

A PROGRAM EVALUATION OF A CROSS-AGE
TUTORIAL PROGRAM

by

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A DISSERTATION

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ABSTRACT

The purpose of this study was to evaluate the Freshman Academy, a cross-age tutorial program, at Pinewood High School in Georgia, via a program evaluation. One-hundred different students from Pinewood High School's fall 2007 ninth grade class were randomly selected to participate in the study. Students were given questionnaires, which were analyzed to understand how, if at all, students benefit from tutoring and what attitudes exist among those groups who attend. Results indicate responses amongst different participants vary little.

Specifically this study sought to understand, from a students' perspective, why students, regardless of their ethnicity group or gender group, chose not to attend a free cross-age tutorial program. The study also sought to find out what were the commonalities of those who chose to attend and what were thoughts of those who designed the Freshman Academy cross-age tutorial program. The results of the program evaluation included surveys, charts and interviews, which were compared with research literature.

This evaluation showed that the Freshman Academy does not always follow suggested research and little significant differences existed among ethnic and gender groups who did or did not choose to attend. Exploring differences of attendees and potential attendees is a good idea; however, more research needs to be done on the specific attitudes of those who attended and those who chose not to attend.

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CHAPTER I

INTRODUCTION

Students can be helped personally and academically by working with each other (Gausted, 1992; Patterson & Elliott, 2006). Tutoring is an excellent way to give students a sense of belonging in their school by allowing them to have a stake in shaping the future of others (Damon & Phelps 1989; Flaxman, 1988; Gausted, 1993; Warner, 1991). The concept of tutoring has been around for centuries. Tutoring occurs when one individual helps another individual gain knowledge in a particular area (Cloward, 1967; Damon & Phelps 1989; Flaxman, 1988; Gausted, 1993; Johnson & Johnson, 1992; Patterson & Elliott, 2006; Warner, 1991). This understanding comes from some person who knows more about the topic in discussion. It comes from someone who is committed to helping students achieve academic success.

Tutoring can take place in many ways and in several forms (Warner, 1991). Tutoring can take place after school, in school, outside of school, and by someone other than the teacher. When someone other than the teacher is the tutor, a common model is cross-age tutoring. Cross-age tutoring is the method whereby a peer of higher grade status tutors someone of younger grade status (Damon & Phelps, 1989; Gausted, 1993; Patterson & Elliott, 2006). Pinewood High School (in order to preserve anonymity, this is a pseudonym of a Southern state high school) utilizes the cross-age tutoring method with its Freshman Academy.

The Freshman Academy is the brainchild of two assistant administrators at Pinewood High School who, for purposes of anonymity, will be known as the program founders. In 2003, they attended an administrative conference that showed a presentation about tutoring ninth

graders. As a result of that conference, the founders decided to implement an “academy” that would target those at risk for failure. The Freshman Academy is offered Monday-Thursday after school.

Pinewood High School

Pinewood High School first opened its doors in 1981. It is located in Southern Georgia. The Pinewood community is a strong and vital one, made up of citizens who see the importance of education and family life. Pinewood High and its cluster schools are often at the center of activities for this community. In turn, the community has provided strong support for all school programs. Pinewood is a school that values excellence in academics and extracurricular activities.

Pinewood’s record in student achievement is outstanding with standardized test scores that consistently rank near the top of metro Atlanta schools. Pinewood’s students go to college at the rate of 85% on average per year. Pinewood had a 2007 Standard Aptitude Test score average of 1629, which is number one in the county. Pinewood’s athletic program has set the standard for its County within Southern Georgia. Pinewood’s strong parental and community support has provided Pinewood with some of the best athletic facilities in the state. Other extracurricular and co-curricular programs are equally strong.

Pinewood has award-winning programs in fine arts, performing arts, debate, broadcasting, and journalism. Pinewood has been named as a National School of Excellence, recipient of the Governor’s gold medal for academic achievement, and was named by Newsweek Magazine as one of the nation’s best schools.

These honors have been based on documented academic achievement. Through the years, Pinewood has received many honors for academic excellence and has launched professionals toward the fields of academics, fine arts, and athletics. Our academic and sports teams routinely compete for their respective championships. As accountability in education increases nationally, Pinewood remains steadfast in its mission to provide an excellent education and prepare students for the 21st century.

With the population at Pinewood becoming more diverse and with minorities historically scoring lower on standardized tests (Fine, 1991; House & Wohlt, 1991; Rumberger & Thomas, 2000), it is important that Pinewood offer a tutoring program for all students. In 1997, the ethnic make-up of Pinewood was 85% White, 6% Black, 5% Asian, 3% Hispanic, and >1% Multiracial/Native American. Today it is 67% White, 13% Black, 10% Asian, 9% Hispanic, and 1% Multiracial/Native American. Free and reduced lunch is up from 3% in 1997 to 10% at the time of this study. According to No Child Left Behind, free and reduced lunch is a subgroup indicator of those needing remediation.

Statement of Problem

With No Child Left Behind, schools are being held accountable to make Annual Yearly Progress. The federal government is asking local schools to do all they can to make certain graduation is an option for all. Faculty members at Pinewood High School believe that if they can offer a tutorial program it can avoid the “failing” school or “needs improvement” list. With more than 3,500, students, Pinewood is one of the largest schools in the state of Georgia. At the start of the fall semester 2007, the freshman class was 870 students. With such a large class, Pinewood can potentially have many tutees.

Freshman year is a pivotal transition year where many students seem to have a problem adjusting to their new existence (Gaustad, 1993). Making the change from middle school to high school can be a very stressful one; therefore, many ninth graders can be vulnerable to struggling academically. The Freshman Academy is designed to assist those under pressure to adapt to their surroundings and academic workload. Attending the Freshman Academy is voluntary; however, identifying those ninth graders who are most susceptible to change can prevent attrition (Greenwood, 1988).

Study Purpose

The purpose of this dissertation was to conduct a program evaluation on the Freshman Academy program at Pinewood High School in Southern Georgia, specifically focusing on its process and outcomes. The goal of this dissertation was to serve as a model and to provide information for other school districts that may wish to replicate and/or emulate Pinewood's program as they see fit. It sought to understand differences among students who attended and chose not to attend, why some invitees chose not to attend, attitudes of students of different ethnicities and genders of those who did attend a free cross-age tutorial program. It also sought to understand the best predictors of successfully passing a respective class when attending a cross-age tutorial program. This study explored a cross-age tutorial program by way of a process and outcomes evaluation. This study's design encompassed an evaluation of those who attend and do not attend Pinewood's Freshman Academy in fall 2007. Exploring several facets of the program ensured the evaluation of the program as a whole.

Research Questions

The importance of this tutorial program goes beyond NCLB. The significance of the evaluation was twofold. It was to show whether or not differences existed between the attitudes of those who attended. Also, it was to show that those who attended did better in their respective class, regardless of race or gender. My evaluation of the Freshman Academy program turned on the following research questions:

Process Evaluation Questions: Indicator 1

1: What are the demographic differences among the total ninth grade class students as it pertains to those students invited and those who actually attended the Freshman Academy? =

Indicator 2

2: Why did some invitees not attend?

Outcomes Evaluations Questions: Indicator 1

3: What are the best predictors of successfully passing a class?

Indicator 2

4: Are there differences in attitudes towards the tutorial program between White and Black students and between boys and girls?

Some students have much going on (jobs, sports), and they will choose not to participate (Bernard, 1990; Cloward, 1967; Gausted, 1993). Schools have the task of helping children to be educated in math and science but also to become contributing members of society. Tutoring is

more than just something offered to help catch a student up with work. It offers that student a peer connection they might not get at home (Bernard, 1990). Having that available can have a lasting impact on the student.

Overview of Program Procedures

Pinewood High School has a complex process to offer a student tutoring from their peers. At the 3-week mark of the first semester, a query is submitted by the administration to identify those students who are failing math or biology class as determined by their having a 70 or below average.

At this time, a grade report is generated for these students who are then called into the administrator's office. This report has their grades outlined on a single sheet for the student to see. At this time students are told of the tutorial program (Cohen & Kulik, 1982; Damon & Phelps, 1989; Gausted, 1993). Students are told a cross-age tutoring program will begin at the 6-week mark and if they still have a 70 or below they will be invited to attend.

At the 6th week, parents/guardians of those students with a grade of 70 or below are contacted by the school. Parents/guardians are notified of their child's grade and more importantly that they have the opportunity to attend an after-school cross-age tutoring program entitled the Freshman Academy. The parents/guardians are told the fundamentals of the program: its hours, days, requirements, and their child's grades. After the parents/guardians are notified, the following week the students are again called into the administrator's office in groups of 10, even if they were there during the third week. This is done to ensure efficiency. Communication to a collection of students is more time efficient than communicating with them one at a time. They are given the same information as their parents/guardians. Individual grades are not

revealed. Parents/guardians receive a progress report complete with their children's grades. This is generated by the individual teacher and a parent/guardian signature is needed as teachers need documented proof that grades have been shown to parents. Ideally, teachers would contact a parent if a student is habitually doing poorly. Nevertheless, this ensures contact by the school to a parent/guardian.

Parents/guardians are encouraged to have their child attend as often as possible. This same procedure is followed at the 9th (administrators), 12th, (signed progress report), and 15th (administration) week. Pinewood High School makes every effort to keep the parent/guardian informed through emails, letters going home (via the student and post office), phone calls, and open houses.

Math tutoring is offered on Monday and Wednesday and Biology is offered on Tuesday and Thursday. Cross-age tutoring is not offered for any other classes or electives. Due to budget constraints, tutoring is offered only in these two subjects. Each day the free tutoring is offered after school from 2:30-4:00. The student does not need an appointment or invitation as all are welcome. The only requirement is they bring something they need help with and/or something to work on. At least one teacher and several upperclassmen are there as tutors.

Depending on the size of the session, tutoring takes place individually or in groups. Students are welcome to come and go as often as they choose. When they enter they must sign in and when they leave they must sign out.

To become a tutor certain procedures must take place. The selection and education of the tutors is just as important as the tutees' attendance (Berk & Rossi, 1990; Koskinen & Wilson, 1982). Tutors are recommended by their math and science teachers. Those recommended are

asked to participate in the cross-age tutoring program after school. Teachers are paid for their time; however, students are not.

Importance of the Study

Volumes of books and articles have been written on the benefits of tutoring and the possible differences in the tutoring needs between minorities and their Anglo peers (Cokley, 2003; Hedin, 1987; Ogbu, 2003; Rhymes, 2004; Rumberger & Thomas, 2000). Research has been conducted to investigate students' attitudes toward tutoring with regard to attitudes, attendance, ethnicity, gender, motivation, mentoring, and achievement. This study looked to further those research studies by investigating students' participation in a cross-age tutorial program via a program evaluation by utilizing Stufflebeam & Shinkfield (2007) process and outcomes model.

Research shows that peer or cross-age tutoring promotes gains in reading and comprehension skills (Clay, 1993; Cloward, 1967; Cohen & Kulik, 1982; Greenwood, 1991; Hattie, 2006; Topping, 1992). Most students who are offered and attend some type of tutoring demonstrate a good attitude towards their school (Byrd, 1990; Cohen & Kulik, 1982; Coopersmith, 1967; Nazzel, 2002). Pinewood personnel are doing their part to ensure freshman students establish that close relationship with their school by offering them services to start their high school career on track to graduate.

Last year the faculty members at Pinewood were directed to gear their annual professional goals towards the various subgroups as defined by The No Child Left Behind Act. Setting goals is an integral part in giving teachers and students a stake in the academic process. Although the goals focused on all students, specific attention was given to the subgroups. The

school's aim was to devise a series of objectives that focused on students who fell in the category of African American, Native American, Hispanics, Special Education, and/or Free and Reduced Lunch. Curriculum assessments and materials were not altered. Teachers were instructed to break down the pass/fail rate for the different groups. Focusing on the subgroups forced all teachers to see how every student from every background was performing. More minorities are prone to possible failure; therefore, more will require tutoring (Cokley, 2003; Hedin, 1987; House & Wohlt, 1991; Rumberger & Thomas, 2000). However, tutees are not selected based on ethnicity.

Given the design of this evaluation, its import is twofold. First, as an outcomes evaluation, the study adds to existing research on the important effects of tutorial programs. Second, as a process evaluation, it highlights strengths and weaknesses of the program design and processes, thus serving as both a model and caution for other districts seeking to implement similar programs.

Criteria for Participation in the Study

To be considered a tutee, one student must have attended at least one tutorial session. To be considered part of the untutored population, a student must have been offered tutoring yet chose not to attend. A minimum of four tutoring sessions would be ideal as using four would follow the Coca Cola Value Youth Program, which indicates that a minimum of four sessions was required to positively impact a student (Vaznaugh, 1995). However, using four tutoring sessions severely limited the population for this study because only 26 students attended at least four sessions. To be considered part of the untutored population, a student would have needed to be considered at risk throughout the fall 2007 semester and not have attended any sessions.

Therefore, the sample consisted of ninth grade students who had been invited and/or attended or chose not to attend the Freshman Academy at Pinewood High School during the fall 2007 semester. In fall 2007, 79 different students attended at least one tutorial session while over 400 different students chose not to attend for various reasons.

Participants in Study

One-hundred and seventy-nine students ($n \geq 179$) were solicited to be part of this quantitative methodology program evaluation. For one section of the process evaluation information was statistically extrapolated from the entire ninth grade population of 870 students. Another section within the process evaluation utilized those participants who were invited to the Freshman Academy, but chose not to attend. One-hundred participants were solicited and given a questionnaire seeking to understand why they chose not to attend a free cross-age tutorial session. The outcomes portion of my evaluation solicited 79 participants which represented the tutored population. Another section sought to find differences, if any, among gender and ethnicities of those participating in the Freshman Academy. This evaluation consisted of two parts: process evaluation which examined the interworking proceedings and outcomes evaluation which examined the results of the procedures.

Both indicators of my process and outcomes evaluation used information from data collected and charted (Merriman, 1998; Thomas, 2005; Yin, 2003) from all participating tutees. Specifically, each participant's ethnicity, gender, number of tutorial sessions invited to, tutorial sessions attended, and overall grade point average were charted. The purpose of the chart was to categorically organize information to be used for this study and to find what, if any, differences

existed from those students who participated in the fall 2007 cross-age tutorial program. The information was numerically coded to assure anonymity (Thomas, 2005).

Process Quantitative Evaluation Study

A process evaluation seeks to understand, formatively, proceedings within a program (Stufflebeam, 1971). There were two indicators in this portion of my study: differences among the total ninth grade class, as it pertained to those students invited to Freshman Academy and those who actually attended ($n = 79$) and why some invitees did not attend ($n = 50$). For the differences among the total ninth grade class my study utilized chi square (X^2) statistics to answer whether there is a disproportion in the following: ninth grade class (using ethnicity, gender and socioeconomic class by way of free and reduced lunch), those invited to (defined as a 70 or below) tutoring at some point throughout the fall 2007 semester and those who actually attended the Freshman Academy (at least one time).

The second indicator sought to understand what the thought process was of some invitees who choose not to attend. Open-ended questions were administered to students who qualified to attend, yet choose not to attend for various reasons. A domain analysis was utilized linking group responses. Their responses were presented contextually. This was done to potentially address barriers of the program by addressing the reasons of those who did not attend.

Outcomes of Quantitative Evaluation Study

An outcomes evaluation seeks to understand, sometimes via summative statistics, results within a program (Stufflebeam, 1971). There were two indicators in this portion of my study: best predictors of success and differences in attitudes towards the tutorial program between two

groups. For the best predictors of success (success is defined as passing the class) my study sought to find that no significant differences existed among those who passed their class.

Regression analysis was utilized. Dependant variables were a student's final grade in class at the end of fall 2007 semester and what a student's grade was at the 9th week which brought them to tutoring. Independent variables were a student's socioeconomic status (using free and reduced lunch as a proxy), number of times attended tutoring, gender and ethnicity. Data will indicate whether those who attend more did better, regardless of race or gender and whether significant differences exist among race and gender.

The second indicator in the outcomes portion of my study sought to understand if there are differences in attitudes towards the tutorial program between White and Black students and between boys and girls. My study made use of a Likert-type questionnaire of those who attended the cross-age tutorial program. The results that emerged were analyzed by utilizing a contingency table.

Assumptions

1. The participating students had opinions and beliefs similar to other high school students.
2. The curriculum was the same across each class. No difference existed among courses of study.

Limitations

1. The Freshman Academy was only for those students taking ninth grade classes.

2. This study was only being conducted at one school, Pinewood High School in Southern Georgia.
3. The population was limited by those families who moved into the Pinewood cluster; therefore, the demographics of the student were produced by the community.
4. Tutoring was offered only in math and science.
5. No set time existed as to how long tutees were required to stay; therefore, the population could be transient as students came and went.
6. This study assumes a general impact of tutoring is that it is beneficial to all who attend it, whether that is measurable or not.

Summary

Pinewood High School has designed and implemented a purposeful program to target students they believe are students at risk of failing a particular class. Its mission, by way of cross-age tutoring, is to see that ninth graders in core area classes who need extra assistance receive it. Getting students to attend the offered cross-age tutorial program will take time; however, this study will describe which areas of the Academy are working and/or need improvement. Quantitatively analyzing the Academy with a process and outcomes evaluation will allow future schools the opportunity to potentially emulate the findings of this study. Overall, this study sought to understand whether the cross-age tutorial program was proficient or not based upon outcomes which were a direct result of the processes which the Freshman Academy has in place.

CHAPTER II

REVIEW OF LITERATURE

Tutoring

Introduction

Since the existence of life, tutorial instruction has been taking place. Maybe this instruction was early humans reinforcing lessons about hunting for food or perhaps it was the early education of mankind in Ancient Greece. History does not say for sure how early cave drawings were interpreted, but Socrates unquestionably taught Plato and then Plato and his peers gathered to discuss the knowledge Socrates was trying to convey. The early Greeks emulated a type of tutorial program. Around the turn of the 19th century, in the United States, Joseph Lancaster and his Lancastrian style of teaching in Pennsylvania practiced another form of tutorial teaching. Thirty years later, Horace Mann in Massachusetts and John Dewey with his Laboratory schools in Chicago followed suit. Historians support the fact that tutoring in any form has been taking place for centuries. Whatever the timeframe, it has not been until the last 40 or so years that tutoring has been brought to the forefront of education by way of literature and research. Tutoring is when one participant educates another (Cloward, 1967; Damon & Phelps 1989; Flaxman, 1988; Gausted, 1993; Johnson & Johnson, 1992; Patterson & Elliott, 2006 Warner, 1991).

Different examples of tutoring can and do exist. Cross-age tutoring is when the tutor from the same school is older than the tutee (Gausted, 1993; Patterson & Elliott, 2006) Peer tutoring

peer review, peer assistance, or peer learning is when the tutor from the school teaches the tutee because they know more on a respective topic (Cloward, 1967; Damon & Phelps, 1989). Unlike cross-age tutoring, a peer can be someone of the same grade. Mentoring is when a tutor is from the community and the tutee is from the school (Flaxman, 1988). All participants learn from each other, whether they know it or not (Johnson & Johnson, 1992).

Today, several ways exist above and beyond the classroom to assist students in learning and comprehending. Mentoring and tutoring are two specific strategies. The focal point of this literature review will be on cross-age tutoring as well as an exploration of other purposeful methods of tutoring. References will be made to mentoring and its relationships to show how these strategies seek the same goal as cross-age tutoring: the education of youth.

Students often can and do make the best tutors. Students from the local school can and do make an excellent tutor (Damon & Phelps, 1989). Educators often forget that students are the stakeholders in learning and that they can empower them to participate and influence the quality and success of the learning process. Tutors can directly influence the way schools operate. Students indirectly mold the school and help create an environment that is a direct reflection of them, the tutor. This reflection suggests that schools can and do appreciate their service, which builds self-confidence in the tutor.

The literature below seeks to recognize the facts and the backbone behind tutoring programs, including its make-up, beliefs, and purpose. Exactly who profits from tutoring and does any one sector of society need tutoring more than others? The purpose of this literature review will be to examine relevant tutorial programs and their impact on schools and society as well as their success or failures.

Definition

A plethora of literature has been written explaining the concept of tutoring, its purpose, and the existing programs targeting students in need. The point of this chapter will be not only to explore the concepts behind tutoring programs but also to review programs that are currently present or were present at one point throughout the country.

Defining tutoring is often a challenge. Peer tutoring is not just about transmitting knowledge from the more able and experienced student to the less able one (Cloward, 1967; Damon & Phelps, 1989). Tutoring exists to encourage the student who is capable but is either resistant to learning or has missed valuable skills for one reason or another. 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 the novice (Damon & Phelps, 1989). Because the tutor is often a mirror image of the tutee, the tutee is often more receptive of instruction than if offered by an adult. Peer tutors can be seen as less intimidating than using teachers.

The definition of tutor has come under challenge seeing not all tutors are experts. Sometimes they can be assigned randomly and often through cross-age tutoring. Cross-age tutoring involves using a tutor that is older than the tutee (Gaustad, 1993). To supplement the many acknowledged definitions of cross-age tutoring, Gaustad (1993) adds the following:

Peer tutoring occurs when the tutor and the tutee are of the same age and in cross-age tutoring the tutor is usually older; therefore, peer can be used in the definition of both. To confuse people even more they both can be referred to as peer coaching, peer education, peer learning and remediation. (p. 1)

The Psychological Underpinning of Tutoring

A developmental model of tutoring is supported by theorists such as Jean Piaget and Lev Vygotsky. They both believed that individual knowledge is derived from social contexts;

therefore, learning first occurs within societal situations (Kalkowski, 1995; Vygotsky, 1978) These authors believe that learning takes place by being taught by those who know more than those who they are teaching. Cross-age tutoring is an example of a social situation where knowledge has the potential to be gained by older students teaching younger students. Vygotsky (1978) thought that tutoring fosters exchanges of information where children learn through cognition. He believed that when the tutee (and all children for that matter) can internalize and show what they have learned, then they have actually learned. This is when students become aware and can acknowledge their learning. Tutoring is probably one of the best programs to develop this type of scholastic gain.

Piaget took Vygotsky's theories a step further and said not only is information exchanged with the tutee, but it allows for the tutor to think about that information and test his/her understanding and comprehension (Kalkowski, 1995; Vygotsky, 1978). Furthermore, it allows for the tutee to take that knowledge and make it part of his/her cognition which, in turn, becomes a part of them. Also, by talking to the tutee a tutor rehearses what they know.

Allowing tutors to assume the role of teachers gives them a sense that they are indeed a teacher and, like a teacher, they want to make sure their student/tutee is learning. Role Theory suggests tutors mirror their teachers and accept this prestigious role by making their tutees competent in the area being taught (Allen, 1976). The role of a tutor is to link academic ability to achievement, to reinforce when a goal is accomplished, and to praise along the way. Tutors serve the school by assuming the duties of the teacher in what usually is a smaller less intimidating setting aimed at maximizing a student's potential. Often, students reject higher authority based on age and are more apt to relate and look for guidance/mentorship by someone with similar

interests. Role Theory also asserts that people conform to the expectations that they and others have for them in their role (Hedin, 1987).

Effects of Tutorial Programs on Tutees

What specific gains are made from cross-age tutoring? Those who tutor often gain a sense of respect and understanding for those they are tutoring. Tutors benefit by being needed by another person, and they sometimes gather wisdom well beyond the material being taught. They witness first-hand that they are a worthwhile human being (Bernard, 1990). The principal goal of tutoring is to allow for gains to be acquired in both the social and academic development of youth and with all those involved. It advances the ideals of creativity by fostering creativity among those working on both ends. The bottom line is that students can play a critical role in helping others accomplish something and concurrently help themselves.

Cross-age tutoring can have social, academic, and psychological benefits (Cloward, 1967; Cohen & Kulik, 1982). As one benefit, many studies show that those tutored gain academically (Cohen & Kulik, 1982). Reading and writing are just two areas in which tutees have shown a gain in subject grasp and comprehension (Cloward, 1967; Hattie, 2006). The idea that students can work together implies that the possibility exists that those who work together can challenge each other and promote higher order thinking as well as other areas of conceptual development like problem solving and memory (Johnson & Johnson, 1992).

Societal

Through peer relations children can learn friendship skills, cooperative skills, communication skills, and social skills (Benard, 1991; Johnson & Johnson, 1992). By tutors

showing some type of concern through the relationship, hopefully the tutees will not want to disappoint or let down their respective tutors through acts of bad behavior or wrongdoing.

Knowing a tutee will have to face his/her tutor in the near future can be enough to keep some focused on the task at hand, which is the acquiring of knowledge transmitted by the tutor.

Schools can help struggling students stay in school by at least offering some type of after-school tutoring by qualified teachers (Elbaum, Vaughn, Hughes, & Moody, 2000). Since schools only see students for a small portion of the day, it is of extreme importance that tutors model correct behavior in both the community and school knowing that tutors will have to see their tutee the following day or week. Surviving in society, arguably, can be more important than gaining knowledge in school because if a person is unsuccessful in society and in trouble with the law often the only education available will be one of an alternative nature.

Schools can and do provide a place for students to grow socially and develop intellectually, providing a school nourishes that type of atmosphere. Cross-age tutoring allows for students to learn how to achieve and think critically, all the while developing friendships (Bernard, 1990). Failure to show positive social and intellectual skills can be precursors to substance problems and delinquency (Bernard, 1990).

Within the community, cross-age tutoring allows for older students to serve as models for how to act outside the classroom. The message is to show young students the value of an education and have that value continue when the bells rings at the end of the day.

Self-Esteem

Not only does cross-age tutoring benefit students academically and socially, it can also exude a sense of individual respect. The support for these claims, however, is contradictory.

