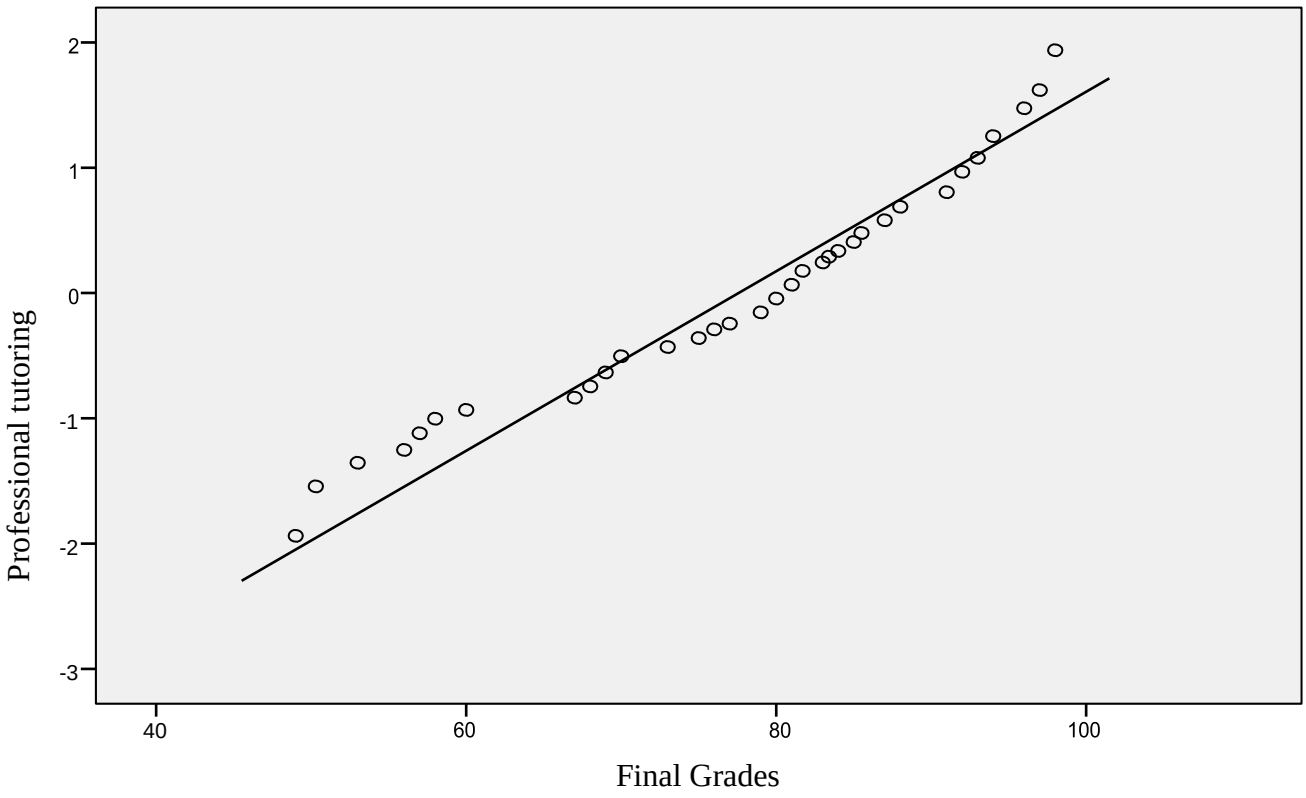
versus those students who were tutored by their peers. A one way ANOVA was conducted to examine if there was a statistically significant difference in final grades of students who attended peer tutoring compared to those who attended professional tutoring. For peer tutoring, M =77.56, SD =13.95, N =56, and professional tutoring, M = 63.25, SD = 19.55, N = 39. The ANOVA revealed a statistically significant difference in the final grades of students who attended peer tutoring compared to those who attended professional tutoring. The Levene's test of error variances was statistically significant, F (1, 93) = 17.35, MSE = 271.44, η^2 = .01, p = < .001, suggesting that the assumption of homogeneity of variance was not met. As observed in Figure 3 and Figure 4, the one sample Shapiro-Wilk test results revealed that final grades of students who attended peer tutoring compared to those who attended professional tutoring can be assumed to be normally distributed. According to Sheskin (2007) if the sample sizes are greater than 20, normal distribution can be assumed. The, Shapiro-Wilk value was 0.94 (p = .052, N = 39) for professional tutoring and, the Shapiro-Wilk value was 0.94 (p = .056, N = 56) for peer tutoring. The Shapiro-Wilk tests were statistically significant (p < .05) for academic and peer tutoring. Logarithmic and square root transformations were conducted but the variables did not lend favorably toward transformation. The results of the analysis revealed the null hypothesis 3 cannot be rejected (see Table 4).