Literature shows that it has been debated whether or not self-esteem, as defined as attitudes about oneself, is raised as a result of cross-age tutoring. One's power, which is defined as respect towards others, competence, and virtue all raise one's self-esteem by way of cross-age tutoring (Coopersmith, 1967). However, cross-age tutoring research has shown little, if any, gains in self-esteem by the tutor or tutee (Cohen & Kulik, 1982; Warger, 1991).

Socioeconomic Status

Students who come from lower socioeconomic backgrounds are more prone to drop out (Astin, 1999). Therefore, they are more of a target for tutoring programs. A direct correlation exists between the amount of money a family makes and the probability of academic success of their child. Tutoring programs can hopefully help parents and students alike achieve that goal. Historically and statistically, minorities score lower on standardized tests (Rumberger & Thomas, 2000). Lower achieving students tend to make larger gains than those who are considered average students (Cohen & Kulik, 1982).

Importance of Tutoring

With tutoring, gains are not just made with comprehension of material. Those involved in tutoring have benefited with time management, classroom behavior, and retention rates (Utay & Utay, 1997). A person does not have to be the smartest to benefit from being a tutee. Frankly, those of less astute pedigrees can get just as much, if not more, from tutoring as the smart or higher-level class student. Tutoring programs, specifically cross-age tutoring, can and do benefit all with positive academic growth (Bernard, 1990).

Students who are in need of retention do not enter that category overnight (Astin, 1999). A series of low grades, little to no peer or teacher relationship, and constant behavior problems are attributes of student dropouts. The fact that it can take months and even years before young adults decide to leave the sanctuary of their educational walls suggests that teachers and administrators have an opportunity and an obligation to try to recognize these students and to intervene before it is too late. Tutoring offers potential dropouts the chance to be helped before it is too late.

The supervision team, the teachers, and the community face the daunting crisis of trying to keep students out of trouble and involved, hopefully giving them the opportunity to make it to graduation and eventually become more productive, contributing members of society with a variety of options. Tutoring can create that positive atmosphere and attitude where students want to pay more attention and be on time more (Greer & Polirstok, 1982).

When planning tutoring to help students' efficacy, those in charge of the tutoring should keep certain things in mind. First, tutors should make sure guidelines are set to insure a student's drive to succeed remains high through tutoring. Tutors should then talk to the tutees to see if they are on task and doing well. The purpose of this is for the tutee to assess one's self-worth and keep themselves motivated (Bandura & Locke, 2003).

Whether the tutee realizes it or not, the benefits of cross-age tutoring go beyond the student just learning the material. Academic skills are a given, but students acquire skills in classroom discipline; they develop socially, and peer relations are enhanced (Greenwood, 1988). Peer and cross-age research tutoring studies have shown tutees have benefited in their attitude toward subject matter and in achievement (Cohen & Kulik, 1982).

Motivation

A student at any level has to want to learn; however, what can slow or curb that desire is the motivation that drives one's capabilities. The question then becomes, what can the tutor do to motivate the tutee?

According to Biehler and Snowman (1993), motivation is defined as whatever forces a person to continue a behavior toward a desired objective. Usually that involves some type of reinforcement and a predetermined reward between the tutor and tutee. The tutee would be steered towards a particular behavior with constant reinforcement from the tutor. That conduct can take the form of comprehension of certain vocabulary words, command of a particular math formula, or grasp of particular philosophical theory. They have to want to succeed, intrinsically.

Examples of Cross-Age Tutoring Programs

Colbert Elementary in Spokane, Washington

A study was conducted by a local high school to measure students' understanding and ability to write short creative stories and to see if the understanding was enhanced by those tutors with whom they were paired (Ankcorn, 1999). High school students in an elective course were paired up with sixth graders from a local feeder elementary where they spent time studying the elements of short story writing. The tutors were given the stories in advance and the tutees were able to write drafts. The tutors gave feedback based on the drafts that were presented.

A pre- and post-short story test was given. Each question was scored on a three-point scale and the scores were put into a spreadsheet (Ankcorn, 1999). The questions focused on plot and characters (Ankcorn, 1999). The pretest had an average score of 59%, while the posttest had an average score of 75% (Ankcorn, 1999). A 16% average increase in the results of this study

indicates that the students had an understanding of elements of writing taught by a tutor. The results of this study give evidence that there was an increase in students' understanding and ability to use short story elements of plot and characterization after a cross-age tutoring experience.

Edvantia Educational Research Corporation

Cairo and Craig (2005) determined the extent to which cross-age tutoring in rural settings of Kentucky, Tennessee, Virginia, and West Virginia would produce similar results to those in urban areas. A repeated measures experimental design was utilized to gauge the effects of the tutoring on learning and the retention of knowledge of fraction manipulations. Groups were set up as follows: (1) tutors, (2) tutees, (3) non-tutors, and (4) non-tutees. Non-tutors and tutors were seventh and eighth grade students from an area school. Tutees and non-tutees were third and fourth grade students within the same rural school system.

The results showed no significant differences in retention of knowledge gained by those tutored from the aforementioned groups in rural or urban areas.

Ninth-Grade Reading Program

As ninth grade students struggle with reading they begin to develop a disdain for it (Paterson & Elliott, 2006). Paterson and Elliott took 29 ninth grade struggling readers who were involuntarily placed in a remedial education program at a Title I school in Atlanta, Georgia, and made them tutors. The ninth grade students tutored 32 struggling readers in a second and third grade feeder school. The study took place during a year-long remedial class and began 2 months after school started. Tutors were given instruction on how to implement specific reading

strategies. Eventually they were required to write their own lesson plans for the tutees (Paterson & Elliott, 2006).

A pre- and posttest used an accelerated reader test, which assesses a student's readability to grade level. Triangulation was used to assure trustworthiness, and the results showed the average score for a tutor went from a 6.3 in September to an 8.2 in May (Paterson & Elliott, 2006). Scores for the tutees were not evaluated. Because students lived in the same community and had similar academic struggles, tutors had a common understanding of what the tutees might have been perceived as, underachieving. This commonality and relationship building caused the high school students to reflect on their own potential and realize the ability to make a difference in their own academics.

Reading Together Program

This study measured the effectiveness of Reading Together, a cross-age tutoring program (Hattie, 2006). Hattie wanted to demonstrate that effective one-on-one cross-age tutoring is not convincing enough to be labeled as a flourishing tutoring program; it only increases the probability that effective learning can occur. Just because a cross-age tutoring program exists, it does not mean it will be successful.

Nevertheless, Hattie found that those tutees who participated in the Reading Program gained in reading levels compared to those of the control group. Participants in the experimental and control group were administered three different phases of tutoring. All students were given the same amount of cross-age tutoring time during the first and second phase. During the third phase, the experimental group was offered tutoring while the control group was not (Hattie, 2006).

The scores in the Sunshine Reading Fluency Test were nearly identical while both the experimental and control group received cross-age tutoring. During the first and second phase, the control group's average score was 8.65 and 15.4, respectively, while the experimental group's scores were 8.84 and 15.8 (Hattie, 2006). Both groups had a mean average difference of .15 (Hattie, 2006).

A Sunshine Reading Fluency Test was used as a pre- and posttest. In phase three, data show that tutees in the experimental group had a mean of 8.62 and a standard deviation of 2.86, while those in the control group had a mean of 7.88 and a standard deviation of 2.81 (Hattie, 2006). The improvements in the experimental group over the control group show that success can happen with cross-age tutoring.

New York Tests of Growth in Reading

Cloward (1967) evaluated a program that featured high school students tutoring low-achieving public elementary students in New York City. Cloward's study is fairly old, however, it address many of the same concerns and results that tutoring programs face today--is cross-age tutoring effective.

Tutoring took place once or twice a week from 3:00 to 5:00 pm. Each pupil was assigned a specific tutor for the duration of the cross-age tutoring, which lasted 8 months (Cloward, 1967). The tutors were trained for 2 weeks and told what their duties were and how to implement them. Cloward hypothesized that students would benefit from a cross-age experience.

The tutees were selected from a population of about 2,500 fourth and fifth grade students who were reading at or below level at the time (Cloward, 1967). The study was structured as an experiment with random assignment of tutees to experimental and control situations.

Experimental tutees were given cross-age tutorial assistance either once or twice or week, while the control group of tutees received no cross-age tutoring services. The control group just talked to the tutors and played games. Results were supplied by a pre- and posttest.

Tutees' reading achievement was measured using the New York State Growth in Reading test. During the pretest, the average score for the experimental group was 22.81, while the control group was 21.35 (Cloward, 1967). After the posttest, the average experimental group was 27.66, a +4.85 mean change, and the control group was 25.31, a +3.96 change. The results were not significant; however, those who received the cross-age tutoring showed a benefit may exist.

Reading Disabilities

Students of special needs can be positively impacted by cross-age tutoring (Utay & Utay, 1997). For the purpose of this study, special needs are defined as those with deficits in writing expression and handwriting as compared with those without disabilities. Utay and Utay looked to improve writing skills of second through sixth grade students at a private school in Dallas, Texas. The sample population consisted of 72 students with 38 in the treatment group and 34 in the control group.

Each student was given a pre- and posttest using the WJ-R Written Expression Cluster. Initially all students were taught writing and basic computer skills by a teacher. At a certain point in the lesson, those in the treatment group were cross-age tutored by students who were at least two grades ahead. The control group did not utilize any form of cross-age tutoring for instruction. Utay and Utay (1997) postulated whether those learning disability students who received cross-age tutoring would score higher than those in the control group on the WJ-R Written Expression Cluster.

After 12 weeks all students were promptly given another WJ-R Written Expression Cluster--Form B. The mean score for those in the treatment group was 98.974, while those in the control group had a mean score of 99.333 (Utay & Utay, 1997). Utay and Utay attribute a lack of statistical difference to the fact that they possibly chose students whose disabilities were too severe or that more than 12 weeks was needed in order for significant change to take place.

Meta-Analysis of Cross-Age Tutoring Programs

In 1982, Cohen et al. did a meta-analysis of 65 school-based tutoring programs and their outcomes. Here they combined the results of several studies then analyzed the results to depict a more accurate analysis of school based tutorial programs. Those studies to be included in the analysis had to take place in elementary or secondary school classrooms and had to report on quantitatively measured outcomes in both a tutored group and a non-tutored group.

Cohen et al.'s (1982) study looked specifically at over 6,000 students in math and language arts tutoring programs in Grades 4-12 all over the United States. Facilitating teachers were asked specifically their opinion on whether the outcomes acquired by the tutees were positive. Positive was not clearly defined; however, a majority responded that effective outcomes were produced and the students gained knowledge and attitudes geared toward academics improved.

The characteristics of the 65 studies were of many different types: structured or non-structured, whether the tutoring was cross-age or not, whether the tutoring was to substitute for classroom instruction, and whether or not the tutor received training (Cohen et al., 1982). Duration of the program, class level of tutors and tutees, subject level, and level of skills tested on exams were some variables described (Cohen et al., 1982).

The 65 studies described effects of the tutoring programs on the tutors and tutees. Self-concept, student achievement on exams, and student attitudes toward the subject matter were the major areas affected (Cohen et al., 1982). Self-concept is defined as how one feels about being a tutor or tutee. To quantify the effect size of tutoring programs, the difference between the means of the two groups was divided by the standard deviation of the control group.

Self-Concept and Effects on Tutees

Nine studies reported on effects of tutoring programs on tutee self-concept. Seven report that self-concept was more favorable for students in classrooms with a tutoring program, while in the other two self-concept was more favorable in the classroom setting without the tutoring program (Cohen et al., 1982). Results were too small to be considered statistically reliable.

Achievement and Effects on Tutees

Effect size in the 52 achievement studies was .40 with an error of .069 (Cohen et al., 1982). The average child who was in the tutored group scored at the 66th percentile of the students in the control group, or approximately two-fifths of a standard deviation. Further examination showed that studies with certain features consistently produced strong effects. Gains were larger in more structured programs and shorter in duration. Also, effects were larger on locally developed tests and smaller on nationally standardized tests.

Attitude toward Subject Matter and Effects on Tutees

Eight studies on subject matter reported that student attitudes were more positive in classrooms with tutoring programs; however, only one reported a large enough effect size to be

considered statistically reliable (Cohen et al., 1982). The average effect size was .29 with a standard error of .08. Results were small yet consistent enough to conclude that tutoring programs had a positive effect on students' attitudes toward subject matter being taught.

Self-Concept and Effects on Tutors

Sixteen studies reported on effects of tutoring programs on self-concepts of students who served as tutors (Cohen et al., 1982). In 12 of the studies, the self-concept was higher for tutors than for those who did not serve as tutors, while in the remaining 4 studies, self-concept was higher for those who did not serve as tutors. The average effect on tutor self-concept was small.

Achievement Effects on Student Tutors

Of the 65 studies, 38 examined achievement effects on tutors (Cohen et al., 1982). Of the 38 studies that examined achievement effects on tutors, 33 show those students who served as tutors performed better than control group students on examinations in the subject being taught, while the remaining 5 examinations were better for those not serving as tutors. Of the 38 studies, 10 reported statistically significant results and in each case the difference favored those tutoring.

Attitude towards Subject Matter and Effect on Tutors

In four of the five studies, attitudes were positive among those serving as tutors. Only one study showed a statistically significant difference in subject matter attitudes of tutors (Cohen et al., 1982).

Overall

This meta-analysis study was conducted by observing groups of people where half were part of an untutored control group and the other half were not. More than two-thirds of those that offered the cross-age tutoring program academically outperformed those who did not (Cohen et al., 1982). Gains of not just academic performance but attitude were attained by those who were tutored, as opposed to those who were not.

Effective Tutorial Programs

In order to ensure the success of tutoring programs, potential problems must be addressed. Some possible problems might include the intentions of the program's overseer, the length of the program, and the determination of success of all students involved. The possible problems are plentiful. How the program and its directors handle these problems has a profound effect on the program's success.

Problems

Just because two students are working together, that does not ensure student success. Tutors need to have some type of training and be able to communicate with the tutee. Tutors need to have some type of knowledge of the material being taught (Cohen & Kulik, 1982). A tutor does not necessarily need to be an excellent student. A sixth grader operating at a fourth grade level can be an excellent helper of a second grader who is also operating below grade level (Lippitt, 1976). One problem is the stigma created by the process in general. Those who are being tutored are seen as less capable and can show resistance before they even get to know the tutor. Time can be a challenge with cross-age tutoring because it requires coordinating the

schedules of two sets of students. Offering tutoring as a credited class gives tutors expected meeting time.

Who is Running It?

The only way to have an effective cross-age tutoring program is to have structured, competent people involved in the process. A working program is only as good as the program director. Execution of the program is the most important key to striving toward a working program (Koskinen & Wilson, 1982), and some of their responsibilities and roles are as follows: (1) selection of tutors and tutees, (2) training, and (e) keeping track of attendance. The program director should be around as often as possible to supervise as well as be someone who can answer questions. At the same time, the director should allow the tutor to do his/her job and not pressure them with their presence (Cohen & Kulik, 1982). The director, from a distance, can make sure that both the tutor and tutee remain on task (Warger, 1991). Keeping all involved, focused, and moving toward an effective program should be a goal of all program directors.

Not only do those in charge need to be assertive and constantly reviewing the program, those who are hired must also be. A coordinator is only as good as those who are used to help. A tutor must be trained and told what tasks need to be prepared and how to go about acquiring them (Koskinen & Wilson, 1982). The tutors must realize and be able to conceptualize their significant contribution and role to the tutoring of the youth. To help make sure the tutees attain a positive tutoring experience, tutors must take their role seriously (Cohen & Kulik, 1982).

Time of Program

Tutoring programs vary in degree of time and length. Those who received around 4 hours of tutoring each week for roughly 8 weeks showed encouraging results (Berk & Rossi, 1990; Cloward, 1967; Vaznaugh, 1995). The program director would need to specify a targeted start and end date to ensure possible completion of desired goals. Ideally, tutoring would take place throughout the day as some students are not available in the morning and/or after school (Topping, 1988). If that is not possible, the school should try to offer it twice--before and after school. Short structured tutoring programs can and do produce results. Extending a program does not always benefit the tutors or tutees. Short programs with specific timed goals can be an effective way to tutor.

Education of Tutors

Tutors need to be trained to make sure they know what their roles and responsibilities are. The mere fact that they are asked to participate should signify that they possess some type of skill that the director felt could be used to teach others. However, no matter how much they know and what they bring to the table they still need to be taught to instill a sense of mental confidence (Koskinen & Wilson, 1982). Their education is just as important as those they are teaching. The tutors must be taught to be patient, to give encouraging feedback, and to give support when needed. The tutors then take these skills and share them with those whom they are tutoring (Cohen & Kulik, 1982). Also, the tutor should be able to check his/her own comprehension of material.

Many tutoring programs only acknowledge that the tutors were trained. Polirstok and Greer (1986) conducted a study where they looked at tutors and their strengthening of a tutee

behavior. After going through some type of training process, they found that those who were trained to give positive or negative reinforcement were better at the tutoring process.

Gender Make-Up

A difference does exist in the male/female make-up of the tutor/tutee relationship. Research supports the fact that females relate better to females and vice versa for males when it comes to results of tutoring programs (Topping & Whiteley, 1993). Topping and Whiteley (1993) looked at over 10 tutoring programs and concluded that those who were paired with the same sex tutor had better gains than those who were paired with the opposite sex. Rohrbeck (2003) concurred with Topping and Whiteley (1993) that same sex partners gained more than those of the opposite sex. Not only does it help academically, assignment by gender avoids stereotypes that males might be stronger in certain subjects and females in others.

In a subsequent section, the connection between ethnicity and its connection to tutoring is discussed. Little to no data exists to say whether females of the same ethnicity have an impact on tutoring. Maxwell (1991) did agree with Rohrbeck (2003) and the fact that tutors with the same ethnicity can be beneficial; however, no combination of gender and ethnicity proved gains for the tutee. Rohrbeck's meta-analysis concluded that of the 44% who reported ethnicity of the tutors, less than half were female. That being said, tutoring by females of ethnicity to other like females of ethnicity offered no significant benefit.

Meta-Analysis of Tutorial Programs

Rohrbeck (2003) conducted a meta-analysis study of 90 peer learning programs to try and evaluate interventions in elementary school children through group comparison design studies.

Peer assisted interventions aim to enhance learning, motivation, and, consequently, achievement. To achieve the aforementioned, a meta-analytic review was conducted to see if those schools conducting the interventions had certain parameters. The study focused on the following factors: demographic features, peer intervention parameters, did the learning program have up-to-date hypotheses derived from theory, and/or possess real life, natural ecological validity.

Effect size was computed for all academic outcomes variables in each study for which adequate quantitative data were available (Rohrbeck, 2003). Most studies reported outcomes at several points in time, so the effect size was calculated at the end of the tutoring. More often than not, that was the posttest.

A profile was created examining the demographic characteristics of the students and schools, intervention parameters, theoretically derived interventions components, and factors related to ecological validity (Rohrbeck, 2003). Next the tutoring programs' overall effectiveness was examined.

Of the 90 schools participating, 84% reported that the tutors were slightly older than the tutees. The reported age of the tutors and tutees were from 5.8 to 11.6 with 9.3 being an average (Rohrbeck, 2003). Those reporting demographics showed a 1.4 year difference in age between tutor and tutee. Only 47 of the 90 reported gender comparisons, and on average 48% of those participating as either the tutor or tutee were female and 52% were male. Fifty-six percent of the studies did not report on the racial status of participants; however, 23% reported that minorities accounted for greater than 50% of the participants. Twenty-six percent of the studies reported that low socioeconomic status accounted for greater than 50% of the participants. Participating schools were located in different settings across the states. Twenty-nine percent ($n = 26$) of the

schools were located in urban setting, 21% ($n = 19$) in suburban setting, and 1% ($n = 1$) in multiple settings, whereas 49% ($n = 37$) did not report on the school setting.

Intervention Parameters

Forty-four percent of the studies paired the students in groups of 2, 48% placed the students with 3 to 6 participants, 6% of the studies used a combination of both, and 2% did not specify (Rohrbeck, 2003). Ability grouping was the most common arrangement of placing a tutor with a tutee, as 61% of studies did so. The duration of the intervention varied from time of program to length and number of tutoring sessions per week. The cross-age peer learning studies varied greatly in terms of these variables. Out of 90 studies, 58 reported an average of 55 hours and a median of 19 hours. This was calculated by multiplying duration x sessions per week x length of sessions.

Theoretically Driven Hypothesis

Seventy-nine percent of the interventions placed any and all students in the tutoring role, whereas 21% allowed for one student to be the tutor (Rohrbeck, 2003). External rewards were given to promote learning. Forty-seven percent provided rewards to those students who performed better on posttests, with 21% providing social rewards. Forty-one percent of those tutoring were provided some type of structure as a tutor, while 58% did not, with 1% receiving structured and unstructured opportunities for being a tutor. Cross-age tutoring programs can trace their foundations to a particular theory or professional learning group. Of those studies that acknowledge who developed its respective cross-age tutoring program, 80% of those studies

attribute their authorship to a university, while 6% claim school or district professionals, and none mentioned a specific theory.

Ecological Validity

Ecological validity seeks to generalize results to the real world. Sixty-eight percent of the peer tutoring mentioned nothing about the integrity with which their program was carried out (Rohrbeck, 2003). Without acknowledging truthfulness, those who review a tutorial program are left to wonder about its reliability and validity.

Overall

Rohrbeck (2003) reported that on average, those programs that were set in urban schools (as opposed to the suburbs) had greater gains in academic achievement because of their cross-age tutoring programs. Also, this meta-analysis concluded that those programs whose members had a lower socioeconomic status had greater gains than those from their wealthy counterparts.

In summation, research supports the fact that students do learn while being tutored from other students. That being said, schools still short of being effective because they lack theory, rely too much on opinion rather than empirical studies, and fail to examine ecological validity.

Mentoring Programs

Mentoring and tutoring are similar, even an extension of each other. Tutoring is an effective way to keep a student in school and focused on education. Being a tutor allows for a tutee to see someone as more than just somebody who is trying to get a tutee to acquire knowledge. Whether the tutor/tutee realizes it, their communicating can open the door to allow

for some for some type of mentorship above and beyond the classroom. Mentoring serves a need schools cannot always address: how to continue tutoring students outside the classroom.

With time constraints and extracurricular activities not all students can accept the tutoring offered by schools. Students who need tutoring can find help in their community. A community tutoring program serves the same purpose as school tutoring programs do--that is to provide some exchange of learning and knowledge (Johnson & Johnson, 1992). Mentoring and tutoring seek the same expectation, to educate and keep students on track to graduate.

A variety of mentoring programs exist to improve academics. From church groups, to local community centers, to schools, mentoring program are in place to serve people. Mentoring programs are particularly effective at improving the overall well being of children and youth (Flaxman, 1988). To be effective, long-lasting relationships need to be established; however, that can pose a difficult challenge with time. Tutoring and mentoring programs offer that opportunity. This is especially true for those who lack a significant relationship at home like the one being established between the tutor and tutee. The purpose of mentoring programs is to improve a student's chance to obtain goals with the help of resources not always readily available from another person with knowledge in a particular area. The role of the mentor is to pass on knowledge, experience and judgment, and/or to provide guidance and support (Lund, 1992). The idea with mentoring programs is to have a person, usually not associated directly with a school, who is older than the person, but not too much removed from the mentee.

Ideally mentors should come from within the community. Partnering with an outside agency like a business, college, or a nonprofit organization is a possibility to find mentors. Making sure they are qualified is crucial. No matter the person or group, they have to be able to communicate with the youth.

Standards

Like the relationship of a tutor/tutee, to be an effective mentor requires a variety of skills, like the ability to listen, the ability to be fair yet firm, and the ability to provide guidance. No set background or life experience is needed but can be valuable as the mentee might be looking for someone they can relate to other than their parents. Personal bonds can be created where the mentor is able to learn from the mentee about their situation and what their experiences in life have brought them.

Students gain an understanding and value themselves, their relation to others, and how they are perceived more as a result of tutoring (Matthews & Kesner, 2003). Mentoring, like tutoring, allows for mentees to see themselves, see how their mentor sees them, and how they are accepted (or not) by their mentor. Mentors are usually found outside the classroom. This enables them to get a sense of how others outside of their immediate friends and family see them act and change if needed.

Problems

When designing mentoring programs it is crucial to outline what results are desired (Flaxman, 1988). The purpose of this is to avoid possible problems of incorrectly identifying students, making sure purposeful evaluation is taking place, and making sure the program is meeting the clients' needs. To make sure this is taking place, monitoring and evaluation need to be constant. According to Flaxman (1988), the following are critical to ensure mentoring success: (1) support for the leaders, (2) voluntary participation, (3) duration of program (not to exceed one year), (4) selection of mentors (careful selection process), (5) training for mentors,

and (6) monitoring of programs. Regardless of the above, all those involved must be committed to the program for it to have any chance of success.

Big Brothers/Big Sisters: Mentoring Program

Public and Private Ventures is an action-based research development company who studied the Big Brothers/Big Sisters mentoring program to decide whether it was effective in a number of areas (Teirney, 1995). Some questions they addressed were as follows: (1) What are the qualities of the mentors? (2) Are the programs well administrated? and (3) Were visible changes observed in those served? The population consisted of over 400 youth who were matched with a big brother or sister. Results were as follows:

1. The adult volunteers were well qualified and educated, with more than 50% of the mentors having some type of college education.

2. All volunteers were given an orientation in the program's requirements and rules as well as continuous training in relationship building and how to recognize abuse at home. The programs were very proactive.

3. Overall the findings were positive. Fewer youths were likely to use drugs, while the academic behaviors and attitudes changed as they showed modest gains in their grade point average. Teirney (1995) concluded that Big Brothers and Big Sisters take a carefully structured approach to their mentoring program in terms of development, maintenance, and quality of the big brother/sister matches.

At Risk

Today's youth face many more situations and dilemmas than in previous years. Schools, parents, and communities alike are concerned for the future of our youth. Between gangs, drugs, lack of a family structure, stress, alcohol, and crime many teens have plenty of tempting options to keep their focus out of the classroom.

Who is At Risk?

Those deemed at risk face several problems in today's society. One problem keeping at-risk students at risk is the lack of a quality education (Druian & Butler, 1987; Reddick & Peach, 1990). Students in poorer rural areas are deemed at higher risk for failure and dropping out than those students in wealthier dual parent homes (Reddick & Peach, 1990). Students characterized as at risk need to be told and shown that with help education is a viable option. Within schools, at-risk students have a greater chance of passing when they are targeted and tutored (Druian & Butler, 1987; Hedin, 1987; Reddick & Peach, 1990).

Teens answering "yes" to at least four of the following questions should be considered at risk (<http://www.at-risk.org/index.html>):

1. Has the teen ever been suspended, expelled, been truant, or had their grades drop?
2. Is the teen verbally abusive?
3. Does the teen struggle with basic family rules and expectations?
4. Does the parent have difficulty getting the teen to do basic household chores and homework?
5. Has the teen had problems with the law?
6. Does the parent have to pick their words carefully when speaking to the teen, so as not to elicit a verbal attack or even rage from them?
7. Is the teen in danger of dropping out of high school?
8. Does the teen associate with a suspect peer group?
9. Has the teen lost interest in former productive activities, sports, hobbies, or childhood friends?
10. Has the teen ever displayed any evidence of suicide?
11. Does the teen seem depressed/withdrawn?

12. Does the teen ever display violent behavior?
13. Is the teen sexually promiscuous?
14. Has the teen's appearance or personal hygiene changed?
15. Is the teen deceitful and manipulative?
16. Has the teen been caught stealing money or personal items from their family?
17. Is the teen severely lacking in motivation?
18. Does the teen sometimes lie regarding their activities?
19. Does the teen display outbursts of temper?
20. Does the teen lack self-worth and self-esteem?
21. Does the teen defy established rules regardless of the consequences?
22. When trying to deal with the teen, do the parents feel powerless?
23. Does the teen have a problem with authority?
24. Do the parents suspect the teen is experimenting with drugs or alcohol?

At-risk and Cross-age Tutoring

Cross-age tutoring has been shown to be one of the most cost effective and productive ways to keep students on track to graduate and to target those struggling in academics and those who are at risk (Hedin, 1987).

Are Minorities At Risk More Than Others?

According to the No Child Left Behind Act, schools need to target different subgroups to make sure no one group or individual is left behind. If students do not meet standardized national and state requirements, schools will be held accountable for repeat offenses and face such sanctions as loss of funding, accreditation, and labeled a failing school. Therefore, it is in a school's best interest to target all students who are failing, despite the fact that many may not fit the definition of an at-risk teen (Hedin, 1987). Schools should avoid treating these students as simply another case of remediation but continue to understand the true at-risk potential of the individual students. Nevertheless, all schools, no matter the racial or ethnic make-up, are worried about the benchmarks The No Child Left Behind Act has established. As populations shift, the

school must be aware of systematic differences in the test scores and academic achievement among different groups of students and the interventions needed to address such differences.

It is important to note that those students labeled at risk can serve as tutors and benefit just as much as their non at-risk colleagues (Hedin, 1987). Those students classified as higher achieving are usually looked upon to tutor based on grades. Students not classified as academically gifted can benefit from the responsibility and dependability expected from them.

Tracking Minorities

The idea of targeting minorities, specifically African Americans, can make them feel inferior (Ogbu, 2003). Being singled out solely on the basis of the color can make some feel substandard and could cause them to resist intervention programs. The fact that minorities are recognized through specific and individual ethnic selection might be perceived as negative. Statistically, minorities do not score as high on uniform tests and are more susceptible to dropping out and being tutored than other students (Rumberger & Thomas, 2000).

Do Minorities Need Tracking to Avoid Dropping Out?

The effectiveness of creating goals specific to diverse populations is not the most important factor. The fact that studies show that those who make up the subgroups are most likely tutored and most likely to drop out, warrants everyone's individual attention. Along with minorities being tutored, many minorities are leaving high school at an alarming rate (Ogbu, 2003; Rhymes, 2004). There are different theories that are the cause of this. Black students often do not want to "act White" (Ogbu, 2003) and curriculum often omits significant information about the history of Blacks (Rhymes, 2004).

Black students are not the only subgroup leaving schools at a disturbing rate. With current immigration and border issues, Hispanic students and their success in education is being brought to the forefront. Hispanic students face many of the same problems as Black students. They are just as susceptible to being tutored (House & Wohlt, 1991). Problems like the lack of parental involvement and little association in and connection with extracurricular activities are ongoing. These problems also affect many White students. Unlike Black students, though, Hispanic students face a challenge many people cannot understand, lack of language comprehension. Schools that are not diverse might have fewer teachers with language proficiency in Spanish. Placement of students with Hispanic heritage into mainstream classes proves to be a difficult challenge as they struggle with comprehension. With the Hispanic population growing every year at schools, United States schools must look not only to the county but to the state for tutoring assistance and guidance in order to make these students successful.

House and Wohlt (1991) did a cross-age tutoring study in college among Blacks, Hispanics, and Asian Americans. During this comparison of cross-age tutoring programs, those minority students who were tutored stayed longer in college than similar minority students who were not offered cross-age tutoring. Blacks and Hispanics showed statistically significant differences, while Asians showed gains, just not significant amounts.

Students are not fairly educated, especially in urban and low income areas, therefore education across county lines is not equal (Fine, 1991). This inequality can lead to minorities being at risk to fail, through no fault of their own. Fine argues that inner city schools are disadvantaged from the start because of the disproportion of funding, curriculum, race stratification, and beliefs. As a result of the aforementioned, the school system breeds failures and dropouts and fails to educate as a public institution should. Coincidentally, these schools

support prior research by being predominately populated by minorities. What schools possibly need are tutoring programs designed to target those students (not just minorities, but all) who are susceptible to dropping out.

Ethnicity of Tutors

Rohrbeck (2003) and Polirstok and Greer (1986) found that positive outcomes also come from tutoring with minorities. They both concluded that those minorities who were tutored by minorities gained in both academic and individual growth. Rohrbeck's (2003) meta-analysis study of 90 elementary schools found that schools with more than 50% ethnic minority students had higher effect sizes for academic outcomes than those with fewer than 50% ethnic minority students. Both, however, suggest positive outcomes from tutoring. What neither explains is the level of knowledge held before tutoring.

Research supports all types of tutoring as a way to improve academic achievement, especially for minorities of all ages. Also, a student's attitude and behavior as they relate to school (for both minority and White students) improves by tutoring with students from one's ethnic heritage.

Minorities as Tutors

Minorities tend to stay in school longer when they become tutors (Good, Halpin, & Halpin, 2000). These authors conducted a study of 19 ($N = 19$; 4 females and 15 males) upper-class Black engineering college students who were assigned specific minority freshman students upon enrollment. Their task was to cross-age tutor their tutee on study skills, critical thinking skills, and core engineering concept skills. The authors suggested that the responsibility of

tutoring would force those tutors to enhance their own skills; consequently their own grade point average would increase as attrition rates decrease. The tutors were trained and tutoring took place for 9 weeks.

Over 50% (10 out of 19) of the tutors believed that their study skills increased, 27% (5) reported self-growth of critical thinking skills, and 27% (5) thought they gained a deeper and better understanding of engineering concepts, communication skills, and growth of confidence (Good et al., 2000). The overall mean average of those tutors went from 2.62 to 2.76. Using minorities as tutors allows for them to establish a connection with someone other than themselves, possibly giving them a reason, other than themselves, to stay in school.

At-risk Students as Tutors

Students of at-risk potential are no different than those students with disabilities or minority status. They are just as capable of being a tutor as any other student. Those of at-risk potential show a reduced number of disciplinary referrals, which can give them a sense of accomplishment. Gaustad (1992) concurs that higher average has no correlation to being a better tutor. Also, she found that those who struggle with behavior problems (a trait of an at-risk student) can relate to those who are struggling academically with a respective subject. Any sector of the student population can be a successful tutor with the right training and format.

At-risk Study

Roswal, Mims, Croce, Horvat, and Block (2001) studied 282 subjects enrolled in seventh grade at a Virginia Junior High School. The authors measured the self-concept of the at-risk students and its relation to dropouts. The average age was 13.6 and the students were divided in

three groups: Group 1 had 101 students, and they participated in peer tutoring; Group 2 had 95 students, and they participated in group learning activities; Group 3 had 86 students, and they participated in traditional class. English was the primary language for over 95% of the students in all groups. The sample had the following ethnic make-up: In Group 1, 80% of the students were Black; 15% were Caucasian; 3% were Hispanic; and 2% were other. In Group 2, 78% of the students were Black; 14% were Caucasian; 4% were Hispanic, and 4% were other. In Group 3, 80% of the students were Black, 14 % were Caucasian, 3% were Hispanic, and 3% were other.

Students met over a 16-week period from January to May. All students received regular core class instruction except Group 1, where students would work with others of like abilities for 25 minutes each day. Those like ability at-risk students were divided into smaller groups based on academics, male/females ratios, and socioeconomic backgrounds (Roswal et al., 2001). Group 2 would work together in a large collaborative setting, and Group 3 would have no such peer or collaborative learning activities.

Using the Piers-Harris Self-Concept, Group 1 had a pretest of 56.90 and a posttest of 12.28, demonstrating a significant improvement over Group 2, with a 56.16 pretest, 53.76 posttest, and Group 3 with a 48.65 pretest, and 53.20 posttest (Roswal et al., 2001). There was no significant difference between Group 2, the collaborative group, and Group 3, the traditional group, in the sense that no tutoring or collaboration was offered (Roswal et al., 2001). These results indicate that at-risk students can be effective in bringing forth improvements in self-concept.

Teens and Friends

A characteristic of someone who is at-risk is his/her lack of peers within the school system. Students need a boost in their self-esteem to enhance their sense of belonging and to hopefully help them fit in. One characteristic of an at-risk student is their belief that they do not fit in with the community. Nazzal (2002) found that tutoring programs of any sort help to lighten the sense that one does not belong inside the school and within the neighborhood. With the newfound sense of fitting in, it is possible that the students will begin to have a new appreciation for academics and want to do better.

Greenwood (1991) suggests that tutoring take place in all classes at all levels as to allow input from all students. Creating classwide peer tutoring opportunities where the tutor teaches the tutee because they know more about a particular topic puts instructional variables, like time management, monitoring, and questioning into practice. Results indicate that classwide peer tutoring, specifically with spelling and arithmetic, shows evidence that at-risk students benefit from receiving tutoring just as much as they do from administering it. One note to mention is that in this particular study, the classroom teachers were willing to adapt the content material to better suit the acquisition of rote memory skills, as that is one of the most effective ways to translate material.

Rewards

As a type of motivation, at-risk tutoring programs that show the best results are the ones that give some kind of reward to its participants (Trovato & Bucher, 1980). The reward can be tangible; however, verbal praise can be just as effective. Positive and affirming statements go a

long way when building respect. A tutee is more apt to listen to someone who gives constant praise as opposed to someone who constantly ridicules.

The interaction between the tutor and the tutee can create and encourage understanding and acceptance of others through dialogue, and acceptance can be a reward in and of itself (Trovato & Bucher, 1980). The mere fact that the tutee has someone to talk to on an individual basis allows them the opportunity to see that communication can improve future situations for those at risk.

Whether students are at risk or not, offering some type of incentive or tangible reward could be a positive incentive. Giving tutees some type of structured goal to attain and allowing them to help choose a respective reasonable reward can and does help cultivate a positive result for both the tutor and tutee (Polirstok & Greer, 1986).

Examples of At-risk Programs

A variety of local, state, and federally funded programs exist to target those students deemed to be at-risk.

Reading Recovery

In 1984, Marie Clay developed an early intervention program to target first graders who were at risk for reading development (Clay, 1993). After being recommended by their teachers, first graders were tutored daily by a teacher or a professionally skilled tutor for 20 weeks. Students were tutored in a series of ways such as by reading familiar books, by writing and reading sentences from the previous books, by rehearsing those sentences, and by reading and

writing sentences from a new book. This repetition is what students can build off of to acquire the comprehension and understanding necessary to be able to read.

Those students at risk were not the only group targeted, but all students were targeted in order to enhance reading comprehension. Marie Clay and her Reading Recovery program laid the foundation for having tutors outside of the school setting. Children can effectively be tutored by someone other than teachers from their respective school (Fitzgerald, 2001).

Coca Cola Valued Youth Program

This program was developed by a research association, in conjunction with Coca Cola, to prevent at-risk students from dropping out, to improve their academic skills and attitude, and to supply support via tutors to help obtain the specific goals. Different states define at-risk in similar ways. The Coca Cola Valued Youth Program was originally developed in San Antonio, Texas, where students were defined at risk, which is based on the www.atrisk.org website (Fashola & Slavin, 1998). This cross-age tutoring program matched middle high school students with elementary students.

An evaluation of Valued Youth Programs compared 63 Valued Youth tutors to 70 students in comparison groups (Fashola & Slavin, 1998). Students were matched on basis of age, ethnicity, lunch eligibility, percentage of students retained in a grade, and reading test scores. Students were then selected into the experimental group based on scheduling and availability and the remaining students were placed into the comparison group. Nearly all were Hispanic.

Hispanic youths were targeted as tutors because the affiliated research association felt Hispanics might value a monetary stipend, and that Hispanics can help their families with an

income (Fashola & Slavin, 1998). Students were paid to promote a sense of responsibility and to treat those involved as adults.

Two years after the program began, 12% of the comparison students, but only 1% of the Valued Youth Program students, had dropped out. Reading grades were significantly higher as were attitudes toward school (Fashola & Slavin, 1998). Some lessons learned are the Valued Youth Program had substantial impact on attendance rates, meaningful relationships in the form of support groups developed, higher self-esteem, and an increase of academic skills. The cross-age tutoring Valued Youth Program encourages all States to borrow their program and adjust it to their respective needs and desires.

All at-risk programs have the same joint goal, which is to target those kids deemed as possible trouble and/or failures, keep them in school, and make sure they become productive members of society. Establishing some type of relationship for the tutee is key to making sure they have some accountability and group to belong to as the family structure might not always be there.

Summary

A variety of definitions exist to explain tutoring. Across the United States many cross-age tutoring programs have been implemented to target students by giving them a different view on education and achieved curriculum. Some schools use peers, others use upperclassmen, and others use people from the community. The goal is the same--to tutor and give some type of comprehension to academic material with the hope that students grow as individuals just as much as they grow academically. This growth can be assessed by evaluating the program that is attempting to help students grow.

Many variables exist that make tutorial programs effective. First and foremost its program uses standards set forth by an independent body. Successful cross-age tutorial programs use data and/or theory to clearly identify the problem that is being targeted and what its desired goals are. Tutors are not selected based on intelligence; rather, they are selected based on their ability to communicate. Tutors are assigned to tutees based on gender and cross-age tutorial programs train their tutors to know their roles and responsibilities. Tutors are trained to be patient and to give feedback with constructive criticism. Cross-age tutorial programs keep good records and limit the timeframe of tutoring.

Current research supports tutoring and its impact on students' mental capacity, within society, between peers, as it relates to academics, and the desire to graduate. Improved social skills by the building of cooperative and communication skills, cross-age tutoring can benefit all that are involved. Weekly tutoring motivates tutees to want to learn and to succeed academically. Consistency by way of individual cross-age tutoring and modeling can foster goodwill that students might not receive from teachers in large class settings.

Whether a student is White, Black, Hispanic, or Asian, male or female, schools and their administrative staffs should do their part with ongoing communication between parents and students to make sure graduation is a viable option. Cross-age tutoring can make this goal a reality.

CHAPTER III

METHODOLOGY

Why Evaluate?

Evaluation gives information about the quality of programs, specifically educational programs. Without evaluations we could possibly not know whether or not students were performing satisfactorily. Proper evaluation can be and is an essential part of the education field. It can help identify strengths and weaknesses of a program and detect possible problems and how to address those problems (Joint Committee 2003; Sanders, 1976). Why we need evaluations is not as simple as a list. Evaluations have long been a part of the way modern societies plan and bring about change. It has become an essential part of policies, decisions, and reforms. This chapter will review what a process and outcomes evaluation is as well as the research questions which will assist with this program evaluation.

Historical Milestones

Before the early 1900s, educational evaluation was not a viable and relied upon form of study. Ralph Tyler is given credit to using the phrase educational evaluation as a way to study programs through clearly stated objectives (Stufflebeam & Shinkfield, 2007). Tyler had a strong belief that evaluations could be used as a way to guide school systems with the design of their curriculum. Tyler went so far as to state that evaluations should take place before school curriculums were written. Doing so would allow student behaviors to mold and influence the way topics would be designed and developed.

Tyler's Eight-Year Study examined the effectiveness of curriculum in 30 schools throughout the United States. His approach concentrated not on measures of achievement using quantitative data, but comparing outcomes with objectives (Stufflebeam & Shinkfield, 2007). Specifically, he looked at the individual student in certain school districts as opposed to designing a blanket curriculum for an entire city to follow. His study was well received and set the stage for future studies in educational research to place value within evaluation studies.

Cronbach (1963) continued assessing the worth of evaluations within educational settings. Cronbach counseled evaluators to reconceptualize evaluations as a process of gathering and reporting information that could help guide development within different genera's (Stufflebeam & Shinkfield, 2007). Cronbach, like Tyler, fundamentally believed that curriculum should not be written and designed to serve the masses without taking into account the make-up of the population. Doing an evaluation before a program is written and analyzing and reporting targeted objective outcomes would serve the needs of those for whom a program is being written and designed.

In the 1970s, more anti-pre- and posttest literature was being penned with regard to evaluations. Stufflebeam (1971) called for the use of system analysis techniques to evaluate programs. This concept recognizes the need to evaluate goals and look at inputs, implementation, and outcomes. Along with the aforementioned, those doing the evaluation should make judgments about what they are evaluating.

In today's education field, those who are seeking to utilize evaluation methods should consider themselves pragmatists (Stufflebeam & Shinkfield, 2007). Their ultimate goal should be to take existing information and look to improve upon it. If improvement is not necessary, an evaluation's objective finding should seek to exemplify how an existing program is being run

and how its goals are being met. Also, its program could and should also be used as a model for replication.

Evaluations today, however, differ little from past evaluations in that objectives can lead to other objectives. Outcomes can be unpredictable and lead to future questions which can lead to more studies.

Evaluation

Throughout the later part of the 20th century, evaluation as a discipline of study began to be accepted in various areas of learning. Evaluation is a process for giving attestations on such matters as reliability, effectiveness, efficiency, safety, ease of use, and probity (Stufflebeam & Shinkfield, 2007). It focuses on the judgment of one or few.

Overview

Evaluation is about determining value and worth. Without evaluations we would not know whether or not programs are effective or whether students are performing satisfactorily (Sanders, 1976). Before its semi-recent acceptance, evaluation was thought of as too vague and subject too much to one's interpretation to be an acceptable form of study. Universities rejected this qualitative judgment method of accountability. That all changed in the 1970s when a Joint Committee on Standards for Educational Evaluation was formed by various collegiate schools throughout Canada and the United States. Since their inception in 1975 they have shed new light with participation of evaluation studies.

This Joint Committee specifically focused on evaluation and its impact within the discipline of education. According to the Joint Committee on Standards for Educational

Evaluation (2003), evaluations need to be systematic and focus on determining an object's value. In doing so the scope of the evaluation can and will be modeled based on the objectives that are desired. Evaluations must meet a need, be systematic, be feasible, and have some sort of significance (Stuffelbeam, 1971; Stufflebeam & Shinkfield, 2007). Depending on one's use for it, the definition of evaluation still has several different interpretations and meanings. It is the systematic process of delineating, obtaining, reporting, and applying descriptive and judgmental information about one's merit, feasibility, and significance (Joint Committee, 2003; Stufflebeam & Shinkfield, 2007).

In general, the outcome of the evaluation should be the requirements of the study. Here is where the many anti-evaluation professionals have an issue: A study proposal is outlined within one's methodology; however, if no quantitative results are given, the validity is questionable. Unless quantitative, mathematical data is used, one's integrity can come into play. An evaluation can be of the qualitative nature as quantitative experimental designs are not applicable to many evaluation situations (Stufflebeam & Shinkfield, 2007). Results, whether or not they reach their desired outcomes, still need to be shared for possible exploration. Specifically, evaluations in their informality are subject to errors in judgment (Stufflebeam & Shinkfield, 2007). What those inaccuracies do is present opportunities for future study as to what went wrong and why.

An alternative to errors in judgment is to view a program's outcomes not met as a way to continuously improve and hone one's skills toward the topic being studied (Sanders & Horn, 1994). This allows for continuous improvement, growth, accountability, and future enlightenment.

Process and Outcomes

There are several components to program evaluation (Stufflebeam, 1971). Process evaluation looks at the interworking and proceedings within a program. It examines intervention, barriers and how to overcome those barriers. Process evaluation seeks to understand what is being done to overcome barriers and if enough information exists if someone wants to replicate it (Stufflebeam, 1971). Bottom-line within process evaluations is the concern whether or not the appropriateness of what is taking place aligns itself with goals obtained within its outcomes. Outcome evaluation determines what your outcomes measure (Stufflebeam, 1971) and whether or not they were achieved. Is what is in place working for those involved? Specifically, does it results do what it is supposed to do by something being gained.

Types of Process and Outcomes Evaluation

Two types of evaluations exist to assess accountability, worth and improvement of programs. There are formative and summative evaluations. Formative and summative evaluations can be implemented within a program, outcomes, or process evaluation. Each varies based upon how they seek to judge information.

Formative and Summative

A formative evaluation is used to see how a programs process is working and developing throughout. Basically, formative evaluation provides feedback for improvement (Stufflebeam & Shinkfield, 2007). The role of the evaluator is interactive and the methodology can be quantitative and/or qualitative. Reporting takes place with groups and meetings. Formative

evaluations can assist with direction, decision planning, the focus of the program and the process within.

Summative evaluation allows for accountability reports toward the end of a respective assessment, or via an outcomes evaluation. It determines, for those involved, the quality of the program and should involve in-depth information about whether or not goals were met (Stufflebeam & Shinkfield, 2007). Summative evaluations help to promote understanding to interested stakeholders. The role of the evaluator is independent and the methodology usually is of the quantitative nature. Reporting takes place via formal reports.

Both formative and summative evaluations seek to foster enlightenment. They consider all criteria that apply in determining value (Stufflebeam & Shinkfield, 2007). Ideally, useful information is collected by examining the process and decisions are made with respect to its outcomes.

Quantitative Evaluation

Quantitative design strives to control for bias so material presented can be understood in an objective way. Quantitative research design looks to isolate specific variables (Berk & Rossi, 1990; Marriam, 1992; Patton, 2003). Quantitative data are collected under controlled conditions to rule out the possibility that other variables account for the relationships that are identified (Stufflebeam & Shinkfield, 2007). The main thought with my process and outcomes evaluations study was to utilize data driven approaches to improve dependability.

Parts of an Evaluation

Design

Before a study can be conducted, an evaluator should prepare a design that will go about trying to follow. A design should focus on questions to be addressed, criteria to be applied, information to be collected, analysis tools and procedures, and reporting methods (Stufflebeam & Shinkfield, 2007).

While designing an evaluation, the evaluator needs to support his/her findings with purposeful sampling strategies (Joint Committee, 2003; Patton, 2003; Stufflebeam & Shinkfield, 2007). Strategically designing the perfect evaluation is tricky because no one type fits a mold. For example, options for sampling include, but are not limited to, stratified sampling, emergent, critical case, homogeneous, criterion, intensity sampling, and/or any combination (Patton, 2003). Sampling is important in making sure the needs of the evaluation are being met. The same rationale applies with sample size. No formula exists to determine sample size. Trade-offs exist between depth and breadth, between doing fewer cases in greater depth, or more cases in less depth. Whatever the strategy is, a reasoning or rationale will need to be given (Patton, 2003).

It is the role of the evaluator to set attainable designs based upon the project desired, knowing that design decisions might need to be altered as the evaluation unfolds. Unexpected things happen and a design objective can then become fluid.

Standards

To guide an evaluator, standards are needed to prevent the evaluator from being dishonest. Evaluations can allow for subjectivity; however, to create some sort of credibility, sound evaluations must reflect a sort of general consensus. These standards were devised by a

group of engaged professionals of evaluators who felt, if met, would enhance the quality and fairness of evaluations (Joint Committee, 2003). Professional evaluators should know, understand, and faithfully apply the following criteria: (1) Utility--is it useful and credible? (2) Feasible--is it practical and viable? (3) Propriety--is it cost effective and does it respect those involved? and (4) Accuracy--is it truthful and reliable? With the above criteria and the open-ended nature of the standards, it is important to stay on track, also knowing that unanticipated issues may arise (Patton, 2003).

Standards should all be efficient, help maintain trustworthiness, help to earn the public's respect, provide accountability, and provide an overall contribution to the evaluation field (Joint Committee, 2003; Patton, 2003; Stufflebeam & Shinkfield, 2007). All principal objectives should be carried out competently and the results should be analyzed systematically.