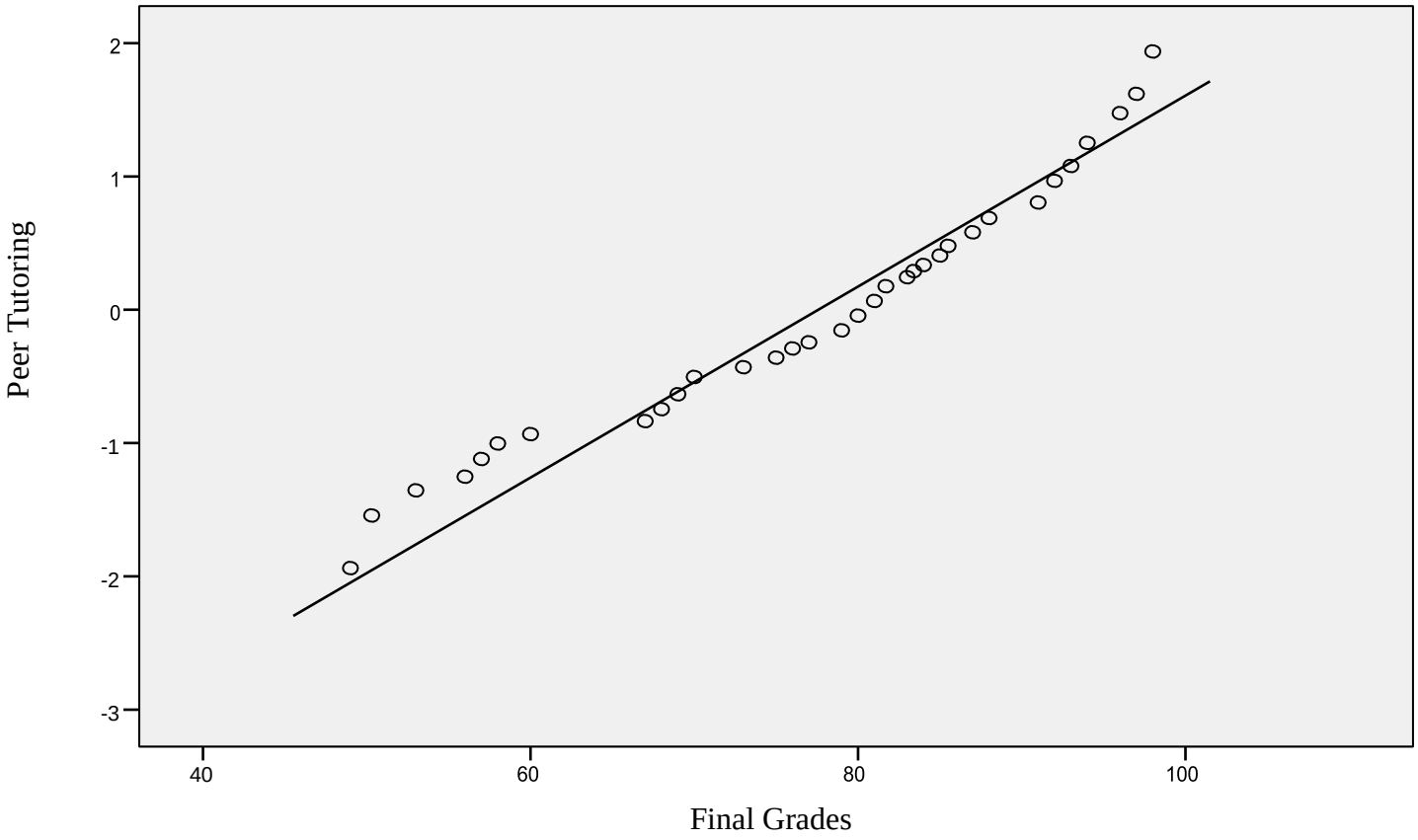
Table 4

ANOVA Results Peer Versus Professional Tutoring

Source	*df*	*SS*	*MS*	*F*	n^2
Between groups	1	4711.50	4711.50	17.35*	.01
Within groups	93	25244.07	271.44		
Total	94	29955.50			

*$p < .001$, one-tailed.




Peer Tutoring
2
1
0
-1
-2
-3
40
60
80
100
Final Grades

Post hoc Analysis

The analyses gave results of peer tutoring compared to professional tutoring and one-to-one tutoring compared to group tutoring and final grades; however, two questions needed further inquiry, these questions were: 1) is there a statistical significant difference between final grades of students who received peer tutoring in a one-to-one setting compared to those students who received professional tutoring in a one-to-one setting; 2) is there a statistically significant difference between final grades of students who received peer tutoring in a group setting compared to students who received professional tutoring in a group setting. A paired samples *t* test was used to investigate these questions rather than Tukey's test because this study lacked three comparison groups and tends to be more conservative.

A paired samples *t* test was conducted to compare peer group tutoring sessions and professional group tutoring sessions to determine which tutoring method had the higher final grades. For the peer group tutoring compared to professional group tutoring, the primary analysis revealed a statistically significant difference in the final grades. Final grade scores of peer group tutoring were $M = 2.12$, $SD = 3.73$, $t\ (33) = 3.31$, $p = < .001$, and professional group tutoring scores were $M = -0.09$, $SD = 0.24$, $t\ (33) = -2.15$, $p = 0.04$ (see Table 5). Therefore, the null hypothesis, which states there will be no significant differences between the final grades earned by students who received tutoring in group sessions compared to those who received one-to-one tutoring for students defined at-risk, can be rejected at the .05 level (see Table 5).

Table 5

Summary of Paired Samples t Tests Peer Group and Professional Group Final Grades

Paired differences	*N*	*M diff*	*SD*	*t*	*p*
Peer & group	95	2.12	3.73	3.31	< .001
Professional & group	95	- 0.09*	0.24	- 2.15*	.04

**Note*. A negative *t* value indicates a reversal in the directionality of the effect, which has no bearing on the significance in between groups. A negative *M* diff score indicates that peer tutoring in group setting final grades were higher than professional tutoring in group setting and final grades.

A paired samples *t* test was conducted to compare peer tutoring in a one-to-one setting and professional tutoring in a one-to-one setting to determine which tutoring method had the better final grades. For the peer one-to-one tutoring compared to the professional one-to-one tutoring, the primary analysis did not reveal a statistically significant difference in the final grades. Final grade scores of peer one-to-one tutoring were M = -.06, SD = 0.33, t (36) = -1.05, p =.0.30, and professional one-to-one tutoring scores were M = -0.16, SD = 1.54, t (36) = 0.64, p = 0.53 (see Table 6). Therefore, the null hypothesis, which states there would be no significant differences in final grades earned by students who received tutoring services provided by professional tutors versus those students who were tutored by their peers, cannot be rejected at the .05 level.

Table 6

Summary of Paired Samples t Tests Peer One-To-One and Professional One-To-One Final Grades

Paired differences	*N*	*M diff*	*SD*	*t*	*p*
Peer & one-to-one	95	- .06*	.33	-1.05*	.30
Academic & one-to-one	95	0.16	1.54	0.64	.53

**Note.* A negative *t* value indicates a reversal in the directionality of the effect, which has no bearing on the significance in between groups. A negative *M* diff score indicates that peer tutoring in group setting final grades were higher than professional tutoring in group setting and final grades.

Summary

The purpose of the quantitative ex post facto study was to examine whether there was a relationship between methods of tutoring, and the final grades of academically at-risk students. To address the research questions concerning the influence of tutoring methods on final grades statistical analysis was conducted to examine 95 archived records to AEP students who were conditionally enrolled in Methodist University. Statistical analysis did support hypothesis two; however, the statistical analyses did not support hypotheses 1 and 3.

Null hypothesis 1 predicted there would be no significant differences in final grades earned by students who self-determined their schedule for tutoring services compared to those students who attended tutoring based on academic advisor determined schedules for tutoring services. The independent sample *t* test was calculated to test the hypothesis, and in was confirmed that final grades of self-determined students were

significantly higher than final grades of academic advisor determined students. The null hypothesis cannot be rejected at the .05 level of significance (Sheskin, 2007).

Null Hypothesis 2 predicted there would be no significant differences between the final grades earned by students who received tutoring in group sessions compared to those who received one-to-one tutoring. An ANOVA was calculated to test the hypothesis, and it was confirmed that the final grades of students who attended group tutoring were significantly higher than the final grades of students who attended one-to-one tutoring. The null hypothesis cannot be rejected at the .05 level of significance (Sheskin, 2007).

Null hypothesis 3 predicted there would be no significant differences in final grades earned by students who received tutoring services provided by professional tutors compared to those students who were tutored by their peers. An ANOVA was calculated to test the hypothesis, and it was confirmed that the final grades of students who attended peer tutoring were significantly higher than the final grades of students who attended professional tutoring.

Paired samples *t* tests was calculated to compare the final grades of students who attended peer group tutoring to students who attended professional group tutoring. The test yielded significantly higher grades for students who attended peer group tutoring than students who attended professional group tutoring.

In Chapter 5, I will discuss the social change implications of this study as well as recommendations for tutoring managers and college leaders. The limitations of this study

will be discussed in further detail, and recommendations for further research will be described relevant to strengths gleaned from this study.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this quantitative ex post facto study was to determine whether significant differences existed between methods of tutoring and the final grades of academically at-risk students. The first method compared self-determined schedules to academic advisor determined schedules. The second method compared group tutoring to one-to-one tutoring. The third method compared peer tutoring to professional tutoring. In this study, I investigated if there was a significant difference between final grades and tutoring methods (i.e., self-determined versus academic advisor determined, group versus one-to-one, and peer versus professional tutoring). The quantitative ex post facto methodology was used because it is the statistical technique used to examine and describe any significant mean differences among the variables. The study was limited to 95 students who were enrolled in the AEP at Methodist University during the 2007 through 2009 academic years.

Chapter 5 contains conclusions derived from answering the research questions within the context of the literature review and research results. Implications of the research for college leaders are discussed. Chapter 5 also includes the limitations of the study and recommendations for future research.

Summary and Interpretation of Findings

The research study was designed to test whether statistically significant differences existed between tutoring methods and final grades. Three research questions

were used to narrow the scope of the study. The current section includes the results as compared with the literature review.

The first research question addressed whether statistically significant differences existed between the final grades earned by AEP students who attended tutoring based on self-determined schedules and the AEP student who attended tutoring based on academic advisor determined tutoring schedules. Analysis of final grades earned revealed a statistically significant difference between students who self-determined their schedule for tutoring compared to those who had academic advisor determined schedules for tutoring. The results indicated that students who self-determined their schedules for tutoring had higher final grades than those who had academic advisor determined schedules for tutoring. No researchers had reported outcomes for students who were required to participate in tutoring services but allowed to self-determine their schedules; however, research did show outcomes for students who volunteered for tutoring compared to those who were mandated for tutoring. Researchers have found that students who volunteer for tutoring services are more likely than those mandated for tutoring to receive a passing grade (Maxwell, 1990; White, Lare, Smeaton, Waters, & Mueller, 2007). In the research study by Porter (2013), the study showed that college students who volunteered to attend tutoring for College Algebra had better grades on tests than students who were mandated to attend tutoring for College Algebra. The authors suggested that students who volunteer for tutoring other variables, such as motivation, may have a stronger effect on student achievement. In another study by Haydon, Gage,

and Hawkins (2013), the authors demonstrated that students who volunteer to attend tutoring services had better grades than students who are required to attend tutoring. The results of the current research supported some of the literature reviewed (Haydon, et al., 2013; Maxwell, 1990; Porter, 2013; White et al., 2007).

The results of the research did not support Winston, Cees, Van Der Vleuten, and Albert's (2010) conclusions regarding mandated tutoring. The authors suggested that academically weaker students who most need assistance often fail to seek help and will not volunteer for such programs. The authors contended that at-risk students often blame their failure on personal reasons rather than study skills. Research showed improved performance and higher grade outcomes for at-risk medical students who were mandated to attend tutoring (Winston et al., 2010). A plausible explanation for the contradiction is that the authors did not examine students below graduate level courses or students who face situational variables different from their study participants.