Data Collection

To make sure standards are being upheld an evaluator has multiple methods he or she can use to gather data. The evaluation type will determine which evaluation method should be utilized (Stufflebeam & Shinkfield, 2007). All evaluations should seek to apply the same standards; however, the methods utilized to obtain the information can vary. An environment analysis involves the data collector inside the desired population dealing with specific interviews, while a project profile evaluation involves the collector with a program from its start to finish who then submits a final report of its finding. A case study evaluation can take years and usually involves an evaluator asking questions with individual interviews.

Case studies, environment analysis, and project profiles all seek to synthesize community standards with their own twist on the method by which data are collected. The goal is to collect

in a competent, concise organized manner (Patton, 2003). The data should then be organized to reflect the nature of the evaluation. Once the data are collected and organized they then need to be analyzed in a clear, credible way that addresses the issues of the evaluation.

Analysis

Once the data are collected, and an analysis is needed, the evaluator should examine the information to determine the extent to which the respective groups deviated, if at all, from each other. Analysis means identifying and assessing the constituent elements of each set of obtained information and their interrelationships in order to clarify the information's dependability and meaning for answering particular questions (Stufflebeam & Shinkfield, 2007). Looking for relationships among the desired evaluations outcomes will help validate findings.

The evaluator should assess the scope to which the comparison groups were equivalent by presenting tables or charts comparing the groups at the evaluation's outset on different variables (Stufflebeam & Shinkfield, 2007). Doing so can allow for the participants' experiences within a respective program to be analyzed in a systematic way.

Conclusion

Every evaluation program has some sort of value for purpose. Its underlying principle seeks to ethically apply standards by a formative and/or summative approach assessment. Process and outcomes evaluation studies exist with some objective, or objectives, which seek to be attained. To obtain those objectives, clear and concise goals need to be written. Data need to be collected and analyzed. Written objectives, data collection, and the analyzing of results can help ensure an ethical evaluation.

Descriptive Statistics

This evaluation drew upon descriptive statistics because it allowed for data to be organized in a way that will help divulge associations between the tutored and untutored populations. Descriptive studies seek to illustrate data which is collected (Yin, 2003). Analyses seek to determine whether patterns emerge from the data at hand. Descriptive studies need data to be correlated to help describe scenarios being studied. Descriptive statistics typically involve some type of way to organize data. This organization is usually done by coding. Coding is a way to short-hand data so it can be easily retrieved (Merriam, 1998).

Coding descriptive data occurs on two levels; either to help identify information about data or to interpret constructs related to analysis (Thomas, 2005). An advantage of descriptive statistics is that information is arranged, sequenced, chronicled, and preserved in an organized form (Thomas, 2005). Descriptive correlations reveal possible relationships between variables. Correlations between variables can be expressed graphically or statistically. The final product of descriptive statistics is shaped by the data collected and by the analysis that accompanies it.

Introduction to the Study

The purpose of this study was to explore the Freshman Academy cross-age tutoring program at Pinewood High School by way of a program evaluation. This systematic evaluation included surveys and interviews. My sample consisted of fall 2007 students at Pinewood High School. A quantitative approach was utilized. Quantitative descriptive relationship charts (Merriman, 1998; Yin, 2003) used data (Joint Committee, 2003; Stufflebeam & Shinkfield, 2007) from fall 2007. Questionnaires followed with the same students from fall 2007. Throughout this study, traits of a process and outcomes evaluation of the cross-age tutorial

program were conducted. This evaluation study was conducted in several components. Data were collected in several parts.

For one section of process evaluation the entire ninth grade population of 870 students had information statistically extrapolated from. Another section within the process evaluation utilized those participants who were invited to the Freshman Academy, but chose not to attend. One-hundred participants were solicited and given a questionnaire seeking to understand why they chose not to attend a free cross-age tutorial session. The outcomes portion of my evaluation solicited 79 participants who represented the tutored population. This study sought to understand the best successful predictors of those who attend at least one session of the Freshman Academy. Another section sought to find differences, if any, among gender and ethnicities of those participating in the Freshman Academy. The evaluation consisted of two parts: process evaluation which examined the interworking and proceedings and outcomes evaluation which examined the results of the procedures.

Process Quantitative Study

There were two indicators in this portion of my study: determining differences between the total ninth grade class ($n = 870$) with those invited ($n = 207$) with those who attended the Freshman Academy ($n = 79$) and determining why some invitees chose not to attend ($n = 25$).

Indicator 1--Research Question 1: Differences Among Attendees

For the differences among the total ninth grade class my study utilized chi square (X^2) statistics to answer whether there is a representative proportion of those students who were invited to attend the Freshman Academy and those who actually attended at least once as

compared to the ninth grade class as a whole. Analysis focused specifically on ethnicity, gender, and SES (using free and reduced lunch as a proxy). To assure anonymity coding was used, not names (see Appendix A for chart of tutees).

Coding ensures anonymity and allows for information to be arranged systematically. Analyses of the students sought to evaluate what discrepancies and connections, if any, existed between those invited ($n = 207$), attended ($n = 79$) and how they differed.

In fall 2007, 79 students ($n = 79$) attended at least one tutorial session. For analysis purposes numbers were used as code. Each name was given a number to ensure anonymity. Every accessible tutee had his/her information collected and charted under this section (see Appendix B for raw data of those attending).

Indicator 2--Research Question 2: Untutored Population--Why Did Invitees Not Attend

The second indicator sought to understand why some invitees did not attend. Open-ended questions were administered to students ($n = 25$) who qualified to attend, yet chose not to attend for various reasons. A domain analysis was utilized linking group responses. This will potentially address barriers of the program by addressing the reasons of those who did not attend. This portion of the second indicator consisted of one-hundred questionnaires to the untutored population. This survey was given to a group of those students who, according to Pinewood, were at risk of failing either their math or biology during their ninth grade class in fall 2007. At risk was determined by their having a 70 or below average. To be considered part of the untutored population they had to have refused tutoring at either the 6th, 9th, 12th, or 15th week. Their responses were categorized via a domain analysis where responses were collected and

organized representing the relevant information in a domain (Joint Committee, 2003; Stufflebeam & Shinkfield, 2007) based upon certain questions.

This study provided whether or not common and variable part exists with responses of those who did not attend. Close to 500 different students were invited to attend the Freshman Academy throughout fall 2007 semester. Seventy-nine students attended, leaving more than 400 who did not attend for various reasons. A stratified sample of 100 ($n = 100$) was solicited to participate. Strata were collected from each class of math and science, and 50 from each class were solicited. This equal number of men ($n = 50$) and women ($n = 50$) were not selected using proportional allocation. Differentiating stratum would not be logistically possible as over 500 different students were considered at risk at one time. Questions were derived from research literature and written to help understand why students choose not to attend a free cross-age tutorial program. Results were analyzed by utilizing a domain analysis.

Outcomes Quantitative Study

There were two indicators in this portion of my study: best predictors of success and differences in attitudes towards the tutorial program with two groups. An outcomes evaluation explores results of an evaluation.

Indicator 1--Research Question 3: Best Predictors of Successfully Passing a Class

For the best predictors of success (success is defined as passing the class) my study sought to find that no significant differences existed among those who passed their respective class. Regression analysis was utilized. Dependant variables were a student's final grade in class at the end of fall 2007 semester and what a student's grade was at the 9th week which brought

them to tutoring. Independent variables were a student's socioeconomic status (using free and reduced lunch), number of times attended tutoring, gender, and ethnicity. The hypotheses here were that those who attended ($n > = 79$) the Freshman Academy would do better regardless of race or gender and that there would be no significant relationships between race and gender. In other words, analyses sought to determine discrepancies and connections between the independent and dependent variables of those who attended.

Indicator 2--Research Question 4: Attitudinal Differences Among Gender and Ethnicities

The second indicator in the outcomes portion of my study sought to understand if there are differences in attitudes towards the tutorial program between White and Black students and between boys and girls. My study made use of a Likert-type questionnaire of those who attended the cross-age tutorial program. The results that emerged were analyzed by utilizing a contingency table.

Data consisted of 50 ($n = 50$) students who attended at least one tutorial session in fall 2007 and qualified to be a participant. To be considered part of the tutored population they had to accept tutoring at either the 6th, 9th, 12th, or 15th week and return a parent consent form. Questions were derived from research literature. To view the Likert-type questionnaire administered to the tutored population see Appendix C.

Population of the Study

The population consisted of those who attended and those who chose not to attend the Freshman Academy in fall 2007. Unit of analysis was students who attended and the sample population was from those ninth graders who did and did not attend.

Sample

Stratified sampling was utilized from ninth grade tutees. Collection included those male and female participants who attended and did not attend the math and science Freshman Academy, a cross-age tutorial program. The ninth grade population was 870 ($n = 870$). Sections of quantitative evaluation portion consisted of different students who were invited ($n = 207$) to and attended ($n = 79$) the Freshman Academy in the fall 2007 semester at Pinewood High School whereas my untutored population consisted of 100 ($n = 50$ males and $n = 50$ females). The duration of this study lasted one semester.

Participants consisted of all ninth graders who were deemed by Pinewood High School of being at risk of failing because they had a 70 or below in one or more core classes. Core classes consisted of math and science. Those who attended at least one tutorial session were characterized as a participant. One-hundred and seventy-nine ($n = > 179$) students participated in this study.

Summary

This program evaluation sought to methodologically examine two specific aspects of Stufflebeams 1971 model of evaluation. The Freshman Academy was quantitatively analyzed by exploring specific processes and outcomes. Specifically, a process evaluation seeks to understand the interworking and proceedings within a program, while an outcomes evaluation seeks to determine whether or not desired outcomes were achieved. This evaluation sought to enhance the value of its program being evaluated, the Freshman Academy.

Summary Chart

The chart visually organizes information from within my evaluation. The purpose is to give the reader a source to use as a collective reference for pertinent information relating to my study.

Phase one	BACKGROUND INTERVIEWS			
Phase two	EVALUATION			
	PROCESS EVALUATION		OUTCOMES EVALUATION	
	Indicator 1	Indicator 2	Indicator 1	Indicator 2
Question	What are the demographic differences among the total ninth grade class students as it pertains to those students invited and those who actually attended the Freshman Academy?	Why did some invitees not attend?	What are the best predictors of successfully passing a class?	Are there differences in attitudes towards the tutorial program between White and Black students and between boys and girls?
Data	Chart of tutees for week nine	Untutored Population	Relationship Chart	Likert Scale
Analysis	Chi square	Domain	Regression	Contingency Table
Participants	79 = attended	25 = returned yes	69 = attended	50 = returned yes
Sample Size(s)	870 = total ninth grade students 663 = not offered 207 = total invited	100 = consent forms out 69 = not returned 6 = returned no	79 = attended -10 = those who attended by choice	79 = consent forms out 23 = returned 6 = returned no

CHAPTER IV

RESULTS

Overview

This chapter provides the results of the information collected. The results used evidence to support this study's research questions. Evidence enhances the results of the evaluation of the cross-age tutorial program at Pinewood High School. It is broken down into two phases with phase two being divided. Phase One--Background Interviews; Phase Two--Process Evaluation (Indicator 1--Indicator 2) and Outcomes Evaluation (Indicator 1--Indicator 2).

Freshman Academy Program

It is important to note that this study began with a concise interview with the program founders. This will be phase one of my dissertation. Specific questions to the founders asked about are the program's goals, attendance records, selection of tutors, training of tutors, the program's timeframe, and the Academy's foundation. In addition, questions sought to see whether the Academy identified its problems, whether it set feasible goals, and was cost effective.

The intent was to get an explanation of the program's design and purpose in order to set the context for the process and outcomes evaluation. This background on the original design intent of the Academy is necessary to help interpret the qualitative data.

Questions were asked to see how similar or contradictory the Freshman Academy was with literature.

Phase One: Background Interviews with the Program Founders

An explanation of the program took place when the founders responded to a series of questions as they pertained to their cross-age tutorial program. Below is a contextualization of the founders' responses to asked questions (see Appendix G) compared with the literature.

One question asked about the programs goals. Their response was simply to provide an opportunity for academic growth to those students who participated. Ultimately, they felt it will reduce the 9th grade failure rate. This, of course, requires attendance and concomitant policies. To be an effective tutorial program it must be structured with competent people involved who take good attendance. Keeping track of who is coming and going can be important for accountability of student whereabouts. The founders keep an attendance and time log of those who attend.

According to the founders, the selection of teacher tutors occurs through an open announcement of the position while the selections of student tutors have come from math teacher recommendations. This, according to the literature, is not an effective way to select tutors as taking into account one's gender and ethnic make-up does make a difference.

Another question centered on the training of the program tutors. According to the founders, no formal training occurs with the volunteers. The literature disagrees with the fact that Pinewood High School gives no formal training. Tutors need to be educated to make sure they know what their roles and responsibilities are and to instill a sense of mental confidence within themselves.

Tutoring goes from 2:30-3:30 p.m., Monday through Friday. The Freshman Academy has the quintessential problem with its offering of tutoring. That is its timeframe. If at all possible, tutoring would take place throughout the school day to avoid morning and after-school conflicts.

Founders believe that time and money is why tutoring is not able to be offered at a variety of times. In addition, the founders have no foundations of their program. Their rationalization was that it's better than the alternative which is to offer nothing.

The cost of the program is \$2000.00 per semester or \$4000.00 per year. Research indicates that tutoring by way of cross-age is one of the most cost effective and useful ways of keeping students on track for graduating and to target those struggling in academics and those who are at-risk. However, literature does not mention any specific dollar amount.

The programs founders were questioned about student success. Specifically, what is done to measure success? According to the founders, specific data to measure success since the Freshman Academy has started is its ninth grade math failure rate, which currently is at 7%, while science is at 8%, both down from 12% in previous years. This quantitatively indicates that their program may be working successfully, at least at the outset.

Finally I asked what the general perception of the Academy is at Pinewood. The founders feel that credibility comes from people in the school community talking about the Freshman Academy and its usefulness. The founders claim that throughout various meeting parents are well aware of the Freshman Academy and its intentions. With that, they have heard nothing which disproves their beliefs.

It must be noted that according to the literature the founders incorrectly define at risk. According to <http://www.at-risk.org/index.html>, to be classified as at risk, teens must answer yes to 4 of 24 questions, which range from being a habitually truant student to frequent outbursts of anger. Pinewood High School does not do so. Instead they define at risk as someone at risk of failing their ninth grade math or science classes as determined by their having a 70 or below average during the 6th, 9th and/or 12th week mark.

The founders do not take into account one's ethnicity and gender when selecting and pairing tutors with tutees, nor do they train their tutors. An effective cross-age tutorial program takes the time to select and pair tutors with tutees and offers periodic training of tutors. Ideally, tutors and tutees would be paired with same gender and ethnicity. The founders do not do this. They only ask math and science teachers to recommend students they feel will make good tutors. No specific qualities of a tutee are suggested. Research supports that tutees that were trained to give positive or negative reinforcement were better at the tutoring process.

If possible, tutoring programs should be offered at various times throughout the day. The Freshman Academy is only offered after school from 2:30-3:30 p.m., Monday through Thursday. Founders realize that for various reasons many potential tutees will not be able to attend; however, because of time and money constraints it could only be available after school.

Most cross-age tutorial programs derive their foundation from theory, a district professional, or a university. In doing so it allows for a structured base to begin the tutoring process. The Freshman Academy has no foundation. It was simply started by its founders to give students an option for remediation.

In some ways, Pinewood High School's cross-age tutorial program is supported with literature. Excellent records are kept from those who attended the Freshman Academy. Each tutee and tutor is required to sign their name and time upon entrance and exit. Each tutee is logged into a database for recordkeeping. Also, the program is cost effective. The \$4000.00 pays each teacher \$500.00 per semester. Overall the program is reliable and successful. Founders use data to measure its reliability and success. In 2004 math and science had a failure rate of 12% whereas it had a 7%-8% failure rate at the time of this study in fall 2007.

The Freshman Academy’s history is brief. While it is certainly an important first step to offer remediation, the Academy’s goals for academic growth are vague. Furthermore, many of the practices and policies implemented to date are inconsistent with the research literature. That being said, with this dissertation and as the years move forward, Pinewood High School’s cross-age tutorial program will adapt and should evolve to reflect current literature.

Phase Two Evaluation: Process Evaluation

Indicator 1: Research Question 1

1. What are the differences among the total ninth grade class as it pertains to those students invited to the Freshman Academy and those who actually attended?

Table 1 shows the ethnicity of tutees who were, according to Pinewood High School, at risk of failing at one time throughout the fall 2007 semester in either their math or science class. Pinewood’s population is 67% White, 13% Black, 10% Asian, 9% Hispanic, and 1% Multiracial and Native American. The population attending the Academy was not in line with total school population. According to Table 1, 38% attending the Freshman Academy were White, 39% were Black, 9% were Asians, 13% were Hispanic, and >1% were Multiracial. Research suggests that minorities, for various reasons, are more in need of tutoring (Rumberger & Thomas, 2000).

Table 1

Ethnicity Totals

Ethnicity	Totals
White	30
Black	31
Hispanic	10
Multiracial	1
Asian	7
Other	0
Total	<i>n</i> = 79

Table 2 shows the number of free and reduced lunches in relation to the ethnicity of the students. Of those who attended the Freshman Academy, 27% received a free or reduced lunch. Again, a disparity is seen as Blacks acquire a free and reduced lunch more than all other ethnicities combined. Free and reduced lunches are an indicator of one's socioeconomic status. Research indicates that those students who come from lower socioeconomic backgrounds are more prone to eventually drop out (Astin, 1999); therefore, these students might need tutoring more than those students who come from the opposite spectrum.

Table 2

Free and Reduced Lunch Totals

Ethnicity	Free	Reduced	Totals F/R	Neither F/R
White	2	1	3	27
Black	11	1	12	19
Hispanic	2	1	3	7
Multiracial	0	0	0	1
Asian	2	1	3	4
Totals	17	4	21	58

n = 79

Table 3 shows the free and reduced lunch for all of Pinewood High School. It is broken down by grade and ethnicities for the fall 2007. The population of Pinewood HS for fall 2007-spring 2008 was 3,455. Fourteen percent of Pinewood's students obtained either a free or reduced lunch. Upperclassmen follow the same trend as the ninth grade class. That is a disparity within ethnicities. As students move to their next grade level, only multiracial and Asian make gains between their 10th and 11th grade, then lose for their senior year.

Table 3

Free and Reduced Lunch Totals of Pinewood High School

Ethnicity	9th	10th	11th	12th
White	35	30	23	23
Black	56	35	34	31
Hispanic	42	29	17	13
Multiracial	3	3	5	1
Asian	22	27	28	21
Totals	158	124	107	89

n = 478

Table 4 shows the relationship between male and females who qualified as needing tutorial assistance. Female participation was at 43%, while male participation was at 57%. This is closely aligned with Pinewoods gender population of fall 2007-spring 2008. One-thousand, five-hundred and sixty-three students (45%) were females whereas 1,892 (55%) were males.

Table 4

Gender Totals

Gender	Totals
Male	45
Female	34
Total	<i>n</i> = 79

Table 5 has the number of tutees who were failing math, science, or both at any given time during the 9th week.

Table 5

Class Totals

Class	Totals
1=Math	26
2=Science	21
Both	32
Total	$n = 79$

Table 6 presents the level of class each student was in with the number of times math or science classes were offered for that level of student. For instance, five different technical level students were invited to math tutoring at least one time. Seventeen students (up to five may be a math repeat) were invited to science tutoring at least one time. The differences in level vary from class workload to tests. For instance, gifted curriculum had certain guidelines it must adhere to that college preparatory and honors classes did not. In an ideal classroom, the higher the level, the more challenging the coursework for the student.

Table 6

Level Totals

Level	Math	Science
Technical	5	17
College Prep.	40	19
Honors	13	14
Gifted	0	1
Advanced Placement	0	0
Total	58	51

Table 7 presents the total raw number of tutorial sessions invited to the 79 different students from week 6 up to and including week 15. Students offered tutoring had the opportunity

to attend twice a week. Each student, depending on whether he/she fit the Academy’s mold of at risk, could have been offered up to four sessions (6th, 9th, 12th and 15th week). Attendance varied from 1 tutorial session attended to 34.

Table 7

Total Invited To vs. Total Attended

	Total Invited To	Total Attended
Math	121	246
Science	168	113
Total	289	359

Table 8 presents the ethnic, gender and class level make-up of those who attended the cross-age tutorial program, yet did not fit the mold of one invited. That mold being a seventy or below in their respective class. Ten students attended a tutorial session even though they were not considered at risk with a 70 or below.

Table 8

Make-Up of Those Who Attended Who Did Not Need To

Ethnicity	Total	Gender	Total	Level	Total
White	4	Males	4	Technical	
Black	3	Females	6	College Preparatory	7
Hispanic	1			Honors	
Multicultural	1			Gifted	4
Asian	1			Advanced Placement	
Other					
Totals	10		10		11

Statistical Analysis

Tables 1-8 represent the raw data organized of the 79 participants who chose to attend the free cross-age tutorial program. Tables 9-17 utilize chi square statistics to study whether disproportions exist between the ninth grade class as a whole and those invited to tutoring; and between those invited to tutoring and attended and those who attended tutoring within the ninth grade class. A contingency table and the Chi-square test were used to justify whether there is a disproportion between the ninth grade class and those invited to tutoring. Tables 9-11 present this.

Table 9 presents 418 total females and 452 total males compared with the number of students who were invited to tutorial sessions ($n = 207$) vs. not offered ($n = 663$). This comparison was within the total ninth grade population of Pinewood HS in fall 2007. Table 9 below presents the ratios of students who were offered a tutorial session and those who were not by groups of gender. 49.62% female and 50.38% male were not offered a tutorial session. There is no significant difference in gender (p -value = 0.096) between those who were offered a tutorial session and the overall ninth grade population.

Table 9

Group by Gender for Those Who Were Invited to a Tutorial Session and Those Who Were Not Offered a Tutorial Session

Group	Gender		Total
	Female	Male	
Tutorial session NOT offered	329 49.62%	334 50.38%	663
Tutorial session invited	89 43.00%	118 57.00%	207
	418 48.05%	452 51.95%	870

Note. Chi-square test statistic $Q = 2.776$ with 1 degree of freedom; and p -value = 0.096.

Table 10 presents an ethnic breakdown of tutorial sessions invited to compared with tutorial sessions not offered. This comparison was within the total ninth grade population of Pinewood HS in fall 2007. It shows there is a significant difference in ethnicity (p -value < 0.0001) between those who were offered a tutorial session and the overall ninth grade population.

Table 10

Group by Ethnicity for Those Who Were Invited to a Tutorial Session and Those Who Were Not Offered a Tutorial Session

Group	Ethnicity					Total
	A	B	H	M	W	
Tutorial session NOT offered	95 14.33%	94 14.18%	35 5.28%	21 3.17%	418 63.05%	663
Tutorial session invited	16 7.73%	64 30.92%	32 25.46%	3 1.45%	92 44.44%	207
Total	111 12.76%	158 18.16%	67 7.70%	24 2.76%	510 58.62%	870

Note. Chi-square test statistic $Q = 61.95$ with 4 degrees of freedom and p -value < 0.0001; A = Asian, B = Black, H = Hispanic, M = multiracial, W = White

Table 11 presents differences among those receiving and not receiving a free and reduced lunch with those invited to tutorial session ($n = 207$) compared with tutorial sessions not offered ($n = 663$). This comparison was within the total ninth grade population of Pinewood HS in fall 2007. It shows there exists a significant difference in socioeconomic status (p -value < 0.0001) between those who were offered a tutorial session and the overall ninth grade population.

Table 11

Group by Socioeconomic Status for Those Who Were Invited to a Tutorial Session and Those Who Were Not Offered a Tutorial Session

Group	SES		Total
	No F/R	F/R	
Tutorial session NOT offered	573	90	663
	86.43%	13.57%	
Tutorial session invited	148	59	20
	71.50%	28.50%	
Totals	721	149	870
	82.87%	17.13%	

Note. Chi-square test statistic $Q = 24.77$ with 1 degree of freedom and p -value < 0.0001 .

The contingency table and the Chi-square test were used to justify there is a disproportion in those offered tutoring and those who attended tutoring. Tables 12-14 present this information.

Table 12 presents 138 total male and female students who were invited to tutoring, but who did not attend compared with 69 tutorial sessions attended. This comparison was within the total ninth grade population of Pinewood HS in fall 2007. It lists the group by gender for those who were offered a tutorial session but did not attend and those who attended. There is no significant difference in gender (p -value = 0.620) between those who were offered a tutorial session and those who attended the tutoring session.

Table 12

Group by Gender for Those Who Were Invited to a Tutorial Session Who Did Not Attend and Those Who Attended a Tutorial Session

Group	Gender		Total
	Female	Male	
Invited to tutorial session but did not attend	61	77	138
	44.20%	55.80%	
Invited to tutorial session and attended	28	41	69
	40.58%	59.42%	
Total	89	188	207
	43.00%	57.00%	

Note. Chi-square test statistic $Q = 0.246$ with 1 degree of freedom and p -value = 0.620.

Table 13 presents the ethnicities of those students who were invited to a tutorial session compared with those ethnicities who chose not to attend. This comparison was within the total ninth grade population of Pinewood HS in fall 2007. It lists the group by ethnicity for those who were offered a tutorial session but did not attend and those who attended. There is no significant difference in ethnicity (p -value < 0.092) between those who were offered a tutorial session and those who attended the tutorial session.