The second research question addressed whether statistically significant differences existed between the final grades earned by AEP students who attended one-to-one tutoring compared to the AEP student who attended group tutoring. Analysis of final grades revealed a statistically significant difference between students who received group tutoring compared to those who attended one-to-one tutoring. The results indicated that students who attended group tutoring had better final grades compared to those who attended one-to-one tutoring. Research conducted by Jitendra, Dupuis, and Rodriguez (2012) showed that students who participated in small group math tutoring sessions

outperformed students not in group sessions on word problems after 30 hours of problem solving experiences following the tutoring intervention. This finding was consistent with earlier studies suggesting that group tutoring is effective in academic success of at-risk students (Fuchs et al., 2008). Further, this is consistent with research conducted by Jager, Schotanus, and Themmen (2013) that showed first year medical students who were tutored in group sessions had better grades on their exams than students not in group sessions. In addition to higher grades outcomes, absentee rates were lower for students assigned to groups compared to those who were not assigned to groups (Jager et al., 2013). Although research has revealed better outcomes in group settings, research has also illustrated some gains in one-to-one tutoring sessions. Research conducted by Warren-Kring and Rutledge (2011) showed student performance improved in reading with one-to-one tutoring. Fuchs et al. (2013) also agreed that one-to-one tutoring increased student performance but felt that variables such as tutor training, total hours of instruction, and the expertise of the individuals who implemented the tutoring program may contribute to student success. Alagappan (2005) suggested one-to-one tutoring sessions offer the opportunity to expose the student's preparedness or lack thereof. One-to-one tutoring gives the student and the tutor opportunity to build a mentoring relationship that can develop and inspire the student to learn (Alagappan, 2005).

The third research question addressed whether statistically differences existed between students who received tutoring from their peers compared to those who received

tutoring from professional tutors. The results indicated that students who were tutored by their peers had better final grades compared to students tutored by professional tutors.

Research has demonstrated that peer assisted learning is effective in the development of new skills, and students demonstrate enhanced learning and achievement (Comfort, 2011; Topping, 1998). In the research conducted by Comfort (2011), the study showed higher grades in the students who were peer tutored compared to students tutored by professionals. This is further supported by research that showed students who were tutored by their peers in physics performed better than students who were not tutored. Research conducted by Iwata, Furmedge, Sturrock, and Gill (2014) revealed that of 1,050 students who attempted a final exam, 172 were peer tutors, and students who served as peer tutors outperformed students in all components of the exam. These results are consistent with other findings that suggest peer tutors receive more feedback, practice, recall, and repetition of material (Korner & Hopf, 2014).

Other researchers have suggested that peer tutoring can have disadvantages (Edwards, 2013; Foster, Toma & Troske, 2013; Rudland & Rennie, 2013). Peer tutoring consumes time in designing and appropriate peer selection and matching. Further, training requirements for peer tutors are greater as it would be for professionals who may have training in teaching and learning skills (Rudland & Rennie, 2013). It is suggested that the quality of tutoring from a peer tutor may be inferior to that from a professional tutor and the need for monitoring and quality control is higher. It also suggested that peer

tutoring is costly and consumes a lot of resources. Likewise, the tutor's mastery of the content of tutoring is likely to be less than that of a professional tutor (Foster et al., 2013).

Although there are studies that show the effectiveness and benefits of peer tutoring and professional tutoring, the findings of the current study are in line with previous research that has also demonstrated that peer tutoring results in improved skills and higher grades (Comfort 2011; Perrott, Vannest, & Williams, 2013; Topping 1998). Further, the findings of the current study were consistent with earlier studies suggesting that students who are tutored by their peers have more confidence in their ability to master the material (Bobko, 1984) and peer tutoring can be an important part of interaction because peers provide natural contexts for peer behaviors (Klavian & Block, 2008). Vygotsky (1962) proposed that children learn through such social interactions.

The preliminary results raised additional questions within the study. The first question raised was if statistically significant differences existed between the final grades of students who received peer tutoring in a one-to-one setting compared to students who received professional tutoring in a one-to-one setting was addressed. The second question raised was if statistically significant differences existed between final grades of students who received peer tutoring in a group setting compared to student who received tutoring in a professional setting was addressed.

Post hoc analysis of peer tutoring compared to professional tutoring in group setting using a paired-samples *t* test revealed a statistically significant difference in final grades. The post hoc analysis of peer tutoring compared to professional tutoring in one-

to-one sessions using a paired-samples *t* test did not reveal a statistically significant difference in final grades. Research has demonstrated that there are benefits of peer tutoring as well as group tutoring (Fuchs et al., 2008; Klavian & Block, 2008; Nguyen, 2013). Peer tutoring has been used across academic subjects and has been found to improve academic achievement for students within a wide range of content areas (Nguyen, 2013). Some positive outcomes of peer tutoring include social, self-concept, and less disruptive behaviors (Nguyen, 2013). Peer tutoring increases students' sense of responsibility for their achievement (Dvorak, 2012). Moreover, research has shown that in a group tutoring setting, students are more likely to learn more and remember information longer when they actively engage in their own learning (Sieminski & Seden, 2013). One way to accomplish this is with group tutoring sessions. These findings were consistent with studies that suggested peer tutoring provides a natural context for peer behaviors (Klavian & Block, 2008; Nguyen, 2013) and group tutoring is effective in the academic success of at-risk students (Fuchs et al., 2008; Sieminski & Seden, 2013).

Limitations

In this research study, I examined whether significant differences existed between methods of tutoring and the final grades of academically at-risk students enrolled in the AEP at Methodist University during the 2007 to 2009 academic years. The study was limited to 95 students who were conditionally enrolled in the AEP program. I did not examine differences in final grade outcomes using variables related to gender or race, which was a limitation of this study. The focus of this study was to only examine

significant differences between tutoring methods and final grades of students labelled academically at-risk regardless of gender or race. However, for information purposes the demographics are as follows: Of the 95 students, 15 of the students were women. Eighty of the remaining students were men. In addition, almost half of the participants, 45, were African American, 33 were Hispanic/Latino, and 17 were Caucasian.

According to the archived records, the assignments were based on feedback from professors and progress reports from professors and high school transcript scores in math, science, and English. In addition, student SAT/ACT scores in math were used as assignment criteria. Relying on archived student data increases the possibility of fluctuations of the grouping variable such as group assignments, which is another limitation of this study. This study only examined significant differences between tutoring methods and final grades of students labelled academically at-risk; therefore, gender or race was not included in the statistical analyses reported in Chapter 4. This particular group of students admitted to the AEP program during the 2007 to 2009 academic years was largely minority and male. Of the 95 student records used in this study, 78 were non-Caucasian and 80 were men. Thus, in any tutoring method, minority students and men would have been the dominant demographic.

However, for information purposes, the statistical analyses are as follows: Of the 34 students assigned to self-determine tutoring, 16 were Hispanic, 12 were African American, and six Caucasian. Twenty-nine were men and five women. Of the 61 students with academic advisor determined tutoring, 19 students were Hispanic, 31 were African

American, and 11 were Caucasian. Fifty-one were men and 10 were women. Of the 40 students assigned to group tutoring, 15 were Hispanic, 15 were African American, and 10 were Caucasian. Thirty were men and 10 were women. Of the 55 students assigned to one-to-one tutoring, 22 were Hispanic, 25 were African American, and eight were Caucasian. Fifty were men and five were women. Of the 56 students assigned to peer tutoring, 22 were Hispanic, 26 were African American, and eight were Caucasian. Fourteen were women and 42 were men. Of the 39 students assigned to professional tutoring, 17 were Hispanic, five were African American, and 17 were Caucasian. Thirty-eight were men and one was a woman.

The study was also limited to students who were considered academically at-risk, rather than students who are considered at-risk because of social disadvantages or because of physical or cognitive disabilities. Another limitation surrounding the research findings is the sample size. Methodist University enrolls a minimum of 35 students in the AEP each year, but no more than 60 students in the AEP program during an academic year; as a result, this study had the inability to generalize to larger colleges located in metropolitan areas, which are unlike colleges in more rural areas.

It is noted that the study results may not generalize beyond the study environment. The study focused on the relationship between conditions of tutoring and the final grades of academically at-risk students conditionally enrolled at Methodist University. Methodist University is a small private religious university. Therefore, similar results may not be found during replication of this study using unlike populations.

Implications for Social Change

There has been an increase in the number of at-risk students enrolled in colleges and universities (Hock et al., 1999). Research has demonstrated that academic intervention programs, particularly tutoring, have been successful in increasing student grades and may lead to increased student retention and persistence (Abrams et al., 1984; Hock et al., 1999; Patrick et al., 1999). The results of this study indicated that tutoring methods are related to final grade outcomes.

Archival data demonstrated that students who received tutoring from their peers had better final grades than those who received tutoring from professional tutors. Tutoring programs that employ tutors who are similar in some way such as age, grade, or academic level to the tutee will increase the efficacy of tutoring programs (Hock et al., 1999). Further, students learn through social interactions of their peers (Vygotsky, 1962). Research has revealed that not only did students have better final grades with peer tutors but they also had better final grades in a group tutoring setting.

From a social change perspective, college leaders can become aware that the type of tutoring matters in student success. Awareness of the correlations between tutoring methods and grade outcomes may give opportunity for additional support or services to enhance student success. Tutoring sessions can be designed to provide students with an environment in which they will have natural contexts for peer behaviors and social interactions. Further, tutoring sessions can be custom designed that meet specific goals, a tutor can develop rigorous standards while remaining sensitive each student's particular

strengths and weaknesses. The current study has set a precedent for future studies with a positive emphasis as tutoring services and methods is further explored in the college population with at-risk students.

Recommendation for Action

The research findings offer valuable insight for college/university leaders and tutoring managers regarding student achievement. The current section contains recommendations for tutoring managers using various tutoring models. This section also includes recommendations for community college leaders regarding tutoring methods.

Tutoring Manager

Tutoring managers can draw upon a large number of management resources when considering who to best implement and manage their tutoring programs. Tutoring managers must first try to meet the needs of their student population whether they provide service to all students or target at-risk students (Dvorak, 2012). Tutoring managers must also decide what types of services to offer, for example, appointment, walk-in, individual, group, peer, professional, etc.

The goal of tutoring is to assist students to improve academically; tutoring is also a social process where motivation and learning skills improve through social interaction (Hartman, 1990). Group or individual sessions give students opportunity to interact with each other. Tutoring managers should consider providing group and individual services. Some students prefer group settings because students may contribute and have opportunity to interact on a social level (Hartman, 1990). Students can bring issues and

experiences to the tutoring setting that can be discussed openly and used to build new thinking (Dvorak, 2012). On the other hand some students may be shy about the social setting or simply want the undivided attention of their tutor (Dvorak, 2012).

Tutoring managers could provide walk-in and appointment based tutoring for their individual services. This gives students the flexibility to bring questions as a need arises. Further, the tutoring manager could provide rooms where students can work on homework and have tutors available as needed. Appointments can be made available for students who may require an extended amount of time for services.

Tutoring managers could provide supplemental instruction, which is designed to assist students by providing regularly scheduled, out of class study sessions. Supplemental instruction techniques are designed to identify historically difficult classes and provide group learning sessions with a trained tutor who will work with students in the group (Sieminski & Seden, 2011).

Tutoring managers should continue to address individual learning needs of the students; as such tutoring managers should be aware of new trends to see if these can be incorporated into their services.

College Leaders

College leaders could find additional ways to support learning through tutoring services. The research findings illustrated the final grades of AEP students were higher for those students who were tutored with peers in group setting. Leaders working with instructors might consider the creation, or expansion, of academic learning centers. The

centers could function as intervention stations that identify not only academically at-risk students, but any student who may need tutoring services. Referrals to trained counselors in student support services could be of additional assistance.

College presidents, vice-presidents, deans, department chairs, etc., have the capacity to coordinate with different divisions of their respective colleges to emphasize the importance of academic intervention programs such as tutoring. Further, to emphasize the importance to different methods of tutoring to support individual student academic needs.

Increased awareness of the benefit of tutoring services and methods for academically at-risk students is needed to reduce academic failure. The results of this study can be shared with staff and instructors to promote more effective tutoring services and the implementation of a variety of services.

The results of this study showed that there were statistically significant differences between students who attended self-determined tutoring versus academic advisor determined tutoring, group versus one-to-one tutoring and peer tutoring versus professional tutoring. The results from the post hoc analysis did suggest a benefit to students who attend peer tutoring in a group setting. Colleges and universities could be flexible in providing a variety of tutoring methods and conditions to better fit student needs.