Table 13

Group by Ethnicity for Those Who Were Invited to a Tutorial Session but Did Not Attend and Those Who Attended a Tutorial Session

Group	Ethnicity					Total
	A	B	H	M	W	
Invited to tutorial session but did not attend	10 7.25%	35 25.36%	22 15.94%	3 2.17%	68 49.28%	138
Attended tutorial session	6 8.70%	29 42.03%	10 14.49%	0 0.00%	24 34.78%	69
Total	16 7.73%	64 30.91%	32 15.46%	3 1.45%	92 44.44%	207

Note. Chi-square test statistic $Q = 7.99$ with 4 degrees of freedom and p -value < 0.092. A = Asian, B = Black, H = Hispanic, M = multiracial, W = White

Table 14 presents the differences among those receiving and not receiving a free and reduced lunch with those invited to a tutorial session but not attending ($n = 138$) compared with tutorial sessions attended ($n = 69$). This comparison was within the total ninth grade population of Pinewood HS in fall 2007. It lists the group by socioeconomic status (SES) for those who were offered a tutorial session but who did not attend and those who attended. There is no significant difference in socioeconomic status (p -value < 0.913) between those who were offered a tutorial session and did not attend and those who attended the tutorial session.

Table 14

Group by Socioeconomic Status for Those Who Were Invited to a Tutorial Session but Did Not Attend and Those Who Attended a Tutorial Session

Group	SES		Total
	No F/R	F/R	
Invited to tutorial session but did NOT attend	99 71.74%	39 28.26%	138
Attended tutorial session	49 71.01%	20 28.99%	69
Total	148 71.50%	59 28.50%	207

Note. Chi-square test statistic $Q = 0.01$ with 1 degree of freedom and p -value < 0.913 .

Here I use the contingency table and the Chi-square test to justify whether there is a disproportion in those who attended tutoring and the ninth grade class. Tables 15-17 present this information.

Table 15 presents gender differences with tutorial session not attended compared with tutorial sessions attended for males ($n = 452$) and females ($n = 418$). This comparison was within the total ninth grade population of Pinewood HS in fall 2007. It shows the frequency and percentage of different genders who attended a tutorial session and those who did not. There is no significant difference in gender (p -value = 0.196) between those who attended a tutorial session and the overall ninth grade population.

Table 15

Group by Gender for Those Who Attended a Tutorial Session and Those Who Did Not Attend a Tutorial Session in Ninth Grade Class

Group	Gender		Total
	Female	Male	
Did NOT attend tutorial session	390 48.69%	411 51.31%	801
Attended tutorial session	28 40.58%	41 59.42%	69
Total	418 48.05%	452 51.95%	870

Note. Chi-square test statistic $Q = 1.67$ with 1 degree of freedom; and p -value=0.196.

Table 16 presents the tutorial sessions offered to ethnicities compared with those who attended the tutorial sessions. This comparison was within the total ninth grade population of Pinewood HS in fall 2007. It shows the frequency and percentage for groups of ethnicity who attended a tutorial session and those who did not. There is a significant difference in ethnicity (p -value < 0.0001) between those who attended a tutorial session and the overall ninth grade population.

Table 16

Group by Ethnicity for Those Who Attended a Tutorial Session and Those Who Did Not Attend a Tutorial Session in Ninth Grade Class

Group	Ethnicity					Total
	A	B	H	M	W	
Tutorial session NOT attended	105 13.11%	129 16.10%	57 7.12%	24 3.00%	486 60.67%	801
Tutorial session attended	6 8.70%	29 42.03%	10 14.49%	0 0.00%	24 34.78%	69
Total	111 12.76%	158 18.16%	67 7.70%	24 2.76	510 58.62%	870

Note. Chi-square test statistic $Q = 38.30$ with 4 degrees of freedom and p -value < 0.0001. A = Asian, B = Black, H = Hispanic, M = multiracial, W = White

Table 17 presents tutorial session attended and not attended by those qualifying for free and/or reduced lunch. This comparison was within the total ninth grade population of Pinewood HS in fall 2007. It shows the frequency and percentage for groups by socioeconomic status (SES) who attended a tutorial session and those who did not. There is significant difference in socioeconomic status (p -value < 0.006) between those who attended a tutorial session and the overall ninth grade population.

Table 17

Group by Socioeconomic Status for Those Who Attended a Tutorial Session and Those Who Did Not Attend a Tutorial Session in Ninth Grade Class

Group	SES		Total
	No F/R	F/R	
Tutorial session NOT attended	672 83.90%	129 16.10%	801
Tutorial session attended	49 71.01%	20 28.99%	69
Total	721 82.87%	149 17.13%	870

Note. Chi-square test statistic $Q = 7.43$ with 1 degree of freedom and p -value < 0.006.

Phase Two Evaluation: Process Evaluation

Indicator 2: Research Question 2

Why did some invitees not attend?

According to Cohen et al. (1982) and Bernard (1990), students chose to attend or not attend various after-school activities for different reasons. Between family obligations, jobs, lack of rides, and/or choice students sometimes do not go to functions that can potentially enhance their education (Bernard, 1990; Cohen et al., 1982; House & Wohlt, 1991; Johnson & Johnson,

1992; Stufflebeam & Shinkfield, 2007). Over a 2-week period 100 ($n = 100$) math or science at-risk students were called into the researcher's office and asked to be participants in a survey. This equal number of men ($n = 50$) and women ($n = 50$) were not selected using proportional allocation. The first 50 female and male names were asked to participate. Differentiating stratum was not logistically possible as over 500 different students were considered at risk at one time. Consent forms were sent home before the questionnaire could be administered. Of the 31 parental consent forms returned, 25 gave approval. Configurations of the untutored population are summarized in Tables 19-31 (Joint Committee, 2003; Merriman, 1998; Stufflebeam & Shinkfield, 2007; Yin, 2003).

Table 18 represents the number of parent consent forms signed and returned and not returned signed. Sixty-nine did not return one while 31 did, with 25 parents agreeing to allow their child to be participants.

Table 18

Sample of Untutored Population

	$n = 100$	%
Consent Forms	100	100%
Returned Yes	25	25%
Returned No	6	6%
Not Returned	69	69%
Totals	31	100%

Table 19 represents the age differential of those who were participants. Ninety-nine were 14 or 15 years of age.

Table 19

Age of Untutored Population

Age	<i>n</i> = 25	%
13	0	0%
14	2	12.0%
15	21	87.5%
16	1	>.5%
Blank	1	> .5%
Totals	25	100%

Table 20 represents the relationship of participants with their ethnicity. More than half were White.

Table 20

Ethnicity of Untutored Population

Ethnicity	<i>n</i> = 25	%
White	13	52%
Black	6	24%
Hispanic	4	16%
Asian	0	0%
Native American	0	0%
Multiracial	2	8%
Totals	25	100%

Table 21 represents a gender breakdown of participants. Males and females were close to being equal with 13 and 12, respectively.

Table 21

Gender of Untutored Population

Gender	<i>n</i> = 25	%
Female	13	52%
Male	12	48%
Totals	25	100%

Note. The number in parentheses represents their numerical correspondence.

The sample consisted of those students who refused tutoring during either the 6th, 9th, 12th, or 15th week. The purpose was to find out why the students chose not to attend a free after-school cross-age tutorial session known as the Freshman Academy. Tables 22-30 present the students' responses to these questions.

Question 1. Do you feel tutoring was something you wanted to attend?

Table 22 represents the gender and ethnic breakdown of those tutees who wanted to attend tutoring for various reasons. Tables 22-30 represent the domain analysis of responses.

Table 22 presents 12 (48%) who said no while 12 (48%) said yes and 1 (2%) replied with sometimes. Their responses were represented via charts displaying common and different domains. These domains represent the output of their responses organized quantitatively.

Table 22

Those Who Wanted to Attend Tutoring

Gender	Yes	No	Sometimes
Female	5	7	1
Male	7	5	NA
Ethnicity			
White	3/1female;5/male	3/female;3/male	NA
Black	1/female;1/male	3/female;1/male	NA
Hispanic	1/female;1/male	1/female;1/male	NA
Asian	NA	NA	NA
Native American	NA	NA	NA
Multiracial	NA	NA	1/multiracial
	<i>n</i> = 25		

Note. / represents number of: 3/1 = three (3) females (1) said yes.

Table 23 presents 21 (84%) students who chose not to attend for various reasons while 4 (16%) could not attend because of after-school responsibilities. These domains represent the output of their responses organized quantitatively.

Table 23

Reasons for Not Attending

Choosing Not To Attend	Total	After-School Responsibility	Total
Felt dumb	4	Work	1
Does not need it	2	Other plans	1
Rather do it on our own	4	Own tutor	2
Tutoring won't help	1		
Did not want to attend	9		
Depends on mood	1		
Total	21		4
	<i>N</i> = 25		

Question 2. Are you involved in extracurricular activities at Pinewood High School?

Table 24 presents 17 (68%) students who chose not to participate for various reasons while 8 (32%) were involved with extracurricular activities. Of the 25 students who responded to my survey, only 8 were involved in extracurricular activities. Extracurricular is defined as anything done, above and beyond the classroom classes, which has routine meeting dates and times. Examples include, but are not limited to, football team, debate team, key club, or Honor Society. Ironically those who were involved were all in different activities. These domains represent the output of their responses organized quantitatively.

Table 24

Participants in Extracurricular Activities at Pinewood High School

Activity		Gender	Ethnicity
Drama	1	Female	Hispanic
Band	1	Male	Hispanic
Chorus	1	Female	Hispanic
Wrestling	1	Male	White
Fellowship of Christian Athletes	1	Female	White
Football	1	Male	White
Young life	1	Female	White
Step team	1	Female	Black
No Activity	17	8/female, 9/male	9/White, 5/Black, 1/Hispanic, 2/multiracial
Total	<i>n</i> = 25		

Question 3. Are you involved in extracurricular activities outside of school?

Table 25 presents 10 (40%) students who chose not to participate for reasons other than specific extracurricular activities while 15 (60%) were involved in some activity outside of Pinewood. These domains represent the output of their responses organized quantitatively.

Table 25

Specific Extracurricular Activity Outside of Pinewood High School

Activity		Gender	Ethnicity
Football	1	male	Hispanic
Hunting/Fishing	2	male /female	White/White
Basketball	1	male	Black
Church	1	male	White
Cheerleading	2	female	Black/White
Hockey	1	male	White
Paintball	1	male	White
Jam Skating	1	male	White
Dance	1	female	Black
Volunteer	1	female	White

(table continues)

Activity		Gender	Ethnicity
Baseball	1	male	Black
Soccer	2	female/male	multiracial/Hispanic
No Activity	10	7/female, 3/male	5/White, 2/Black, 2/Hispanic, 1/multiracial

Note. n = 25.

Table 26 presents 15 (60%) students who said they were involved in an extracurricular activity outside of school; however, not all are considered activities. They are considered programs. Extracurricular is defined as anything other than a job, which has routine meeting dates and times, in which they are involved.

Table 26

Specific Extracurricular Activity vs. Non-Extracurricular Activity Outside of Pinewood High School

Extracurricular Activity		Non-Extracurricular Activity	
Basketball	1	Jam Skating	1
Cheerleading	2	Paintball	1
Hockey	1	Church	1
Baseball	1	Hunting/Fishing	2
Soccer	2	Volunteer	1
Football	1	Dance	1
Total	8	Total	7

Note. n = 25.

Question 4. Why did you not to attend tutoring?

Table 27 presents 15 (60%) students who gave specific reasons for not attending. Seven (28%) had reasons as to what they chose not to attend. Three (12%) misread the question.

Table 27

Reasons why Students Choose Not to Attend

Reason	Total	No Reason	Total
Ownership	7	Chose not to	7
Family Responsibility	6		
Tutoring Elsewhere	2		
		Misread question	3
Total	15		10

Note. n = 25.

Question 5. Do you work after school (paid or not)? If so, doing what/where?

Table 28 illustrates that more than half (16 = 64%) of the students had no work responsibilities, while 8 (32%) claimed to have work with and without pay. Results of specific after-school accountability are summarized in Table 29 (Joint Committee, 2003; Merriman, 1998; Stufflebeam & Shinkfield, 2007; Yin, 2003). These domains represent the output of their responses organized quantitatively.

Table 28

Specific After-School Accountability

Accountability		Gender	Ethnicity
Chores	2	2/female	White
Cook (not at home)	1	Female	Hispanic
Cut Lawn	1	2/male	White
Cheerleading	1	Female	White
Cut Hair	1	Female	Multiracial
Bass Pro Shop	1	Male	White
Does not say	1	Female	Multiracial
Left Blank	1	Female	Hispanic
No Accountability	16	7/female, 9/male	8/White, 6/Black, 2/Hispanic, 0/multiracial

Note. n = 25.

Question 6. Do you receive any type of tutoring and/or mentoring after school)? If so, what and where?

Results of specific tutoring or after-school mentoring are summarized in Table 29 (Joint Committee, 2003; Merriman, 1998; Stufflebeam & Shinkfield, 2007; Yin, 2003). Of the 25 students who responded, many (19 = 76%) did not receive any type of tutoring or mentoring whatsoever. Some (2 = 8%) were able to seek out their teacher while 4 (16%) were serviced at home via a tutor, parent, or sister.

Table 29

After-School Tutoring or Mentoring

Tutoring/Mentoring		Gender	Ethnicity
Parents	1	Male	White
Sister	1	Female	Black
Tutor	2	2/male	1/White
Teacher	2	1/female	1/Black
			9/White, 4/Black
None	19	10/female, 9/male	2/multiracial

Note. $n = 25$.

Question 7. Feel free to add any comments, concerns or suggestions about the Freshman Academy.

Table 30 presents feedback from those participants. Of the 25 respondents 9 (36%) gave a specific type of feedback, 2 (22%) simply said thanks, and 3 (33%) claimed tutoring is good. Two (22%) felt tutoring was too strict and 2 (22%) suggested different availability for tutoring.

Table 30

Comments, Concerns, or Suggestions

Positive Comments		Negative Comments	
Thanks	2	Too strict	2
Tutoring is good	3		
Suggestions			
More availability	2		
Totals	7		2

Phase Two Evaluation: Outcomes Evaluation

Indicator 3: Research Question 3

3. What are the best predictors of successfully passing a class?

A regression analysis was used to analyze a student grade at the 9th week as a predictor of success. Grade at the 9th week was the dependent variable, and SES, gender, and ethnicity was the independent variable. It is important to note that when the grade at the 9th week is treated as a dependent variable, the number of attendance, which happened after the 9th week, is not treated as an independent variable which may affect the grade at the 9th week. Before performing multivariate analysis, a univariate analysis was conducted to check whether a predictor had significant impact on the dependent variable. A multivariate regression was then utilized, as using a single predictor was not sufficient enough and multivariate analysis takes into account several variables simultaneously for better accuracy. The independent variables gender (female or male) and socioeconomic status (whether there is F/R Lunch) are binary variables. The nonparametric Wilcoxon signed-rank test (also called Mann-Whitney-Wilcoxon Rank-sum test) was then used to check whether they have significant impact on the grade at the 9th week. The independent variable ethnicity (White, Black, Hispanic, Multiracial, Asian, Other) is a categorical variable. The nonparametric one-way analysis of variance (ANOVA) method was

used to check whether an independent variable has significant impact on the grade at the 9th week.

The reason for using the nonparametric Wilcoxon signed-rank test or nonparametric one-way analysis of variance (ANOVA) method instead of the parametric two-sample t test or standard parametric analysis of variance (ANOVA) method is that the latter one assumes that the data in each group follow a normal distribution (i.e., the grade at the 9th week follows a normal distribution in each gender group).

Table 31 presents the p -value for our independent variables of gender, socioeconomic status, and ethnicity with a specific method of test. Table 31 lists the p -values of the univariate analysis for gender, SES, and ethnicity and correspondence method of tests. Under 0.10 level of significance, SES and gender are significant (p -value=0.066 and 0.083, respectively). However, ethnicity is not significant.

Table 31

P Values of the Univariate Analysis for Gender, Socioeconomic Status, and Ethnicity

Independent Variable	p -value	Method of test
Gender	0.083	Wilcoxon signed-rank test
SES	0.066	Wilcoxon signed-rank test
Ethnicity	0.465	Kruska-Wallis test for one-way ANOVA

Figure 1 presents the proportional breakdown of males and females grade at the 9th week on x axis with its frequency percentage on the y axis. It describes the grades of male and female at the 9th week, respectively. The distributions of the grade at 9th week in both male and female groups are far away from the normal. This is an auxiliary figure to show that the distribution is non-normal, so that we have to use non-parametric method.

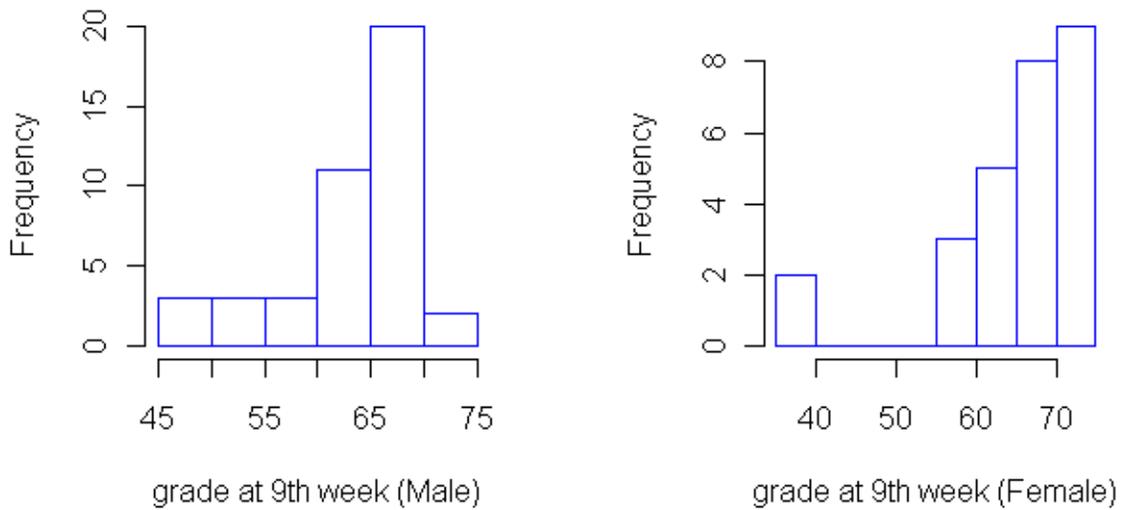


Figure 1. Histograms of the grade at the 9th week in male and female groups.

Figure 2 presents the proportional breakdown of those who obtain a free and reduced lunch with those who do not receive a free and reduced lunch at the 9th week on x axis with its frequency percentage on the y axis. It describes the grades in F/R lunch and no F/R/ lunch groups at the 9th week, respectively. The distributions are far away from the normal. This is an auxiliary figure to show that the distribution is non-normal, so that we have to use non-parametric method.

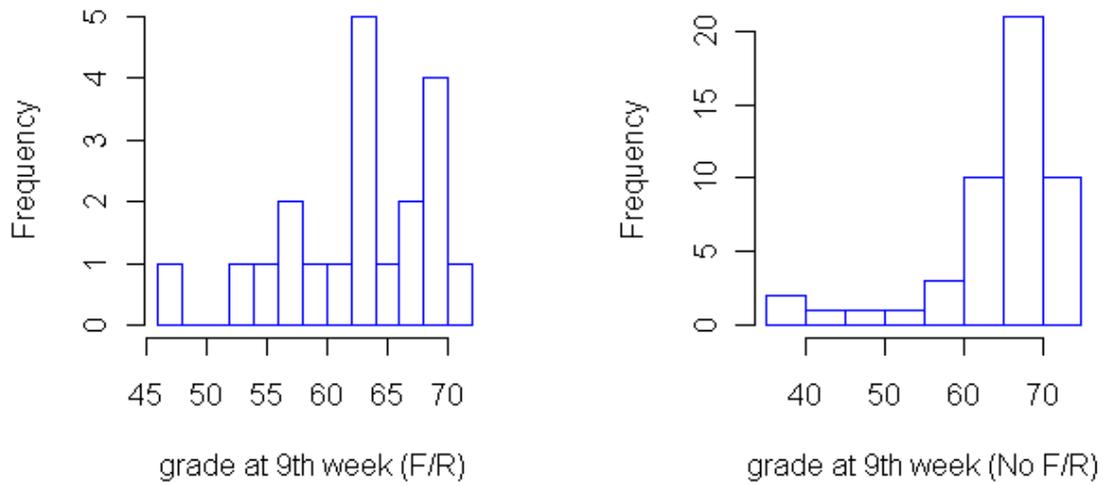


Figure 2. Histograms of the grade at the 9th week in F/R lunch and no F/R lunch groups.

Figure 3 presents the proportional breakdown of the 9th grade White group compared with the Black group at the 9th week on x axis with its frequency percentage on the y axis. It describes the grades of White and Black groups at the 9th week, respectively. The distributions are far away from the normal. This is an auxiliary figure to show that the distribution is non-normal, so that we have to use non-parametric method.

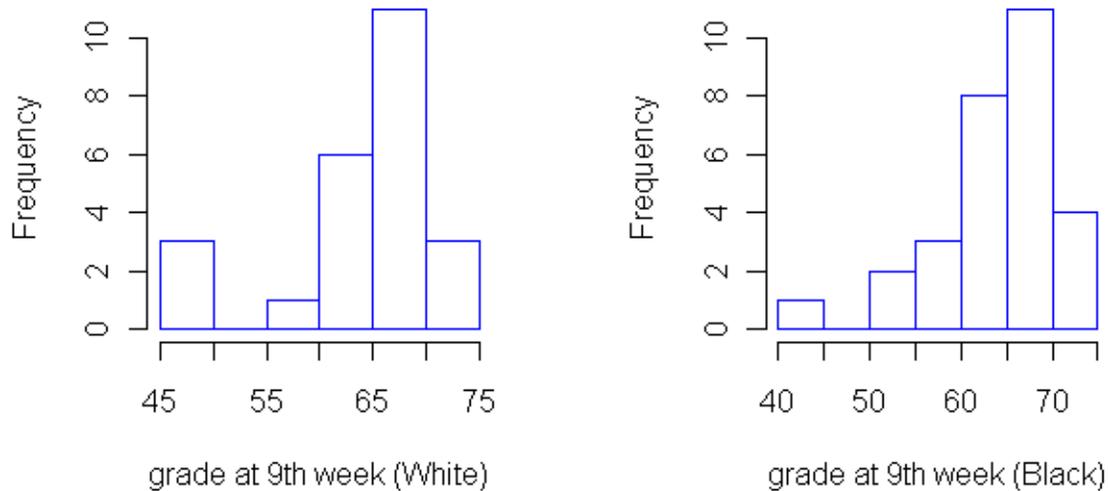


Figure 3. Histograms of the grade at the 9th week in White and Black groups.

Table 31 summarized the p -values of our univariate analysis for gender, SES, and ethnicity. All three predictors are not significant under the level 0.05; however, gender and SES are significant under the level 0.10. I chose these two as the predictors in our multivariate analysis model. However, this assumption is violated in our dataset. If we look at the histograms of the grade at the 9th week in male and female groups in Figure 1, we find that the distributions of the grade at 9th week in both male and female groups are far away from the normal. A similar situation exists when one looks at the distribution of the grade at 9th week in SES group or ethnicity group (Figures 2 and 3); therefore, I used the nonparametric Wilcoxon signed-rank test or nonparametric one-way analysis of variance (ANOVA) method, which does not impose the normal distribution assumption. Our statistical model is represented by the following:

$$Grade = \beta_0 + \beta_1 Gender + \beta_2 SES + error$$

Based on the univariate analysis results, gender and SES are adopted as two explanatory variables in the multiple regression model. It is important to note that there are some outliers in the distribution of the dependent variable (i.e., the grade at the 9th week) then the robust regression procedure was used to do the regression analysis. The parameter estimation results are displayed in Table 32. Although the effect SES on the dependent variable is significant (p -value < 0.10), the overall goodness-of-fit of the model is not good ($R^2 = 0.081$). R^2 , which lies between 0 and 1, is a measure of the global fit of the model. A well fitted model should have a R^2 close to 1. The most possible reason for not having a well-fitted model is that the independent variables are all categorical but the dependent variable is continuous. As a result I may not use these independent variables to predict the grade at the 9th week.

Table 32 presents the parametric estimates compared degrees of freedom, estimation, standard error, confidence limits with the p -value ($Pr > ChiSq$) and Wald Chi-square statistic. It shows the parameter estimation results for regression analysis of the grade at the 9th week. The effects of both gender and SES on the dependent variable are significant (p -value < 0.05). Ethnicity is not significant. Parameter estimations approximate the unknown outliers to help justify the dependant variables.

Table 32

Parameter Estimation Results for Regression Analysis of the Grade at the 9th Week

Parameter	DF	Parameter Estimates				Chi-Square	Pr > ChiSq
		Estimate	Standard Error	95% Confidence Limits			
Intercept [β_0]	1	64.1654	2.0435	60.1602	68.1706	985.94	<.0001
Gender [β_1]	1	2.3187	1.3270	-0.2821	4.9196	3.05	0.0806
SES [β_2]	1	-3.5212	1.4275	-6.3190	-0.7234	6.08	0.0136

Regression analysis was used to analyze a student’s final grade as a predictor of success. Final grade is used as a dependent variable, and SES, gender, ethnicity, number attended, and the grade at 9th week as independent variables. It is important to note then when the final grade is greater than 70, it is defined as a success; therefore, we have a dependent variable which is binary (success or not).

A regression analysis was utilized to try to predict relationships among a dependent variable with one or more independent variables. A multivariate regression was then utilized, as using a single predictor is not sufficient enough and multivariate analysis takes into account several variables simultaneously for better accuracy.

Before performing multivariate analysis, the univariate analysis was first conducted. For independent variables which are categorical, the contingency table method was used to see whether they had a significant impact on the binary dependent variable. For continuous independent variables, I used the nonparametric Wilcoxon signed-rank test to justify their influence.