Recommendations for Further Study

To be most effective, colleges and universities must use existing resources and develop tutoring programs that meet student needs. Based on the statistically significant results of this study, it may be beneficial to consider replicating this study with longer time fame. Comparing a larger number of students who are considered at-risk may provide more significant results. In addition to the comparison of students labelled at risk, other variables such as gender and race could be included which may provide significant results. Further, this study should be replicated in a quantitative, causal-comparative design where the research findings could be compared with other colleges/universities. The statistical power (eta squared) for each one-way ANOVA conducted in the study was low, ranging between .00 and .01. Perhaps schools where larger sample sizes can be obtained would produce significant results based on larger enrollments.

Another beneficial research inquiry could include a qualitative, descriptive study at the same college. Creating surveys that measure situational variables such as motivation, family problems, self-esteem, and labeling as academically at-risk might yield more information than the completed study, which relied on archived records stored in a computer.

Conclusions

Finding ways to improve tutoring to enhance student success is integral for academic success. This study provides evidence of the need to acknowledge and better understand the individual academic needs of at-risk college students. Although more

studies need to be conducted, this study strongly suggests that tutoring methods influence final grades.

This study showed there was a statistically significant difference between the final grades of students who self-determined their schedule for tutoring compared to those who had academic advisor determined schedules for tutoring. The study also showed a statistically significant difference between final grades of students who received tutoring in a group setting compared to those who received tutoring in a one-to-one tutoring setting. In addition, the results of this study showed a statistically significant difference between the final grades of students who received tutoring from their peers versus those who received tutoring from professional tutors. The results from the post hoc analysis suggested that students, who received tutoring from their peers in group settings, had better final grades compared to those who had tutoring in one-to-one tutoring from professional tutors. The results of this study offer the potential for positive social change by advancing the understanding of how to provide tutoring and other academic intervention programs to at-risk students in order to increase their academic success in post-secondary education. Additionally, the study was able to promote awareness of the increased need for academic intervention programs.

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Appendix A: Methodist University Academic Enrichment Contract

The Academic Enrichment Program is a 2 semester program; students who qualify for this program must sign this contract as a condition to their enrollment at Methodist University.

As a condition of my admission to the Methodist University, I _____agree to the following terms:

- I understand that there will be a review of my performance by the 4th week of all classes. I understand I can be dismissed from the AEP program and Methodist University, if I have failed to abide by the terms of this agreement.
- I understand that I must attend tutoring sessions determined by my academic advisor.
- I understand that I must remain in the tutoring section given by my academic advisor.
- I will attend all of my classes. If I must miss a class due to illness or extenuating circumstances, I will notify my academic advisor and instructors before the class and make arrangements to complete any missed assignments/tests.
- I will meet with my academic advisor as directed. If I must miss an appointment, it is my responsibility to cancel in advance and reschedule the appointment.
- My first semester course load will be no more than 12 credit hours or as determined appropriate by my academic advisor.
- I will utilize a daily planner to record test dates, due dates for assignments, manage my study time, and record grade outcomes. I will share my planner with my advisor during our meetings.
- I understand my advisor is the only person who can make schedule changes for me.
- I will update my academic advisor of any changes in my contact information (address/phone) and will check my campus e-mail daily.
- I agree that my academic advisor may contact my parent(s)/guardian(s), MU offices, academic departments and faculty at any time regarding my academic progress and fulfillment of this contract.
- I understand that at the end of the spring semester I must have earned a GPA of 2.0 or better to remain at Methodist University.

- I have read and understand the policies, requirements and academic standing information as stated in this contract and accept full responsibility for my academic progress. If I fail to meet any of the requirements listed above, I understand I may be dismissed from the AEP program and from the Methodist University for the current or future semesters.

_____
_____

Student Signature Parent/Guardian Signature

_____ _____

Admissions Officer Academic Advisor Signature

Appendix B: Background Data Form

Dear Student,

If you have agreed to participate in the study, please provide the following demographic information.

1. Age: _____

2. Male: _____ Female: _____

3. Ethnicity:
   Asian: _____
   Caucasian: _____
   Hispanic: _____
   African American: _____
   Native American: _____
   Other: _____

4. Where you enrolled in the Academic Enrichment Program yes or no

5. What is the highest level of education you mother obtained:
   Some schooling__
   High school__
   Bachelor's Degree__
   Master's Degree__
   Higher than Masters__

6. Do you participate in any extracurricular activities (i.e. sports, drama, etc.?)

Appendix C: Methodist University Tutoring Evaluation Form

Please Rate All Items Using the Following Scale:
1 = Definitely Yes
2 = Yes
3 = Somewhat Yes
4 = Somewhat No
5 = No
6 = Definitely No

Name of Tutor: _____

Courses Tutored (i.e., MAT101) _____

Location

_____ 1. The location of the tutoring services is convenient.

Scheduling (Please answer if you volunteer to receive tutoring services)

_____ 2. I was able to schedule an appointment with ease.

Tutor

_____ 3. My tutor communicated easily with me.

_____ 4. I felt comfortable about asking my tutor questions.

_____ 5. My tutor was familiar with the material.

_____ 6. My tutor explained the subject matter so I could understand it.

_____ 7. My tutor had a genuine interest and knowledge of the subject matter.

_____ 8. My tutor had a good rapport with me.

_____ 9. My tutor listened carefully.

_____ 10. My tutor answered questions well and provided examples to clarify problems.

_____ 11. My tutor spoke clearly and distinctly.

_____ 12. My tutor came well prepared for each session.

_____ 13. My tutor allocated enough time for questions.

_____ 14. My tutor encouraged my participation in each session.

_____ 15. My tutor suggested ways to improve my study habits.

Tutoring

_____ 16. As a result of tutoring, I study more effectively for the course.

_____ 17. The major objective of the tutoring program is to provide you help in becoming an independent learner in the course. Was this objective meet?

_____ 18. Were you satisfied with the overall quality of the tutoring?

Grades

_____ 19. Before tutoring, what did you expect your grade in the course to be?

A B C D F Withdraw

_____ 20. Now, after being tutored, what do you anticipate that your grade in the course will be?

A B C D F Withdraw

_____ 21. Has tutoring helped you raise your grades?

_____ 22. Has tutoring kept you from dropping the course?

Future Service

_____ 23. I would refer a friend to the Learning Center tutoring program

_____ 24. If I had problem in another course, I would seek tutoring here.

_____ 25. If my tutor were qualified to tutor another course I was taking, I'd request him/her again.

Please write any additional comments below: _____

Appendix D: Methodist University Tutor Evaluation Form

Please respond to the following questions.

1. What course are you tutoring? _____
2. Approximately how many students did you work with? _____
3. Are you a peer tutoring (student) or a professional tutor? _____
4. Circle which tutoring method you delivered: one-to-one tutoring or group tutoring.

Please respond to the following questions.

1. Did the student come prepared for the session? _____
2. Did the student take an active role in the session? _____
3. Did the students use tutoring regularly? _____
4. Did you find the student asking for one type of help while actually needing another? _____
5. Did the student make progress during the time you worked together? _____
6. How frequently did you see each student during the semester? _____
7. Did student inform you of their grades improving as a result of tutoring? _____
8. Did you refer student to other resources, such as writing center? _____
9. Do you have any comments about the student or you experience as a tutor this semester.

Appendix E: Letter of Acknowledgement

OFFICE OF THE VICE PRESIDENT FOR ACADEMIC AFFAIRS

December 3, 2013

Dear Valeria Russ,

Based on my review of your research proposal, I give permission for you to conduct the study entitled The Comparative Effect of Tutoring Services on High Risk College Freshmen within the Methodist University. The purpose of this Agreement is to provide Valeria Russ with access to records of students who were enrolled in the Academic Enrichment Program from 2007-2009 academic years, for use in research in accord with the HIPAA and FERPA Regulations. I authorize you to review records of AEP students for grade point averages, SAT scores, and ACT scores from the Office of Admissions. I further authorize you to obtain semester grades and final grades from instructors of AEP students in the courses they received tutoring. You may also gather tutoring information from the AEP Coordinator, such as, tutoring assignments, tutoring evaluations, and tutoring conditions.

We understand that our organization's responsibilities include access to records of AEP students, access to the tutoring center and participation of the AEP Coordinator. We reserve the right to withdraw from the study at any time if our circumstances change.

I confirm that I am authorized to approve research in this setting.

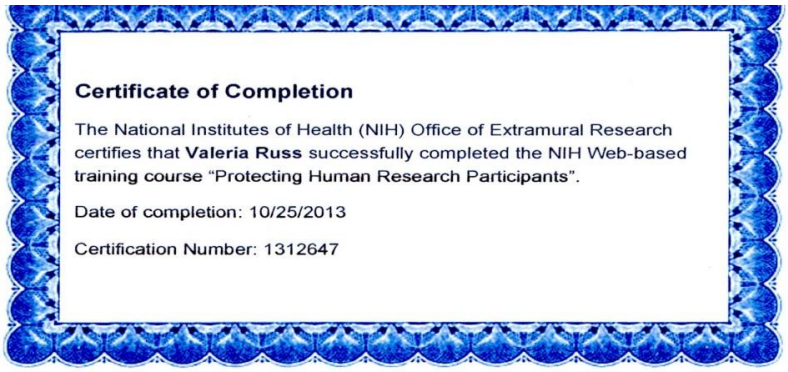
I understand that the data collected will remain entirely confidential and no identifying information such as names and/or addresses will be used in gathering this information and may not be provided to anyone outside of the research team without permission from the Walden University IRB.

Sincerely,

Delmas S. Crisp

Delmas S. Crisp
Vice President for Academic Affairs
Dean of the University

Appendix F: Certificate of Completion



Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Valeria Russ** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 10/25/2013

Certification Number: 1312647

Curriculum Vitae

Valeria A. Russ

Career objective: Academic position focusing on student instruction.

EDUCATION

(ABD) *DOCTOR OF PHILOSOPHY*, Psychology, 2013
Walden University, Minneapolis, MN. GPA 3.50 of 4.0
Major Field: Educational Psychology
Dissertation Title: A comparative study of tutoring effectiveness among at-risk college students. Advisor: Dr. Thomas Trocchio

MASTER OF ARTS, Counseling, October, 2003
Webster University, St. Louis MO. GPA 3.390 of 4.0
Major Field: Professional Counseling
Master's Thesis: Abuse Among the Disabled

BACHELOR OF ARTS, History, December 1998
Fayetteville State University, Fayetteville, NC. GPA 3.260 of 4.0
cum laude

RELEVANT GRADUATE LEVEL COURSES

Statistics I & II
Educational Psychology
Biopsychology
Ethics and Standards of Professional Practice
Cognitive Psychology
Marriages and Families
Social and Cultural Foundations
Human Growth and Development
Theories/Personalities

REVELANT COURSES TAUGHT AT COLLEGE LEVEL

Marriages and Families
Interdisciplinary Study Skills
Human Sexuality
Methodist Freshman Seminar
Applied Psychology
Life Span Developmental Psychology
Theories of Personality
Human Growth and Development
General Psychology
Death and Dying
Social Problems
Interpersonal Psychology
Abnormal Psychology

EXPERIENCE IN EDUCATIONAL SETTINGS

For all the following classes, the responsibilities included:

- Researched, prepared and presented class lectures to meet existing curriculum specifications.
- Wrote, administered and graded tests.
- Worked with students individually and in groups to enhance understanding and study skills.
- Prepared and presented class lectures, assignments, and tests in online classrooms to meet curriculum specifications.
- Taught hybrid courses in psychology using both face to face instruction as well as online instruction