Table 33 presents the independent variable analysis along with its p -value and test used. It lists the p -values of the univariate analysis for gender, SES, ethnicity, total attendance, and grade at 9th week, and correspondence method of tests. Under 0.05 level of significance, SES, ethnicity, and grade at 9th week are significant (p -value = 0.05, 0.05, and 0.002, respectively). However, gender and total attendance are not significant.

Table 33

P Values of the Univariate Analysis for Gender, SES, Ethnicity, Total Attendance, and Grade at 9th Week

Independent Variable	P value	Method of test
Gender	0.600	Chi-square test
SES	0.050	Chi-square test
Ethnicity	0.053	Chi-square test
Total Attendance	0.777	Wilcoxon signed-rank test
Grade at 9th week	0.002	Wilcoxon signed-rank test

After conducting a univariate analysis a multivariate analysis for success was then conducted in final class grade. The statistical model is represented by the following:

$$\text{logit}(\text{Success}) = \beta_0 + \beta_1 \text{SES} + \beta_2 \text{Ethnicity} + \beta_3 \text{Grade at 9th week} + \text{error}$$

Logistic regression was used to evaluate the effects of the independent variables on the final success, and the model includes the independent variables whose effects are significant or close to significant level in the univariate analysis.

Table 34 presents the type 3 analysis of the effect for each predictor of SES, ethnicity, and grade at the 9th week. Table 34 summarize the type 3 analysis of the effect for each predictor, from which it was found that the grade at 9th week is the most significant predictor on

final success (p -value = 0.028). The other two predictors have significant effects at the level 0.10.

Table 34

Type 3 Analysis of Effects

Type 3 Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq
SES	1	3.2316	0.0722
Ethnicity	3	6.5233	0.0887
Grade at Week9	1	4.8209	0.0281

Table 35 summarizes the parameter estimation results for each independent variable, including point estimate, standard error, and p -value. For the categorical variable SES, the category free or reduced lunch is set as baseline in the model. For the categorical variable ethnicity, the category Black is set as baseline in the model.

Table 35

Parameter Estimation Results Regression Analysis of the Final Grade

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-9.2378	3.9379	5.5030	0.0190
SES	No f/r	1	0.8132	0.4523	3.2316	0.0722
Ethnicity	White	1	-0.3466	0.5206	0.4433	0.5055
Ethnicity	Asian	1	1.7918	0.8885	4.0667	0.0437
Ethnicity	Hispan	1	-0.1914	0.6376	0.0901	0.7640
Week9		1	0.1296	0.0590	4.8209	0.0281

Table 36 presents the effects of independent variables compared with point estimate and Wald confidence limits. The effects of these independent variables are much easier to be interpreted in terms of odds ratio estimates in Table 36. For example, given other effects are the same, the odds of being success for a student is about 1.138 times the odds of a student with a grade at 9th week a unit lower. The 95% confidence interval for this relationship is 1.014, 1.278.

Table 36

Odds Ratio Estimates

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
SES 0 vs 1	5.085	0.863	29.949
ethnicity White vs Black	2.477	0.631	9.728
ethnicity Asian vs Black	21.020	1.829	241.514
ethnicity Hispan vs Black	2.893	0.489	17.120
Week9	1.138	1.014	1.278

Phase Two Evaluation: Outcomes Evaluation

Indicator 4: Research Question 4

4. Are there differences in attitudes towards the tutorial program between White and Black students and between boys and girls?

The second phase of the quantitative portion is the results of a Likert-type scale questionnaire. Appendix D represents the participants' response to each question, while

Appendix F numerically summarizes those responses. Correlations that emerged were analyzed (Joint Committee, 2003; Stufflebeam & Shinkfield, 2007) by way of a contingency table analysis. Did differences, if any, exist within the attitudes of ethnic and gender groups with regard to motivation? Data consisted of 79 ($n = 79$) students who qualified as participants and therefore attended at least one tutorial session in fall 2007. Fifty ($n = 50$) students qualified as participants. To be considered part of the tutored population, students had to have accepted tutoring at least one time during the 6th, 9th, 12th, or 15th week. Consent forms were sent home before a questionnaire could be administered. Of the 52 parental consent forms returned, 50 gave approval.

Questions were asked about motivation, growth as a student, attitude towards subject matter, connection with tutors, and gains in communication skills (see Appendix E).

Table 37 represents the number of consent forms signed and returned by parents and not returned signed. Twenty-three did not return one while 56 did, with 50 parents agreeing to allow their child to be participants.

Table 37

Sample of Tutored Population

Consent Forms	$N = 79$	%
Returned Yes	50	63%
Returned No	6	8%
Not Returned	23	29%
Totals	79	100%

Table 38 represents the age differential of participants. Ninety-six percent were 14 or 15 years old.

Table 38

Age of Tutored Population

Age	<i>n</i> = 50	%
13	0	0%
14	14	28%
15	34	68%
16	2	4%
Totals	50	100%

Table 39 represents the relationship of participants with their ethnicity. Twenty-two were White students, which was almost half (*n* = 50) of the participants.

Table 39

Ethnicity of Tutored Population

Ethnicity	<i>n</i> = 50	%
White	22	44%
Black	17	34%
Hispanic	3	6%
Asian	5	10%
Native American	0	0%
Multiracial	3	6%
Totals	50	100%

Table 40 represents a gender breakdown of participants. An equal number of men and women were participants.

Table 40

Gender of Tutored Population

Gender	<i>n</i> = 50	%
Female	25	50%
Male	25	50%
Totals	50	100%

An appropriate way to analyze the responses to the Likert-type scale questionnaire (see Appendix C) was to use a contingency table analysis. The row variable of contingency Tables 41-56 is categories in gender or ethnicity, and the column variable is the five ordinal response levels of the survey questions. The cell in row *i* and column *j* represented the frequency that participants in the *i*th category of gender or ethnicity choose the *j*th response level for a survey question. The letters *i* and *j* are variables that represent a specific row and column where they were given specific values.

Given the fact that the contingency tables here are all nominal-ordinal tables, the most appropriate test to detect whether or not significant differences exist between the attitudes of gender and ethnic groups with regard to the surveyed questions was the Cochran-Mantel-Haenszel (CMH) test, with the null hypothesis that no significant difference exists between row mean scores and an alternative hypothesis that there is a significant difference between row mean scores.

Tables 41-48 are the contingency tables for ethnic groups. Specifically Black (17 students) and White (22 students) compared to all others (11 students) as Hispanic, Asian, Native American, and Multiracial do not represent enough individually.

Table 41 has no significant differences (p -value = 0.476) among ethnicities as 38 (76%) participants either *strongly agree* or *agree* that tutoring helped them do better in their math or science class.

Table 41

Frequency and Row Percentage of the Response to Question 1 by Black, White, and Other Ethnic Groups

Question 1: Tutoring helped me feel like I can do better in math and/or science						
Ethnicity	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree	Total
Black	1 (5.88%)	12 (70.6%)	0 (0%)	4 (23.53%)	0 (0%)	17 (100%)
White	5 (22.73%)	12 (54.6%)	2 (9.09%)	2 (9.09%)	1 (4.55%)	22 (100%)
Others	5 (45.45%)	3 (27.27%)	0 (0%)	2 (18.18%)	1 (9.09%)	11 (100%)

Table 42 has no significant differences (p -value = 0.241) among ethnicities as 31 (62%) participants either *strongly agree* or *agree* that tutoring gave them motivation to pass class.

Table 42

Frequency and Row Percentage of the Response to Question 2 by Black, White, and Other Ethnic Groups

Question 2: Tutoring helped give me the motivation to want to pass.						
Ethnicity	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree	Total
Black	6 (5.88%)	5 (70.6%)	4 (0%)	2(23.53%)	0 (0%)	17 (100%)
White	2 (9.09%)	11 (50%)	6 (27.27%)	2 (9.09%)	1 (4.55%)	22 (100%)
Others	3 (27.27%)	4 (36.36%)	2 (18.18%)	1 (9.09%)	1 (9.09%)	11 (100%)

Table 43 has no significant differences (p -value = 0.735) among ethnicities as 36 (72%) participants either *strongly agree* or *agree* that tutoring helped them grow as a student.

Table 43

Frequency and Row Percentage of the Response to Question 3 by Black, White, and Other Ethnic Groups

Question 3: Tutoring helped me grow academically as a student.						
Ethnicity	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree	Total
Black	5 (29.41%)	7 (41.18%)	1 (5.88%)	4(23.53%)	0 (0%)	17 (100%)
White	5 (22.73%)	10(45.45%)	3(13.64%)	2 (9.09%)	2 (9.09%)	22 (100%)
Others	3 (27.27%)	6 (54.55%)	0 (0%)	2(18.18%)	0 (0%)	11 (100%)

Table 44 has no significant differences (p -value = 0.562) among ethnicities as 33 (66%) participants either *strongly agree* or *agree* that tutoring positively affects the way they see subject matter.

Table 44

Frequency and Row Percentage of the Response to Question 4 by Black, White, and Other Ethnic Groups

Statement 4: Tutoring positively affects the way I see subject matter.						
Ethnicity	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree	Total
Black	4 (23.53%)	8 (47.06%)	3(17.65%)	2(11.76%)	0 (0%)	17 (100%)
White	3 (13.64%)	12(54.55%)	5(22.73%)	0 (0%)	2 (9.09%)	22 (100%)
Others	2 (18.18%)	4(36.36%)	3(27.27%)	2(18.18%)	0 (0%)	11 (100%)

Table 45 has no significant differences (p -value = 0.250) among ethnicities as 38 (76%) participants either *strongly agree* or *agree* that tutoring sessions were/are beneficial to them.

Table 45

Frequency and Row Percentage of the Response to Question 5 by Black, White, and Other Ethnic Groups

Question 5: Smaller tutoring sessions were/are beneficial to me.						
Ethnicity	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree	Total
		4	1			17
Black	10 (58.82%)	(23.53%)	(5.88%)	1 (5.88%)	1 (5.88%)	(100%)
		9	2			22
White	7 (31.82%)	(40.91%)	(9.09%)	2 (9.09%)	2 (9.09%)	(100%)
		5	1	2		11
Others	3 (27.27%)	(45.45%)	(9.09%)	(18.18%)	0 (0%)	(100%)

Table 46 has no significant differences (p -value = 0.585) among ethnicities as 29 (58%) participants either *strongly agree* or *agree* that their tutor were interested in them passing their class. Ten (20%), however, did not *agree* or *disagree*.

Table 46

Frequency and Row Percentage of the Response to Question 6 by Black, White, and Other Ethnic Groups

Question 6: I felt the tutors were interested in me passing my class.						
Ethnicity	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree	Total
Black	3 (17.65%)	7 (41.18%)	4 (23.53%)	3 (17.65%)	0 (0%)	17 (100%)
White	6 (27.27%)	6 (27.27%)	4 (18.18%)	2 (9.09%)	4 (18.18%)	22 (100%)
Others	2 (18.18%)	5 (45.45%)	2 (18.18%)	2 (18.18%)	0 (0%)	11 (100%)

Table 47 has significant differences (p -value = 0.0555) among ethnicities as 22 (44%) participants either *strongly agree* or *agree* that the relationship with their tutor was better than their teacher, specifically, 11 (65%) Black students and 7 (32%) Whites.

Table 47

Frequency and Row Percentage of the Response to Question 7 by Black, White, and Other Ethnic Groups

Question 7: My tutor and I relate better than my teacher and I.						
Ethnicity	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree	Total
Black	3 (17.65%)	8 (47.06%)	4 (23.53%)	1 (5.88%)	1 (5.88%)	17 (100%)
White	1 (4.55%)	6 (27.27%)	9 (40.91%)	3(13.64%)	3 (13.64%)	22 (100%)
Others	2 (18.18%)	2 (18.18%)	4 (36.36%)	3(27.27%)	0 (0%)	11 (100%)

Table 48 has no significant differences (p -value = 0.2555) among ethnicities as 22 (44%) participants either *strongly agree* or *agree* that tutoring enhances their communication skills with others. In addition, 16 (32%) *disagree* or *strongly disagree*.

Table 48

Frequency and Row Percentage of the Response to Question 8 by Black, White, and Other Ethnic Groups

Question 8: Tutoring enhanced my communication skills with others.						
Ethnicity	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree	Total
Black	3 (17.65%)	5(29.41%)	5(29.41%)	4(23.53%)	0 (0%)	17 (100%)
White	2 (9.09%)	6(27.27%)	6(27.27%)	6(27.27%)	2 (9.09%)	22 (100%)
Others	5 (45.45%)	1 (9.09%)	1 (9.09%)	4(36.36%)	0 (0%)	11 (100%)

Tables 49-56 are the contingency tables for gender groups. Gender groups are represented by male and female, respectively.

Table 49 has no significant differences (p -value = 0.522) among genders as 38 (76%) participants either *strongly agree* or *agree* that tutoring helped them do better in their math or science class.

Table 49

Frequency and Row Percentage of the Response to Question 1 by Different Gender Groups

Question 2: Tutoring helped me feel like I can do better in math and/or science.						
Gender	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree	Total
Female	5 (20%)	13 (52%)	1 (4%)	5 (20%)	1 (4%)	25 (100%)
Male	6 (24%)	14 (56%)	1 (4%)	3 (12%)	1 (4%)	25 (100%)

Table 50 has no significant differences (p -value = 0.894) among genders as 31 (62%) participants either *strongly agree* or *agree* that tutoring helped give them the motivation to want to pass.

Table 50

Frequency and Row Percentage of the Response to Question 2 by Different Gender Groups

Question 2: Tutoring helped give me the motivation to want to pass .						
Gender	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree	Total
Female	6 (24%)	11 (44%)	3 (12%)	4 (16%)	1 (4%)	25 (100%)
Male	5 (20%)	9 (36%)	9 (36%)	1 (4%)	1 (4%)	25 (100%)

Table 51 has no significant differences (p -value = 0.710) among genders as 36 (72%) participants either *strongly agree* or *agree* that tutoring helped them grow academically as a student.

Table 51

Frequency and Row Percentage of the Response to Question 3 by Different Gender Groups

Question 3: Tutoring helped me grow academically as a student.						
Gender	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree	Total
Female	6 (24%)	11 (44%)	3 (12%)	4 (16%)	1 (4%)	25 (100%)
Male	7 (28%)	12 (48%)	1 (4%)	4 (16%)	1 (4%)	25 (100%)

Table 52 has no significant differences (p -value = 0.571) among genders as 33 (66%) participants either *strongly agree* or *agree* that tutoring positively affects the way they see subject matter.

Table 52

Frequency and Row Percentage of the Response to Question 4 by Different Gender Groups

Question 4: Tutoring positively affects the way I see subject matter.						
Gender	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree	Total
Female	5 (20%)	12 (48%)	5 (20%)	3 (12%)	0 (0%)	25 (100%)
Male	4 (16%)	12 (48%)	6 (24%)	1 (4%)	2 (8 %)	25 (100%)

Table 53 has no significant differences (p -value = 0.196) among genders as 38 (76%) participants either *strongly agree* or *agree* that smaller tutorial sessions were/are beneficial to them.

Table 53

Frequency and Row Percentage of the Response to Question 5 by Different Gender Groups

Question 5: Smaller tutoring sessions were/are beneficial to me.						
Gender	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree	Total
Female	13 (52%)	7 (28%)	1 (4%)	4 (16%)	0 (0%)	25 (100%)
Male	7 (28%)	11 (44%)	3 (12%)	1 (4%)	3 (12%)	25 (100%)

Table 54 has significant differences (p -value = 0.081) among genders as 21 (42%) participants either *strongly agree* or *agree* that their tutors were interested in them passing class; however, 11 females (22%) felt so compared to 18 males (36%). Ten (20%) chose neither *strongly agree*, *agree*, *disagree* or *strongly disagree*, specifically 6 (12%) females compared to 4 (8%) males.

Table 54

Frequency and Row Percentage of the Response to Question 6 by Different Gender Groups

Question 6: I felt the tutors were interested in me passing my classes.						
Gender	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree	Total
Female	4 (16%)	7 (28%)	6 (24%)	6 (24%)	2 (8%)	25 (100%)
Male	7 (28%)	11 (44%)	4 (16%)	1 (4%)	2 (8%)	25 (100%)

Table 55 has no significant differences (p -value = 0.898) among genders as 22 (44%) participants either *strongly agree* or *agree* that they relate better to their tutor than teacher. Seventeen (34%) chose neither *strongly agree*, *agree*, *disagree*, or *strongly disagree*.

Table 55

Frequency and Row Percentage of the Response to Question 7 by Different Gender Groups

Question 7: My tutor and I relate better than my teacher and I.						
Gender	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree	Total
Female	3 (12%)	9 (36%)	5 (20%)	7 (28%)	1 (4%)	25 (100%)
Male	3 (12%)	7 (28%)	12 (48%)	0 (0%)	3 (12%)	25 (100%)

Table 56 has no significant differences (p -value = 0.344) among genders as 22 (44%) participants either *strongly agree* or *agree* that tutoring enhanced their communication skills with others. Twelve (24%) chose neither *strongly agree*, *agree*, *disagree*, or *strongly disagree*.

Table 56

Frequency and Row Percentage of the Response to Question 8 by Different Gender Groups

Question 8: Tutoring enhanced my communication skills with others.						
Gender	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree	Total
Female	4 (16%)	5 (20%)	6 (24%)	10 (40%)	0 (0%)	25 (100%)
Male	6 (24%)	7 (28%)	6 (24%)	4 (16%)	2 (8%)	25 (100%)

With data in Table 47 and Table 54 discrepant, the specific numbers were then analyzed with the Cochran-Mantel-Haenszel test statistic to decide whether or not significant differences do exist. The Cochran-Mantel-Haenszel CMH test statistics with row mean score differ alternative and the corresponding p -values are listed in Tables 57-60.

The Cochran-Mantel-Haenszel (CMH) test statistics with row mean score differ alternative and the corresponding p -values for male and female students are listed in Table 57. Utilizing a test statistic considering male and students only, it was confirmed that there does exist a significant difference between the attitudes of female and male students toward question 6 (p -value = 0.081). Question 6 asked if students felt tutors were interested in them passing class.

Table 57

CMH Test Statistics with Row Mean Score Differ Alternative and the Corresponding p -values for Male and Female Students

	Question							
	1	2	3	4	5	6	7	8
Test Statistic	0.411	0.018	0.139	0.321	1.674	3.041	0.016	0.895
p -value	0.522	0.894	0.710	0.571	0.196	0.081	0.898	0.344

The Cochran-Mantel-Haenszel (CMH) test statistics with row mean score differ alternative and the corresponding p -values for Black and White students are listed in Table 58. It was confirmed that there does exist a significant difference between the attitudes of Black and White students toward question 7 (p -value = 0.055), which asked if tutors better relate to them than their teacher.

Table 58

CMH Test Statistics with Row Mean Score Differ Alternative and the Corresponding p -values for Black and White Students

	Question							
	1	2	3	4	5	6	7	8
Test Statistic	0.508	1.378	0.115	0.337	1.322	0.298	3.684	1.294
p -value	0.476	0.241	0.735	0.562	0.250	0.585	0.055	0.255

Initially, under the significance level .10, no significant differences were found between the attitudes of ethnic groups. The Cochran-Mantel-Haenszel (CMH) test statistics with row mean score differ alternative and the corresponding p -values for all different ethnicities are listed in Table 59.

Table 59 shows, when looking at the attitudes of ethnicities as a group, the p -values for eight questions are all fairly large. One reason is that the numbers of participants in some ethnic groups were too small. For example, only five students were Asian, three were Hispanic, and three were Multiracial. Two strategies can be used to deal with these ethnic groups with small number of observations. One way is to consider the Black and White students only (see Table 58). There are no significant differences between the attitudes of ethnic groups, under the significant level 0.10.

Table 59

CMH Test Statistics with Row Mean Score Differ Alternative and the Corresponding p-values for Different Ethnic Groups

	Question							
	1	2	3	4	5	6	7	8
Test Statistic	1.942	3.628	1.646	2.124	2.328	0.512	4.041	2.864
p-value	0.746	0.459	0.801	0.713	0.676	0.972	0.401	0.581

The other way is to combine the ethnic groups other than Black and White students. The CMH test statistics with row mean score differ alternative and the corresponding p-values for Black, White and other ethnic groups are listed in Table 60. With regard to Black, White, and the combined ethnic groups (other than Black and White), I did not find that there exists any significant difference among these three ethnic groups.

Table 60

CMH Test Statistics with Row Mean Score Differ Alternative and the Corresponding p-values for Black, White, and Other Ethnic Groups

	Question							
	1	2	3	4	5	6	7	8
Test Statistic	0.4876	1.2510	0.4322	0.5927	1.5645	0.5042	3.7817	2.3891
p-value	0.7837	0.5350	0.8056	0.7435	0.4574	0.7772	0.1509	0.3028

Summary of Results

The program evaluation of the Freshman Academy sought to explore whether its Academy can be replicated. The four aforementioned indicator results sought to systemically evaluate the process and outcomes of the cross-age tutorial program as well as look at who is

attending, what the attitudes are of those attending, and whether they differ systematically.

Chapter V goes into more depth of the results of the process and outcomes evaluation study.

CHAPTER V

ANALYSES AND CONCLUSIONS

Introduction

This chapter provides a summary of the research study with respect to the research questions under examination where its findings are correlated with research literature. The limitations of the study will be addressed and recommendations will be given. Finally, suggestions for future research on cross-age tutorial programs will be presented.

Synopsis

The purpose of this dissertation was to conduct a process and outcomes evaluation on the Freshman Academy program at Pinewood High School in Southern Georgia. This study sought to understand differences among students who attended and chose not to attend, why some invitees chose not to attend, and the attitudes of students of different ethnicities and genders of those who did attend a free cross-age tutorial program. It also sought to understand the best predictors of successfully passing a respective class when attending a cross-age tutorial program. The primary purpose of this chapter is to provide an overall review of the Freshman Academy, Pinewood High School's cross-age tutorial program.

Tutoring is a great way to help students develop personally and academically (Gausted, 1992; Patterson & Elliott, 2006). Whether students realize it or not, tutoring is an excellent way to give students a sense of belonging in their school by allowing them to have a stake in shaping the future of others (Damon & Phelps 1989; Flaxman, 1988; Gausted, 1993; Warner, 1991).

Tutoring is the process by which one individual helps another individual gain knowledge in a particular area (Cloward, 1967; Damon & Phelps 1989; Flaxman, 1988; Gausted, 1993; Johnson & Johnson, 1992; Patterson & Elliott, 2006; Warner, 1991). This knowledge then, in turn, helps another student achieve academic success by acquiring the passed on information.

Research shows that cross-age tutoring promotes gains in comprehension skills (Clay, 1993; Cloward, 1967; Cohen & Kulik, 1982; Greenwood, 1991; Hattie, 2006; Topping, 1992), and most students who are offered and attend some type of tutoring demonstrate a good attitude toward their school (Byrd, 1990; Cohen & Kulik, 1982; Coopersmith, 1967; Nazzel, 2002). The key to obtaining comprehension and positive attitude is getting the right students to attend. Not all students need to attend, but those who need it the most should attend.

Pinewood High School personnel are doing their part to ensure freshman students establish a close relationship with their school by offering students services in an attempt to start their high school career on track. Be that as it may, my evaluation findings point out flaws as well as successes in the program.

Discussion

Throughout this program evaluation, certain procedures were used to formulate responses. Data were collected and analyzed in a systematic and thorough way with respect to Pinewood High School's cross-age tutorial program, the Freshman Academy. In doing so, it should serve as a model for other school districts to learn from our mistakes and successes and to anticipate some of the many challenges of providing such a program.

I used two portions of Stufflebeam and Shinkfield's model for evaluation: process and outcomes. Overall evaluations are used to provide objective management by accounting for the worth and success of a program (Stufflebeam & Shinkfield, 2007).

Process Evaluation

Several questions were asked to assist with the evaluation of the Academy's process. Significant differences, detailed below, were presented within ethnicity and socioeconomic status. Socioeconomic status was measured using free and/or reduced lunch as the indicator. These differences emerged in those who were offered a tutorial session and attended as compared with the overall ninth grade population. Pinewood HS consistently ranks in the top 3 within its county in standardized tests and in the top 10 in Georgia. It was surprising to note that such differences existed within its subgroups. One possible explanation for this is that Pinewood has a very strong group of students who tests well perhaps overshadowing those lower performers who need remediation.

At the 9th week, 207 students were offered remediation via tutoring; however, only 79 of those offered remediation actually attended. That is roughly a 38% participation rate. When you look at the raw numbers of offered versus attended, that is paltry. What can possibly account for this is its availability only after school. This is a problem, as many students have prior commitments and/or bus issues which prevent them from attending.

Tables 9-17 utilized chi square statistics to study whether a disproportion exists within the ninth grade population as a whole. Specifically, whether there is a disproportion in the ninth grade class and those invited to tutoring and attended and those who attended tutoring within the ninth grade class. Some existed.

As anticipated from the literature (Cokley, 2003; Hedin, 1987; Ogbu, 2003; Rhymes, 2004; Rumberger & Thomas, 2000), a disproportion of minorities was invited to participate in the Freshman Academy. There is significant difference in ethnicity (p -value < 0.0001) as Pinewood High School's cross-age tutorial program follows that mold as a result of the disproportion of those in attendance when compared to its overall ninth grade population. Pinewood, however, does not track minority students (Ogbu, 2003) as a means of involvement with the Freshman Academy. If students are failing with a 70 during the 6th, 12th, and 15th week, students are invited no matter what their ethnicity is.