Marriages and Families

Methodist University, Fayetteville, NC. Junior level class in Sociology

- Began with the philosophy and history of family
- Discussed the impact of family on the concept of self
- Discussed the concept of dysfunctional family interactions and impact on children
- Discussed case studies and the evolving tools available for families
- Discussed how families are formed, and how they break

Human Sexuality

Methodist University, Fayetteville, NC. Junior level class in Sociology

- Discussed the historical issues relating to human sexuality
- Discussed the legal and ethical issues relating to human sexuality
- Discussed heterosexual and homosexual patterns of sexual expression
- Discussed gender roles
- Discussed sexual dysfunctions and therapy
- Discussed laws and norms regulating sexual expression

Death and Dying

Methodist University, Fayetteville, NC. Junior level class in Sociology

- Discussed the personal and societal reactions to death
- Discussed personal and societal reactions to euthanasia and suicide

- Discussed the dying individual in relation to self, family and care providing
- Discussed the theories in regards to death and the dying process

Social Problems

Methodist University, Fayetteville, NC. Junior level class in Sociology

- Discussed the social disorganization and choices that affect the individual
- Discussed value conflicts and choices as they affect selected social institutions
- Discussed personal deviation that affect individual and social institutions

Interdisciplinary Study Skills

Methodist University, Fayetteville, NC. Freshman level class

- Discussed personal values as they pertain to ethical dilemmas
- Discussed way to identify, examine and evaluate learning styles
- Discussed and engaged in useful academic campus resources
- Discussed ways to enhance listening skills in such a manner as to enhance performance of written and oral communication
- Discussed ways to analyze, synthesize and utilize interpersonal communication skills
- Discussed ways to develop more effective study skills by learning how to recall information, manage time, read a text, take effective notes, listen with comprehension, prepare for and take tests, and manage stress.

Human Development

Fayetteville Technical Community College, Fayetteville, NC

- Discussed research methodology associated with the study of human development
- Discussed the physical, cognitive, and psychosocial development from conception through adolescence.
- Discussed the different stages of childhood in chronological order
- Discussed the theories associated with biological and environmental factors, language development, learning and cognitive process, social relations, and moral development
- Discussed the myths and realities of aging

General Psychology

Fayetteville Technical Community College, Fayetteville, NC

Robeson Community College, Lumberton, NC
Bladen Community College, Dublin, NC

- Discussed the history and methodology of psychology
- Discussed the legal and ethical issues relating to research
- Discussed the overall scientific study of human behavior
- Discussed sensation, perception, learning and abnormal behavior
- Discussed personality theory, social psychology and cognition

Applied Psychology

Fayetteville Technical Community College, Fayetteville, NC

- Discussed the history and methodology of psychology
- Discussed the basic principles of psychology as they apply to daily life
- Discussed behavior management, communication, and other topics to promote growth and development on the job

Interpersonal Psychology

Bladen Community College, Dublin, NC

- Discussed the nature and importance of human relations and understand how studying human relations will help you.
- Discussed the timeline and development of the human relations movement, plus the major concepts in human relations today.
- Discussed the major factors influencing job performance and behavior.
- Discussed the importance of self-confidence and self-efficacy and pinpoint methods of enhancing and developing your self-confidence.

Life Span Development Psychology

Bladen Community College, Dublin, NC

- Discussed the major developmental milestones of physical growth throughout the lifespan;
- Discussed the cognitive changes that take place throughout the lifespan; and the major theories of personality development;
- Discussed the development of emotional and social relationships across the lifespan

RELATED EXPERIENCE

Methodist University, Fayetteville, NC

- Supervise and manage the tutoring program at Methodist University
- Hire professional and peer tutors
- Maintain records of tutoring center daily operations
- Conduct workshops and training for tutors and tutoring program
- Coordinate and Supervise the Academic Enrichment Program for students who are academically at-risk to ensure they have opportunity for academic success
- Serve as Academic Advisor to Methodist University students
- Supervise the testing center
- Order, maintain, distribute Major Field Test
- Administer test through the services of Educational Testing Services (ETS)
- Ensure that distribution for proctored exams are in place; responsible for returning exams to parent schools
- Ensure proper documentation of all work and test is recorded

POSITIONS HELD

Psychology Instructor
Fayetteville Technical Community College
Social Sciences and Humanities
January 2010 – Present
Contact: Anne Greene, Program Coordinator, 910-678-8588

Psychology Instructor
Robeson Community College
Social Sciences and Humanities
August 2010-Present
Contact: Toni Sacry, Department Chair, 910-273-3375

Psychology Instructor
Bladen Community College
Social Sciences and Humanities
January 2011-2012
Contact: Joyce Bahhouth, Department Chair, 910-879-5542

Academic Services Associate
Methodist University
Academic Affairs
June 2006 – May 2009
Contact: Jane Gardiner, Assistant Vice President Academic Affairs, 910-630-7158

Adjunct Professor
Methodist University
Department of Arts and Humanities
June 2006 – May 2009
Contact: Marilyn Vital, Department Chair Sociology, 910-366-9787

Adult High School Instructor
Robeson Community College
Continuing Education
August 2004 – June 2006
Contact: Vickie Tate, Vice President of Continuing Education, 910-738-7101

Vocational Evaluator II
Department of Vocational Rehabilitation Services
March 2004 – June 2006
Contact: Sandra Britt, Office Manager, 910-618-5513

Employment Consultant I
North Carolina Employment Security Commission
July 1999 – March 2004
Contact: Leon Perry, Placement Supervisor, 910-592-5756

PROFESSIONAL AFFILIATIONS

Member, National Academic Advising Association, Methodist University, 2006/2007
Member, College of Reading and Learning, Methodist University, 2006/2007
Member, National Tutoring Association, Methodist University, 2006
Member, National Counseling Association, Webster University, 2002/2012
Member, American Psychological Association, Fayetteville Technical Community College, 2011

SUMMARY OF SPECIAL SKILLS

SPSS Microsoft Word WordPerfect Microsoft PowerPoint
Blackboard Campus Cruiser Microsoft Excel Moodle