According to Rumberger and Thomas (2000), minorities need more tutoring than their Anglo counterparts. Pinewood High School's population is 67% White, 13% Black, 10% Asian, 9% Hispanic, and 1% Multiracial and Native American. Those invited to the Freshman Academy differed significantly. The breakdown of those who were considered at risk at one time is as follows: 30% White, 31% Black, 10% Hispanic, 1% Multiracial, and 7% Asian.

Students who come from lower socioeconomic backgrounds are more prone to dropout (Astin, 1999); therefore, they are more of a target for tutoring programs. At Pinewood HS there is a significant difference in socioeconomic status (p -value < 0.006) between those who attended a tutorial session and the overall ninth grade population. It is not known yet if those tutees who obtain a free or reduced lunch will continue to struggle, as research suggests they will, for the duration of their high school years. Twenty-one participants (27%) qualified for a free and/or reduced lunch in fall 2007. According to Table 3, the overall free and reduced lunch of Pinewood HS is 14%.

Pinewood's Freshman Academy is not immune to ethnic and socioeconomic differences. This is potentially troubling. With minority populations growing, especially Hispanic, it is

inevitable that free and reduced lunch participants as well as minorities attending Pinewood will continue to increase and will potentially be in need of tutorial services (Astin, 1999; Cokley, 2003; House & Wohlt, 1991; Rumberger & Thomas, 2000). As an evaluator this raises questions about whether Pinewood is successfully identifying those who need tutoring the most. A question of interest, for which no statistical data was extrapolated, is if the proportion of minority and free and reduced lunch participants' (and those considered at risk who chose not to attend) failures was on par with Pinewood's population of failures as a whole.

Pinewood High School's gender make-up of tutoring participants did not vary too much from the overall population of the school. Forty-five participants were males whereas 34 were female. As for class totals, it was very startling. Thirty-five students needed tutoring in both their math and science classes. What the data do not reveal is if they were concurrent. For instance, one tutee could have needed math at the 6th week, then science at the 12th. Nevertheless, 44% were at risk for two core subject classes at any given time.

Those tutees attending the cross-age tutorial program varied based upon level. A concern that jumps out is the percentage of honors students who were in need of remediation. Placement was based upon their eighth-grade teacher's recommendation, being gifted certified, on a certain diploma track, and/or a student's choice. Typically, honors placement rests with the recommendation of the teacher. Certification and diploma tracks have little to do with taking an honors class. Honors should be in line with advanced placement and gifted students and, ideally, few, if any, of these students, should require tutoring based on their expected level of performance.

The results to the total invited versus the total attending are attention-grabbing. Focusing on the 359 total tutorial sessions attended makes it look like many tutees were attending

several times. However, Table 8 was added to highlight the fact that those 10 students attending by choice attended 81 total tutorial sessions combined. Of the 10 who chose to attend, 4 were gifted and 6 were of the college preparatory track, while a majority was White and female. Of the 79, 17 were in a technical level class and track, while 46 were in a college preparatory class. Overall, it is reasonable to conclude that those who were attending the tutorial session were lower-level students as college preparatory at Pinewood HS is considered to not have the rigor of other levels (notice order of levels in Table 6). Typically, they were the students who were not able to get themselves to the passing point before the end of semester. Those who need more assistance were the ones who are attending. This, however, does not address the frequency of attendance.

Another focus is on the attitudes of those who chose not to attend the tutorial program. The research question asked what differences, if any, exist with regard to gender and ethnicity when it comes to attitudes, student performance, and extracurricular activities of those who did not attend. Specifically, what barriers prevented students from attending? The participants' responses helped to understand the participants' perspective as to what was going on with them that they chose not to attend tutoring. As a whole, little clear differences in opinions developed. Male and females students had parallel responses throughout. Modest variations in opinions also applied to ethnicity. Proportionally speaking, participants' responses were comparable with respect to their attitudes about the Freshman Academy. I was very surprised that 28% of those who were offered tutoring and were not involved in anything after school gave no explanation as to why. What could potentially account for this is stubbornness, laziness, or refusal to write a response. This last, of course, points to a limitation in the research design.

The untutored population was nearly split with their responses. Of those who did not want to attend, most felt they were responsible for their poor grades. It is too much of a stretch to realize that attending has various benefits like time management (Utay & Utay, 1997) and motivation growth (Biehler & Snowman, 1993). The other half legitimately seemed to value the program. Unfortunately work and other after-school activities prevented them from attending. It is interesting to note that of those participants who said they did want to attend tutoring, 5 were males and 8 were females. Topping and Whiteley (1993) believe that the underlying reasoning may be the uncertainty of who their tutor might be. They argue that same-sex tutors are beneficial and can act as an ice breaker. It also might suggest girls are more concerned with grades than boys. There was no discrepancy with race and gender.

The gender population of those in attendance was on par with Pinewood as a whole. Forty-five percent of Pinewood's overall female population compared with 43% who attended the Academy and 55% of Pinewood's population was male compared with 56% of those who attended the Academy.

A minority of those students who chose not to attend were involved in extracurricular activities at Pinewood High School. House and Wohlt (1991) suggest that not all students have time to attend tutoring because of prior commitments like sports. This untutored group does not fit that mold with respect to Pinewood, as 17 were not involved with any type of activities.

A majority of those students tutored were involved in an extracurricular activity outside of school. Several of these were not technically extracurricular activities, but hobbies. It was not asked whether those activities in question like fishing, volunteering, and paintball got together regularly. That being said, 15 were at least involved in something outside of school. Of the 10 who were not involved with extracurricular activities outside of school, 7 were females. No

explanation exists as to why females virtually equaled men in activities at school, yet were so significantly different when it came to outside school activities.

Of the 25 who responded, 7 just did not want to go. They gave no specific answers that could be compared with the literature. Bernard (1990) suggested people get too busy with other things. Five had family matters to take care of at home. Of the five who had concerns, all were White students, with three being females and two being males. Historically, minorities, especially Hispanics, have a very close relationship with their families (House & Wohlt, 1991), yet in the current study none fit that mold.

Only nine of the students had specific duties and responsibilities that were associated with working. As a result of students choosing not to attend the tutoring session, this question gave students a legitimate reason for not attending. None of the Black students who were surveyed had any work after school. House and Wohlt (1991) suggest many minorities do not work because they typically do not have that family member instilling in them the benefits of working, often because they are raised in single-parent homes with no parent there to get them motivated to work or to become involved in something.

Of those responding, 19 claimed to receive no academic tutoring or mentoring outside of school. With many tempting after-school activities it would behoove students to find someone who can give guidance and support when it comes to right and wrong (Lund, 1992). If students choose not to seek assistance, communities should step up and not just make themselves available to mentor, but to seek young adults out.

The open-ended untutored questionnaire ended by seeking input. Four participants responded with constructive feedback. These participants claimed it was a good thing, yet they did not attend. Coincidentally, all four were involved in extracurricular activities outside of school,

while two were also involved in extracurricular activities at school. This suggests that although they had favorable thoughts about the Academy, they could not have attended. It is not a coincidence that those who did not attend, were not involved in extracurricular activities and did not see the Academy in a pleasant light. Also, two females made the suggestion to offer tutoring at some point throughout the day so more can take advantage of it.

Overall, little noticeable differences in opinions materialized as male and females had similar responses. Little variations in opinions also applied to ethnicity. Proportionally speaking, participants' responses were similar with respect to their attitudes about the Freshman Academy.

Summative Evaluation of the Process

A summative evaluation of the process portion would suggest that, generally speaking, the strategies implemented to seek a desired output were not achieved. The program founders suggest the output of having participants attend could therefore justify the program. This correlation is superficial as no data exists to substantiate this. In a summative evaluation a decision is made as to whether or not the results were efficient and a desired product was reached (Stufflebeam & Shinkfield, 2007).

As an evaluator, I would argue that the process of the Freshman Academy is working in several ways. Those students who actually do attend are those of lower-level class status. In addition, the gender population of those who attended the Academy closely resembled that of the overall population of Pinewood.

Some troubling aspects of the Freshman Academy's process first and foremost are its participation rate. Such a small percentage of those invited to the Academy are attending. Based upon the aforementioned data indicators it seems, on the one hand, problematic that a

disproportion exists with minorities and students of lower socioeconomic status who attended the Freshman Academy as compared to the ninth grade population as a whole. On the other hand, as has been pointed out, the research literature indicated that this would, in fact, be the case. Also, there seems to be a problem getting to kids to attend the Academy. Several students have no after-school issues which prevent them from going. Finally the design of the Academy, or lack thereof, creates a limitation of those who actually can participate. Most notably is the Academy's availability.

Overall student responses were similarly aligned towards one another with most questions (see Appendix F) to those invitees who chose not to attend. My evaluation revealed few attitudinal variances existed with gender and ethnicities as a barrier for attending the Freshman Academy. These differences; however, is not a positive one. From reasons for not attending, to lack of involvement in Pinewood activities, to lack of after-school accountability the lack of variances lends credibility to a negative outcome; therefore, it is reasonable to conclude that the procedures are not working.

Outcomes Evaluation

Regression analysis was used to analyze a student's grade at the 9th week and final grade as a predictor of success. I asked several questions to identify the best predictors of attendees passing their math or science class. I used an attendee's grade at the 9th week and their final grade as dependant variables. Overall, gender and socioeconomic status using free and reduced lunch are good predictors of success for the grade at 9th week and female students and those who do not receive a free and reduced lunch are more likely to be successful at 9th week. Socioeconomic status, ethnicity, and grade at 9th week are good predictors of success for final

exam and those who do not receive a free or reduced lunch, or who are Asian, or who have higher grade at 9th week are more likely to be successful on the final exam. Historically, those who receive a free or reduced lunch are of minority status and minorities are more susceptible to failure (Astin, 1999; Cokley, 2003; House & Wohlt, 1991; Rumberger & Thomas, 2000). This is troubling because Pinewood, despite its overall success, is on par with the rest of the nation as it pertains to its struggling subgroup students.

Of the 79 attendees, 21 (27%) received some type free or reduced lunch. Free and reduced lunches are an indicator of one's socioeconomic status. The lower the socioeconomic status the more potential one might need tutoring (Astin, 1999; Rumberger & Thomas, 2000). Three White students were free or reduced lunch, while 12 Blacks, 3 Hispanics, and 3 Asians were free or reduced lunch. Fifteen percent were Black, while Whites, Hispanics, and Asians were 4%, respectively. Therefore, when compared to ethnicity totals of those who attended a tutorial sessions, a disproportion of Black students would need tutoring as compared to their counterparts, yet they are not attending. Free and reduced lunch percentages for Black students are more aligned with the overall population of Pinewood High School than of those attending. Specifically, 15% of Black students attending the Freshman Academy received either a free and reduced lunch with Black students being 13% of Pinewood's population. Opposite to that was the 4% of White students who attended the Freshman Academy compared with 67% of Pinewood's overall population. Overall, no best predictor existed as to why a student would pass their respective class.

At one time, over 400 different students were considered at risk, yet only 79 actually attended at least one tutorial session. Looking at that data it would suggest that the Freshman Academy it not getting the students to attend who need it most. That being said, data indicate

that half of 79 students who participated attended at least twice with either math or science tutoring. The other half attended only once. As a whole, the frequency of attendance is low and students who do attend are not coming back.

Another question centered on whether any differences exist in attitudes towards the tutorial program between White and Black students and between boys and girls. This portion of the study included students who accepted tutoring during either the 6th, 9th, 12th, or 15th week. The dataset consisted of 50 students who attended at least one tutorial session in fall 2007. For each participant, the demographic information recorded included age (12, 13, 14, or 15), gender (male or female), and ethnicity (White, Black, Asian, Hispanic, Multiracial, or Native American). Each participant was asked to answer eight survey questions, where the answer should be chosen from the five response scales: *strongly agree*, *agree*, *neither*, *disagree*, and *strongly disagree*.

The question of interest here is whether or not significant differences exist between the attitudes of gender and ethnic groups with regard to the survey questions. Under the significance level .10, I find that there existed a significant difference between attitudes of male (72%) and female (44%) students toward question 6 (p -value = 0.081). Question 6 asked if tutees felt the tutors were interested in them passing their class. No explanation was explored as to why such a discrepancy exists to explain why females felt their tutors were not interested in them passing their class. As for the other seven questions, there were no significant differences between the attitudes of male and female groups, under the significance level .10.

Under the significance level .10, I find that there existed a significant difference between Black (65%) and White (32%) students toward question 7 (p -value = 0.055). Question 7 asked if tutors better relate to them than their teacher. No explanation was explored as to why such a

discrepancy exists to explain why Black students felt their tutors related better to them than White students. As for the other seven questions, there were no significant differences between the attitudes of Black and White students under the significance level .10.

It did not surprise me that females differed from males with regard to their tutors. No data was obtained, but historically males perform better in math and science class than females so it is reasonable to assume that more males were tutors. As a result of that, females might have had a disconnection with their tutor. No explanation exists as to why a discrepancy exists with Black and White students and their tutor vs. tutees. It could be an age or ethnicity issue. This relationship between Black students and their math or science teacher infers a disconnect exists between Black students and their teacher. This divide does not exist with the tutor.

Cross-age tutoring can have social, academic, and psychological benefits (Cloward, 1967; Cohen & Kulik, 1982). As one benefit, many studies show that those tutored gain academically (Cohen & Kulik, 1982). With the exception of question 6 as it relates to gender and question 7 as it relates to ethnicity, the contingency table analysis shows little significant differences with gender and ethnicity.

The principal goal of tutoring is to allow for gains to be acquired in both the social and academic development of youth for all those involved. It advances the ideals of creativity by fostering creativity among those working on both ends. The bottom line is that students can play a critical role in helping others accomplish something and concurrently help themselves. Pinewood High School offers no tangible reward to its participants (Trovato & Bucher, 1980). Evaluations do not quantitatively test for these abstract gains. It is assumed that the Freshman Academy affords those participants the opportunity to experience creativity and social development.

Summative Evaluation of the Outcomes

A summative evaluation of the outcomes portion would suggest that, generally speaking, the strategies implemented to seek a desired output were not obtained. The program founders, however, believe that because the percentage of ninth grade math and science students failing dropped since the program's inception, its outcome was successful. This may be a false conclusion as the failure rates can be attributed to many factors. In other words, a causal relationship between the implementation of the Academy and the reduced failure rate has yet to be scientifically supported.

As an evaluator, I would argue that the outcomes of the Freshman Academy indicate that it is generally working in one area. That is with the attitudes of the participants' experience with the Freshman Academy at Pinewood High School. Their responses varied little with most questions (see Appendix C) as no significant differences were found in attitudes of gender and ethnicities, with the exception of two separate respective questions, with regard to their thoughts on the Freshman Academy. When a general positive agreement exists with its participants it is reasonable to think that a desirable outcome has been achieved. This lack of variance by the tutees toward doing better in a tutorial class, acquiring motivation and communication skills, academic growth, the feeling smaller tutorial sessions are a benefit, and the seeing of subject matter positively lends credibility to a positive outcome.

Many troubling aspects exist within the Freshman Academy's outcomes. First off, a good predictor of passing the ninth grade at Pinewood is whether or not one receives free or reduced lunch. The research literature, indicating free and reduced lunch students are more susceptible to failure, predicts this outcome. Also those students who are in need of tutoring the most are not attending regularly. Many students are one and done. Although little differences exist with

attitudes of attendees it is important to mention that a difference did exist with females and whether or not their tutor was interested in them passing as well as Black students who felt their tutors better relate to them than their teacher.

Program Founders

Before I evaluated the Freshman Academy I interviewed the programs founders to acquire a base of knowledge with regard to its formation. Their responses were compared with literature.

According to Stufflebeam and Shinkfield (2007), all programs have specific tangible, definable goals. The Freshman Academy does not. The Freshman Academy seems to have more of a vision where it seeks academic growth. Reducing the failure rate is more data driven and can be assessed to determine whether the goals are feasible. That being said, evaluating failure rate would, according to the research, not lend itself as a good goal (Stufflebeam & Shinkfield, 2007) simply because it is not efficient data to make evaluative claims.

Meticulous log records were kept by the founders. According to Koskinen and Wilson (1982), a program's director should be around to make sure those in attendance have signed in and to keep track of those who come and go. According to Berk and Rossi (1990) and Koskinen and Wilson (1982), the founders are keeping effective records.

Taking into account one's gender and ethnic make-up does make a difference (Polirstok & Greer, 1986; Rohrbeck, 2003; Topping & Whiteley, 1993). This is a problem because Pinewood's Freshman Academy does neither. Research supports the fact that females relate better to females and vice versa for males when it comes to results of tutoring programs (Topping & Whiteley, 1993). Research also supports that minorities who were tutored by

minorities gained in both academic and individual growth (Elbaum et al., 2000; Koskinen & Wilson, 1982; Polirstok & Greer, 1986; Rohrbeck, 2003). According to Topping and Whiteley (1993), same-sex tutoring partners helped academically but it also helped to disseminate the stereotype that males may be stronger in a given area. Similarly, Koskinen and Wilson (1982) found that minorities who were tutored by other minorities created a greater relationship with each other and had greater gains in academic achievement than those who were taught by a different ethnicity.

The literature disagrees with the fact that Pinewood High School gives no formal training. Tutors need to be educated to make sure they know what their roles and responsibilities are (Koskinen & Wilson, 1982). The fact they are asked or volunteer to participate might signify that they possess some type of skill that can be used to teach others; however, no matter how much they know they still should be taught to instill a sense of mental confidence within themselves (Koskinen & Wilson, 1982). Tutors should be taught to be patient, give encouraging feedback, and give support when needed. After such training, the tutors then take these skills and share them with those whom they are tutoring (Cohen & Kulik, 1982). Polirstok and Greer (1986) carried out a study where they looked at tutors and the strengthening of tutee behavior. They found that those tutors who were trained to give positive or negative reinforcement were superior at the tutoring process.

According to Berk and Rossi (1990), Cloward (1967), and Vaznaugh (1995), tutoring should limit itself to approximately 8 weeks. Anything too long does not allow for those being tutored to see a foreseeable end date. A shorter timeframe ensures a short structured program with a foreseeable end date. Extended programs do not always benefit the tutor or tutee. Pinewood High School only has tutoring from 2:30-3:30 p.m., Monday through Thursday. If at

all possible, tutoring would take place throughout the school day to avoid morning and after-school dilemmas (Topping, 1988). The founders believe that time and money is why tutoring is not able to be offered at a variety of times.

According to the founders, the foundation lies more with a challenging curriculum and the mere fact that such a tutoring program is offered and available to students. Once again, however, the research does not support the fact that Pinewood High School has no literature foundation. According to Rohrbeck et al. (2003), 80% of the tutorial programs he studied were designed by universities. None follows a particular research theory, while 6% claim to have been written and designed by a local district professional. Therefore, the Freshman Academy, according to Rohrbeck et al. (2003), is among the 14% who have no affiliation.

The cost of the program is \$2000.00 per semester or \$4000.00 per year. Research indicates that tutoring by way of cross-age is one of the most cost effective and useful ways of keeping students on track for graduating and to target those struggling in academics and those who are at risk (Joint Committee, 2003; Hedin, 1987). However, literature does not mention any specific dollar amount.

Program founders stated that because math and science failure rates dropped from 12% to 7% and 8%, respectively, it indicates that the Academy is successful. This is problematic as this drop in failure rate cannot be statistically attributed to tutoring. This relationship is causal at best and cannot be deduced from this data. Literature states that a program is useful and credible when it earns the public's respect and trust (Joint Committee, 2003; Patton, 2003; Stufflebeam & Shinkfield, 2007). The founders claim that throughout various meetings, parents are well aware of the Freshman Academy and its intentions. Like the previous question, nothing indicates the program is not useful and credible. Be that as it may, the founders feel is working, and by the

founders' own admission, making even more parental contact early in the semester will only enhance its evolving credibility.

What surprised me the most about the founders' responses is how much they have no significant basis for the Freshman Academy. None of it was calculated. When their procedures were supported by literature it was by chance or what they believed made sense, not because it was best practice, tested, and measured with data. I believe this was because it was rushed and it was common sense to offer tutoring to those failing their math and science class.

Recommendations

The evaluation of the Freshman Academy began in fall 2007. Here a program was started to target those ninth graders in need of remediation in math or science class in various weeks throughout the school year. The idea was to offer free help via a cross-age tutorial program. In doing so, students would attend and those who attended would subsequently acquire the knowledge to be successful in the attended tutorial class. This assumption is flawed in several areas.

Pinewood has a disproportion of minorities in need of tutoring. The literature anticipates this outcome, indicating that those students of non-Anglo ethnicities are more prone to need tutorial assistance (Fine, 1991; House & Wohlt, 1991). However, Pinewood must find ways to ensure that students of color do not feel "targeted," which can lead to stigmatization (Ogbu, 2003). Pinewood's Freshman Academy needs to continue offering tutoring to all students who need it, not just minorities.

Such a large imbalance exists between those offered tutoring and those attending. Previously, timeframe (Topping, 1988) was an issue as tutoring was only offered from 2:30-3:30

after school. With so many afterschool issues it would serve Pinewood HS well to, as literature suggests, find collaborative time throughout the school day to offer tutoring. Doing so can potentially curb the one and done mentality as well as the after-school choice to attend.

With such an ethnic discrepancy of those who will most likely be in attendance during Pinewood's school day remediation, it would behoove Pinewood to follow the best practices identified in the literature with regard to the tutors. As best, tutors need to be proportionally aligned with those in attendance. This includes gender and ethnicity. When feasible, minorities should be called upon to tutor minorities (Rohrbeck, 2003) as well as like genders should be combined (Topping & Whiteley, 1993). According to the literature, addressing same gender issues could potentially address why the Freshman Academy females felt their tutors were not interested in them passing their class. In addition, it is recommended that tutors are trained on how to interact with tutees (Koshinen & Wilson, 1982; Polirstok & Greer). Doing so gives mental confidence and skills to make sure tutors know their role and responsibilities.

In its current state, Pinewood's current program should not continue. At Pinewood the initial idea of the Freshman Academy was to help at least one student who chose to attend after-school cross-age tutoring. Over the long haul it would have served the masses if Pinewood had taken the time to review the literature and develop a program according to best practices. In fall, 2007 this study began to evaluate the Academy in its embryonic stage.

In spring 2009 the Freshman Academy is still the same as it was in fall 2007; however, the availability of tutoring is being modified to attract more students. In fall 2009, Pinewood has devised a program to offer tutoring throughout the school day. Pinewood HS will implement a learning community where all students of a yet to be determined criteria will be made to attend tutoring throughout the school day (Topping, 1988). This will alleviate the reliance on students

to find time afterschool and allow for Pinewood's administration to target those lowering performing subgroups on their adequate yearly process report. Initially, all grades and level of class will be included where core classes will have teachers and peer leaders available for tutoring assistance. Doing so will help give many students the much needed review time during the school day. Also, in fall 2009 Pinewood has devised a plan to train its peer tutors. A peer tutoring class will now be offered to teach those tutors, based upon research, appropriate means of tutoring (Koskinen & Wilson, 1982).

Several years of a program does not validate it. The same issues in fall 2007 still exist today in spring 2009. The modifying, tightening, and updating based upon what current research literature presents was needed. Until spring 2009, the Freshman Academy had not done so. This is problematic. For long-term sustainability it would be in the best interests of the program to adjust accordingly. With the impending shift in tutorial opportunities in fall 2009, Pinewood is indeed moving in the right direction toward what the literature recommends as a more viable, impacting cross-age tutorial program. It is highly recommended Pinewood evaluate their program on a yearly basis and tweak as needed.

Limitations

The greatest limitation to this evaluation study was the number of sampled students. Of the 79 students solicited to participate with Research Question 4 as it pertains to differences among ethnicities and gender, only 56 students returned parental consent forms. Of the 56 parental consent forms returned, 6 denied their child permission to participate. In addition, only 31 of the 100 solicited students for Research Question 2, which pertained to why those who were invited did not attend, returned parental consent forms. Consequently, 6 returned a parental

consent form not allowing their child to participate. Repeated attempts were made to contact parents/guardians with phone calls, and repeated reminders were given to students via notes and individual meetings. One other limitation was that not every question was answered by every student.

Future Research

With the current age of accountability it is reasonable to assume more schools will begin and/or continue to try and reach at-risk students through tutoring. That being said, a comparative study of like situation schools in one county would be a good start. Like situations would include, but not be limited to, like ethnic populations and gender.

In addition to a comparative study, it would be beneficial to have more studies dealing not with who attends but why that particular person or group of people were considered at risk. Where or when did the student go off track from graduation? An ethnographic study would be able to dive into a small grouping of students to try and figure out where/how students begin to fall behind academically. This could potentially give school personnel and parents an insight into where or when awareness needs to be heightened.

Motivation of students who place themselves in one level of class over another is a possibility for a qualitative or quantitative study. Looking at the motivation levels of students and how they differ among like students is a potential future study. Specifically, how/why do some students choose to motivate themselves?

Another area of future research could be a longitudinal study of a tutored group and untutored group. A researcher could follow a student or group of students for 4 years or so to study how tutoring affected them. Was it beneficial in their early years of high school? Did

students still need tutoring as their high school career went on? If not, why? If so, did they continue to attend? If not, why the attrition? What was done if and when they finally received a passing grade?

An area of exploration could focus on the portions of significant differences with this study. Seeking to understand why more minorities and those of lower socioeconomic status are being invited to the Freshman Academy is one potential area of future research. If Pinewood excels in so many areas, where is the breakdown? Related to such issues of diversity, researchers might ask why females felt their tutors were not interested in them passing their respective class and why Black students felt their tutors can better relate to them than their teacher. What accounted for these discrepancies could potentially serve as focus points when designing a tutorial program.

It would be interesting to monitor those who attended the Freshman Academy throughout their 4 years at Pinewood. Did they continue to succeed or struggle? Or a qualitative study could research those abstract qualities acquired like creativity, social development, and the ability to help others.

It was the desired outcome of this study to suggest future research in determining whether the Freshman Academy at Pinewood High School could be replicated. That replication could be in its current form or a modified version. Replication of the Freshman Academy could indeed be done. Tutoring is a necessary right that all students should have access to. In today's society it is in the schools' best interest to make sure all students are learning up to their potential and will eventually become productive members of society. Tutorial programs are not a guaranteed answer, but it is great start to reach those who, on paper via grades, are academically challenged.

It is suggested that a like study be conducted asking similar questions over consecutive years to determine if any similarities or abnormalities arise. Future similar studies would ideally display the same trends over a specific period of time.

Conclusion

The benefits of cross-age tutoring go well beyond the student just learning a given topic. Tutoring allows for gains not just in comprehension but with time management, classroom behavior, and retention rates (Utay & Utay, 1997). Academic skills are a given; however, students acquire skills in classroom discipline, they develop socially, and peer relations are enhanced (Greenwood, 1988). Research shows that both the tutor and tutee benefit from tutoring and that benefit shows through academic growth (Bernard, 1990). Also, cross-age research tutoring studies have shown tutees have benefited in their attitude towards subject matter and in achievement (Cohen & Kulik, 1982).

This study indicated that responses varied little among the questions answered and minorities who receive a free and reduced lunch are more susceptible to need tutoring. More research needs to be done to identify how and what non-measurable attributes were gained by attending the tutorial sessions or lost by not attending. Overall, this evaluation study can be used and molded to help design a cross-age tutorial program for any school that desires a way reach students they feel are susceptible to not being successful.

In conclusion, the Freshman Academy in its current state has too many weaknesses to receive a good overall evaluation. From its availability, disproportion of those in attendance, lack of attendance generally, and infrequency of attendance among those students who began the

program, the Academy has a lot to be desired. With a new school year on the horizon, the availability of tutoring throughout the school day will help alleviate some issues.

REFERENCES

- Agresti, A. (2002). *Categorical data analysis* (2nd ed.). New York: John Wiley & Sons.
- Allen, V. L. (1976). *Children as teachers: Theory and research on tutoring*. Academic Press. New York
- Ankorn, D. (1999). *The effect of cross-age tutoring by high schoolers on their understanding and ability to create a short story*. Spokane Washington: Whitworth College. (ERIC Document Reproduction Service No. ED 459 477).
- Astin, A. (1999). Student involvement: A developmental theory for higher education. *Journal of College Student Development*, 40, 518-529.
- At- Risk. (n.d.) Retrieved October 20, 2006, from <http://www.at-risk.org/index.html>.
- Bandura, A., & Locke, E. (2003). Negative self-efficacy and goals effects revisited. *Journal of Applied Psychology*, 88, 87-99.
- Benard, B. (1990). *The case for peers*. Portland, OR: Northwest Regional Educational Laboratory. Retrieved October 27, 2006, from http://www.nwrac.org/pub/library/c/c_case.pdf.
- Biehler, R., & Snowman, J. (1993). *Psychology applied to teaching* (7th ed). Boston: Houghton Mifflin.
- Bowles, S., & Gintis, H. (1976). *Schools in capitalist America*. New York: Basic Books.
- Bryd, D. E. (1990). Peer tutoring with learning disabled: A critical review. *Journal of Educational Research*, 84, 115-118.
- Cairo, L., & Craig, J. (2005). *Cross age tutoring: An experiment*. Retrieved October 27, 2006, from <http://www.edvantia.org/publications/pdf/05Cross-AgeTutoring.pdf>.
- Clay, M. (1993). *Reading recovery, a guidebook for teachers in training*. Portsmouth, NH: Heinemann.
- Cloward, R. D. (1967). Studies in tutoring. *Journal of Experimental Education*, 36(1), 14-25.
- Cohen, P. A., & Kulik, J. A. (1982). Synthesis of research on the effects of tutoring. *Educational Leadership*, 39, 226-227.

- Cohen, P., Kulik, J., & Kulik, C. (1982). Educational outcomes of tutoring: A meta-analysis of findings. *American Educational Research Journal*, 19(2), 237-248.
- Cokley, K. O. (2003). What do we know about the motivation of American students? Challenging the “anti-intellectual” myth. *Harvard Education Review*, 73(4), 524-558.
- Coopersmith, S. (1967). *The antecedents of self-esteem*. San Francisco: W.H. Freeman.
- Cronbach, L. J. (1963). Course improvement through evaluation. *Teachers College Record*, 64, 672-683.
- Damon, W., & Phelps, E. (1989). Critical distinctions among three approaches to peer education. *International Journal of Education Research*, 13, 9-19.
- Druian, G., & Butler, J., (1987). *Effective schooling practices and at-risk youth: What the research shows*. Washington, DC: Office of Educational Research and Improvement (OERI), U.S. Department of Education.
- Elbaum, B., Vaughn, S., Hughes, M. T., & Moody, S. W. (2000). How effective are one-to-one tutoring programs in reading for elementary students at risk for reading failure? A meta-analysis of the intervention research. *Journal of Educational Psychology*, 93(4), 605-619.
- Fashola, O. S. (1998). *Review of extended-day and after-school programs and their effectiveness*. (Report No. 24). Baltimore MD: Center for Research on the Education of Students Placed at Risk. (ERIC Document Reproduction Service No. ED 424 343).
- Fashola, O. S., & Slavin, R. (1998). Effective dropout prevention and college attendance programs for students placed at risk. *Journal of Education For Students Placed At Risk*, 3(2), 159-183.
- Fine, M. (1991). *Framing dropouts. Notes on the politics of an urban public high school*. New York: State University of New York Press.
- Fitzgerald, J. (2001). Can minimally trained college student volunteers help young at-risk children to read better? *Reading Research Quarterly*, 36(1), 28-46.
- Flaxman, E., Ascher, C., & Harrington, C. (1988) *Youth mentoring: Programs and practices*. New York: ERIC Clearinghouse on Urban Education.
- Gaustad, J. (1992). *Tutoring for at-risk students*. Oregon School Study Council Bulletin, 36(3). (ERIC Document Reproduction Service No. ED 353- 642).
- Gaustad, J. (1993). *Peer and cross-age tutoring*. Eugene, OR. Retrieved October 15, 2006, from <http://eric.uoregon.edu/publications/digests/digest079.html>

- Good, J., Halpin, G., & Halpin, G. (2000). A promising prospect for minority retention: Students becoming peer mentors. *The Journal of Negro Education*, 69(4), 375-383.
- Greenwood, C.R. (1991). Class wide peer tutoring: Longitudinal effects on the reading, language and mathematics achievement of at-risk students. *Reading, Writing and Learning Disabilities*, 7, 105-123.
- Greenwood, C. R., Carta, J. J., & Hall, V. (1988). The use of peer tutoring strategies in classroom management and educational instruction. *School Psychology Review*, 17(2), 258-275.
- Hattie, J. (2006). Cross-age tutoring and the reading together program. *Studies in Educational Evaluation*, 32, 100-124.
- Heidin, D. (1987). Student as teacher: A tool for improving school climate and productivity. *Social Policy*, 17(3), 42-47.
- House, J. D., & Wohlt, V. (1991). Effect of tutoring on voluntary school withdrawal of academically unprepared minority students. *Journal of Psychology*, 29, 135-142.
- Johnson, D. W., & Johnson, R. T. (1992). Implementing cooperative learning. *Contemporary Education*, 63, 173-180
- Joint Committee on Standards for Education Evaluation. (2003). *The student evaluation standards*. Thousands Oaks, CA: Corwin Press.
- Kalkowski, P. (1995). *Peer and cross-age tutoring*. Portland, OR: Northwest Educational Research.
- Koskinen, P. S., & Wilson, R. M. (1982). *Developing a successful tutoring program*. New York: Teachers College Press.
- Lippitt, P. (1976). *Learning through cross-age helping: Why and how*. New York: Academic Press.
- Lund, L. (1992). *Corporate mentoring in US schools: The outstretched hand*. New York: The Conference Board.
- Maxwell, M. (1991). The effects of expectations, sex, and ethnicity on peer tutoring. *Journal of Developmental Education*, 15, 14-16, 18.
- Matthews, M., & Kesner, J. (2003). Children learning with peers: The confluence of peer status and literacy competence within small-group literacy events. *Reading Research Quarterly*, 38, 208-234.
- Merriam, S. (1998). *Qualitative research and case study applications in education*. San Francisco: Jossey-Bass.

- Nazzari, A. (2002). Peer tutoring and at-risk students: An exploratory study. *Action in Teacher Training, 24*, 68-80.
- Ogbu, J. (2003). *Black American students in an affluent suburb: A study of academic disengagement (Sociocultural, political, and historical studies in education)*. Pittsburgh: Lawrence Erlbaum Associates.
- Patterson, P., & Elliott, S. (2006). Struggling reader to struggling reader: High school students' response to a cross-age tutoring program. *Journal of Adolescent and Adult Literacy, 48*, 5.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods*. Thousand Oaks, CA: Sage.
- Polirstok, S. R., & Greer, R. D. (1986). A replication of collateral effects and a component analysis of a successful tutoring package for inner-city adolescents. *Education and Treatment of Children, 9*, 101-121.
- Reddick, T. L., & Peach, L. E. (1990). *A study of characteristics profiling at-risk students and influences impacting their rural environment*. Paper presented at the Annual Conference of the National Social Science Association, Houston, TX. (ERIC Document Reproduction Service No. ED 326 355).
- Rohrbeck, C., Ginsburg-Block, M., Fantuzzo, J., & Miller, T. (2003). Peer assisted learning interventions with elementary school students: A Meta-analytic review. *Journal of Educational Psychology, 95*(2), 240-257.
- Roswal, G., Mims, A., Croce, R., Horvat, M., & Block, M. (2001). Effects of collaborative peer tutoring on urban seventh graders.
- Rumberger, R., & Thomas, S. (2000). The Distribution of dropout and turnover rates among urban and suburban high schools. *The Sociology of Education, 73*, 39-67.
- Sanders, J. (1976). *A basis for determining the adequacy of evaluation and design*. Paper prepared for the Alaska Department of Education to the Northwest Regional Educational Laboratory. Retrieved December 20, 2007, from, <http://www.wmich.edu/evalctr/pub/ops/ops06.html>.
- Sanders, W. L., & Horn, S. (1994). The Tennessee value-added assessment system; mixed methodology in education assessment. *Journal of Personnel Evaluation in Education, 8*(3) 299-311.
- Slavin, R., & Madden, N. (1989). What works for students at-risk: A research synthesis. *Educational Leadership, 46*, 4-13.

- Spady, W. (1970). Dropouts from higher education: An interdisciplinary review and synthesis. *Interchange, 1*, 64-85.
- Stufflebeam, D. L. (1971). The relevance of the CIPP evaluation model for educational accountability. *Journal of Research and Development in Education, 5*(1), 19-25.
- Stufflebeam, D. L., & Shinkfield, A. J. (2007). *Evaluation theory, models, and applications*. San Francisco: Jossey-Bass.
- Thomas, R. (2005). *Teachers doing research: An introductory guidebook*. New York: Pearson Education.
- Tierney, J., Grossman, J., & Resch, N. (1995) *Making a difference: An impact study of Big Brother/Big Sisters*. Retrieved November 12, 2006, from http://www.childtrends.org/what_works/clarkwww/mentor/BBS.pdf
- Toppings, K. (1992). Cooperative learning and peer tutoring: An overview. *The Psychologist, 5*, 151-161.
- Topping, K., Peter, C., Stephen, P., & Whale, M. (2004). Cross-age tutoring of science in the primary school: Influence on scientific language and thinking. *Educational Psychology, 24*, 57-75.
- Topping, K., & Whiteley, M. (1993). Sex differences in the effectiveness of peer tutoring. *School Psychology International, 14*, 57-67.
- Trovato J., & Bucher B. (1980). Peer tutoring with or without home-based reinforcement, for reading remediation. *Journal of Applied Behavior Analysis, 13*(1), 129-141.
- Vaznaugh, A. (1995). *Dropout intervention and language minority youth*. Retrieved February 15, 2008, from <http://www.cal.org/resources?Digest?vanznau01.html>
- Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. *American Anthropologist, 81*, 956-957.
- Warger, C. L. (1991). *Peer tutoring: When working together is better than working alone*. Council for Exceptional Children, Reston, VA. (Eric Document Reproduction Service No. ED 345 459).
- Wood, D., Bruner, J., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry, 17*, 89-100.
- Yin, R. (2003). *Case study research. Design and methods*. Thousand Oaks, CA: Sage.

APPENDIX A
CHART OF ATTENDEES

				C	C				P/F		
Name	Race	SES	G	M	S	L	TotInv	TotATT	M	S	GPA
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16-79											

Name – given a number to assure anonymity

Race – 1 = White, 2 = Black, 3 = Hispanic, 4 = Multicultural, 5= Asian, 6 = Other

SES – 1 = Free lunch, 2 = Reduced lunch

G = Gender- 1 = Female, 2 = Male

C = Class

1 = Math

2 = Science

L = Level of class (1 =Technical, 2 =College Preparatory, 3 =Honors, 4 =Gifted, 5= Advanced Placement)

Tot. Inv. = total tutorial sessions invited to

Tot. Att. = total tutorial sessions attended

P/F = 1 = Pass or 2 = Fail

GPA = overall grade point average

APPENDIX B

STATISTICAL RELATIONSHIP OF THOSE STUDENTS ATTENDING THE
CROSS-AGE TUTORIAL PROGRAM

Number										
1	2	3	4	5	6	7	8	9	10	11
Name	Ethnicity	F/R Lunch	Gender	Class	Level	Total Invited	Total Atten.	P/F	Final	GPA
1	2	1	1	1	2	2	1	2	62	72.67
*1	2	1	1	2	2	4	1	2	64	72.67
2	5		2	1	3	0	1	1	80	84.75
3	2		1	1	1	2	1	1	73	72.5
3	2		1	2	1	4	3	2	65	72.5
4	1		2	1	2	0	1	1	86	87.87
5	2		1	2	4	3	1	1	70	77.167
6	1		1	2	3	0	1	1	82	86.25
7	1	1	1	2	1	2	3	1	70	73.833
8	1		1	1	2	4	2	2	48	58
8	1		1	2	2	4	2	2	57	58
9	1		2	1	2	2	3	1	71	82.67
10	1		1	1	1	2	1	1	71	81.33
10	1		1	2	1	1	1	1	71	81.33
11	2		1	1	3	4	15	2	65	83.33
12	2		1	1	2	4	9	2	55	68
12	2		1	2	1	4	8	2	58	68
13	1		2	1	2	1	3	1	79	88.12
14	1		1	1	2	1	1	1	70	74
14	1		1	2	1	3	2	2	67	74.16
15	2		2	1	2	4	1	1	74	16
16	1		1	1	2	1	5	1	74	79.16
17	5	1	1	1	3	3	12	1	70	79.83
18	4		2	2	3	0	19	1	79	85.83
19	1		2	1	2	4	2	2	56	80.33
20	1		2	1	2	4	2	2	60	75
21	1		1	2	3	4	2	2	64	76
22	5		1	2	2	2	1	1	77	77.66
23	3		1	1	2	4	7	2	60	79.83
24	1	1	1	2	1	4	4	2	56	69.16
25	1		1	1	2	2	3	1	75	74.66
25	1		1	2	3	4	3	2	64	74.66
26	1		1	1	1	4	1	2	62	73.38
26	1		1	2	1	4	1	1	72	73.38
27	2		1	1	2	3	1	2	44	63.16
27	2	1	1	2	3	3	1	2	49	63.16
28	1		2	1	1	4	1	2	65	67.83
28	1		2	2	1	4	1	2	63	67.83
29	2		1	1	2	4	4	2	63	72.83
29	2		1	2	1	3	4	1	71	72.83
30	2	1	2	1	2	4	1	2	63	71.66
30	2	1	2	2	1	1	1	2	62	71.66
31	1		1	1	2	4	1	2	47	57.87
31	1		1	2	2	4	2	2	51	57.87
32	2	1	2	2	1	4	4	2	61	76.83
33	1		1	1	2	2	9	1	70	85.16
34	2		2	1	3	3	1	1	70	79.16

35	2	1	1	1	2	2	2	1	73	84.5
35	2	1	1	2	3	1	2	1	77	84.5
36	5		2	2	2	2	1	1	73	80.66
37	2	1	2	1	2	4	1	2	62	73.83
37	2	1	2	2	1	4	1	2	68	73.83
38	2		1	1	2	1	4	1	74	83.33
38	2		1	2	2	1	6	1	80	83.33
39	2	1	2	1	2	3	1	2	66	65.85
39	2	1	2	2	1	4	1	2	57	65.85
40	1		2	1	3	1	1	1	75	85
41	5	2	1	1	3	2	1	1	71	85.33
42	2	1	1	2	1	4	8	2	45	70
43	2		2	1	2	0	20	1	83	84.5
44	2		2	1	2	4	3	2	55	57.66
44	2		2	2	2	4	3	2	59	57.66
45	2	1	1	2	1	1	1	1	70	76.83
46	1		2	1	2	0	1	1	78	85.43
47	1		2	1	2	1	3	1	73	81.83
48	2		1	2	3	4	1	2	66	80
49	2		1	2	3	4	2	2	66	74
50	2	2	1	1	3	3	6	2	65	74
51	2	1	2	1	3	2	3	2	65	78.14
51	2	1	2	2	3	3	2	1	71	78.14
52	3	1	1	1	2	2	3	1	76	79.44
53	2		2	1	2	0	34	1	79	86
54	1		1	1	2	1	1	1	77	82
54	1		1	2	2	4	1	1	74	82
55	5	1	1	1	3	4	1	2	55	72.71
55	5	1	1	2	3	4	1	2	66	72.71
56	1		2	1	2	2	5	2	63	77.5
57	1		1	1	3	0	1	1	88	89.33
58	1	2	1	2	1	4	2	2	35	70
59	3		2	1	2	4	2	2	55	77
60	3		2	2	2	1	1	1	74	77
61	3		2	2	3	1	1	2	69	79.5
62	3		2	1	3	2	2	2	68	79.5
63	2	1	1	2	2	4	3	2	57	65
64	1		2	1	2	0	2	1	74	84.85
65	2		1	1	2	1	2	1	70	74
65	2		1	2	2	4	1	1	72	74
66	3	1	1	1	2	2	1	2	63	65.66
66	3	1	1	2	2	4	1	2	58	65.66
67	5		1	2	3	1	10	1	78	83.16
68	2		1	1	2	4	3	2	66	71
68	2		1	2	2	4	6	2	65	71
69	3		2	1	2	4	1	2	65	75.84
69	3		2	2	2	4	1	2	75	75.84
70	1		1	2	2	1	1	1	77	78.56
71	1		1	1	3	1	17	1	76	80.16
72	2		2	2	2	4	1	2	63	72.66

73	2		2	1	2	4	1	2	64	72.66
74	1		1	1	2	4	1	2	48	58
74	1		1	2	3	4	1	2	51	58
75	3		1	2	2	0	1	1	76	79.2
76	3	2	2	1	1	1	1	1	70	74.66
76	3	2	2	2	1	3	1	1	70	74.66
77	1		2	1	2	4	1	2	53	63.83
77	1		2	2	2	4	1	2	63	63.83
78	2		1	1	3	2	5	1	71	84.83
78	2		1	2	3	2	5	1	74	84.83
79	2		2	1	2	4	4	1	70	77.66
79	2		2	2	2	2	5	1	70	77.66
Name	Ethnicity	F/R Lunch	Gender	Class	Level	Total Invited	Total Atten	P/f	Final	GPA

* = repeat number indicates that the student attended both math and science tutoring.

APPENDIX C
TUTORED POPULATION QUESTIONNAIRE

DO NOT WRITE YOUR NAME ON HERE

Please fill out the below to the best of your knowledge about your experience with the Freshman Academy at Pinewood High School.

Age – Circle 12 13 14 15

Gender – Circle Male Female

Ethnicity – Circle White Black Asian Hispanic Multiracial Native American

DIRECTIONS: These questions consist of statements about *your* attitude toward The Freshman Academy. *There are no correct or incorrect responses.* Please read each item carefully. Think of how you feel about each item.

On each item *circle* the code that most closely corresponds to how each statement best describes your feelings. Use the following response scale to respond to each of the 8 items:

SA -Strongly Agree A-Agree N- Neither D- Disagree SD - Strongly Disagree

SA A N D SD 1) Tutoring helped me feel like I can do better in math and/or science

SA A N D SD 2) Tutoring helped give me the motivation to want to pass

SA A N D SD 3) Tutoring helped me grow academically as a student

SA A N D SD 4) Tutoring positively affects the way I see subject matter

SA A N D SD 5) Smaller tutoring sessions were/are beneficial to me

SA A N D SD 6) I felt the tutors were interested in me passing my class

SA A N D SD 7) My tutor and I relate better than my teacher and I

SA A N D SD 8) Tutoring enhanced my communication skills with others

Thank you
R. Nicometi

APPENDIX D

PARTICIPANTS' RESPONSES TO EACH QUESTION ON THE LIKERT-TYPE
QUESTIONNAIRE

Participants' Responses to Each Question on the Likert-type Questionnaire

Number	Age	Gender	Ethnicity	Question							
				1	2	3	4	5	6	7	8
1	15	1	2	2	1	1	1	2	2	3	3
2	15	2	2	2	2	2	2	1	2	1	3
3	15	1	1	2	2	1	3	2	2	3	2
4	15	2	1	4	4	5	3	2	5	3	4
5	14	1	1	2	3	2	2	3	2	2	3
6	15	2	1	2	2	1	1	1	1	2	2
7	16	1	4	2	1	2	3	2	1	2	1
8	15	2	5	1	2	1	2	1	2	2	2
9	15	2	2	1	1	1	1	1	1	2	2
10	15	2	3	4	4	4	4	2	4	4	4
11	15	2	1	2	4	4	2	2	1	1	1
12	15	1	3	1	3	2	3	2	1	3	3
13	14	2	2	2	1	1	2	1	2	2	2
14	15	1	1	2	3	2	2	2	3	2	4
15	15	1	1	2	2	2	2	3	2	3	3
16	15	2	2	2	3	1	1	1	3	4	3
17	14	1	1	1	1	2	2	1	2	3	3
18	15	1	2	2	3	2	2	3	1	3	2
19	16	1	2	2	2	2	2	1	3	2	2
20	14	2	1	2	2	3	2	1	3	3	4
21	15	2	1	3	2	2	3	1	4	4	3
22	14	2	5	5	5	2	4	4	3	4	4
23	15	2	2	2	4	2	3	4	4	2	4
24	15	1	1	5	5	5	5	5	5	5	5
25	14	2	2	4	1	2	2	1	2	2	1
26	15	2	2	2	2	2	4	1	2	2	1
27	15	2	2	2	1	2	2	2	1	2	2
28	15	1	3	1	2	2	2	1	2	1	1
29	14	1	2	2	2	1	1	2	2	3	1
30	15	1	1	1	3	2	2	1	1	2	1
31	14	1	1	2	2	1	2	1	2	2	2
32	15	1	1	2	2	2	1	2	1	2	2
33	15	2	1	4	3	3	2	4	4	3	4
34	15	1	5	1	1	2	1	1	2	1	1
35	15	1	1	2	2	1	2	2	1	3	2
36	15	2	1	1	2	2	3	2	3	4	4
37	15	1	2	2	3	3	3	2	3	3	3
38	14	2	4	2	2	2	2	2	2	4	1
39	14	2	1	1	2	2	3	2	3	4	4

(table continues)

Number	Age	Gender	Ethnicity	Question							
				1	2	3	4	5	6	7	8
40	15	2	4	1	2	1	1	3	4	3	4
41	14	2	2	2	2	4	2	1	4	1	4
42	15	1	1	1	2	1	2	2	1	3	2
43	14	1	5	4	3	4	3	4	2	3	4
44	15	2	2	4	1	4	2	1	3	2	3
45	15	2	1	2	1	3	2	4	5	5	3
46	15	1	2	4	3	4	4	5	2	1	4
47	14	1	5	2	1	1	2	2	3	3	1
48	15	2	1	2	3	2	1	1	2	3	3
49	15	1	2	4	4	4	3	1	4	5	4
50	14	1	1	3	3	4	5	5	5	5	5

APPENDIX E

SUMMARY OF QUESTION RESPONSES TO THE LIKERT-TYPE SCALE
QUESTIONNAIRE

Summary of Question Responses to the Likert-type Scale Questionnaire

Question	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
1	11	27	2	8	2
2	11	20	12	5	2
3	13	23	4	8	2
4	9	24	11	4	2
5	20	18	4	5	3
6	11	18	10	7	4
7	6	16	17	7	4
8	10	12	12	14	2

APPENDIX F
UNTUTORED POPULATION QUESTIONNAIRE

APPENDIX G
QUESTIONS FOR THE PROGRAM'S FOUNDERS

The interview questions with Program Founders:

- 1) What are the programs goals and are the goals feasible and how do you know (what did/do you use to determine it)?
- 2) How are attendance records kept?
- 3) What is the process in the selection of tutors?
- 4) What type of training were the tutors given? Why or why not?
- 5) What is the programs timeframe (before, after, during school - why)?
- 6) What is the Academy's foundation (literature, research, theory)?
- 7) What are the programs cost?
- 8) Do you feel the program is reliable (is it working – how do you know) and why?

Also, how do you measure its success?

- 9) Do you feel the Academy is useful and has credibility (what is the word from others –does it work)