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# Peer Tutoring and At-risk students: The Effects of Peer Tutoring on Attendance Rates, Misbehavior in School, and Academic Progress for Students Identified as At Risk for Dropping out of High School

A Dissertation

Submitted To The Graduate Faculty

in partial fulfillment of the requirements for the

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Doctor of Philosophy

By

Allison Nazzal

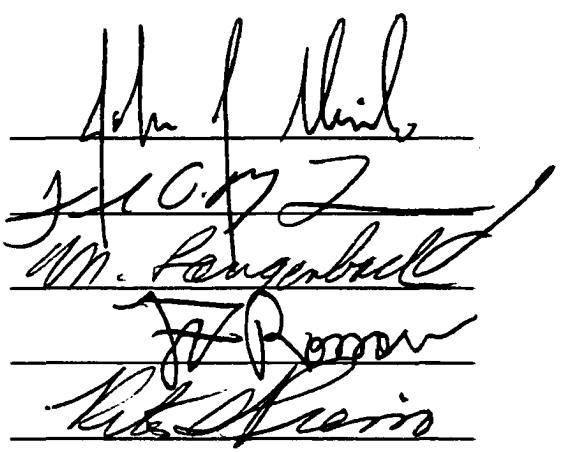
Norman, Oklahoma

2000

**Peer Tutoring and At-risk students: The Effects of Peer Tutoring on Attendance Rates, Misbehavior in School, and Academic Progress for Students Identified as At Risk for Dropping out of High School**

A Dissertation APPROVED FOR The
Department of Educational Leadership and Academic Curriculum

BY



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## Abstract

This study was an examination of how participation as a mathematics tutor would affect middle school students identified as at risk for dropping out of high school. Utilizing both quantitative and qualitative techniques in a quasi-experimental design, this study examined how participation as a tutor affected students identified as at risk due to low socioeconomic status and one or more of the following risk factors previously identified in the literature as factors that put students at risk for dropping out of school: failure in school or on standardized tests, poor attendance in school, and misbehavior in school. Additionally, this study examined how tutoring affected other factors that may put students at-risk for dropping out of school: perceptions of the relevance of school, perceptions of success in school, and feelings of alienation in school.

When at-risk students who participated in a six-week tutoring project were compared to at risk students who did not participate as a tutor, significant differences were found in academic performance in math class and on the state standardized test of mathematical performance. Significant differences were not found in attendance rates between the two groups during the tutoring period; however, the tutors missed far fewer days while tutoring than in the six-week period prior to tutoring. The qualitative data indicated that during the tutoring period the tutors were both internally and externally motivated to attend school. Significant differences were not found in the number of incidences of misbehavior in school between the two groups; however, the qualitative data indicated that the tutors improved their behavior in the classroom, while the non-tutors did not. Qualitative data from the study indicated that tutoring reinforced the

tutors' perceptions of the importance of school. improved their perceptions of how well they thought they were doing in school, and decreased feelings of alienation. Both the qualitative and quantitative data of this study supported the use as peer tutoring as an alternative means of lessening the potential effects of several factors that put low socioeconomic students at risk for dropping out of school.

# Chapter One

## Introduction

Educational research in the last ten to fifteen years has focused much attention on students identified as at-risk. These are students who drop out of school before graduation. With few exceptions, research has indicated that students who drop out of school dramatically reduce their employment and earnings potential (Polk, 1984). In addition, research has indicated that students who drop out of school are more likely to commit a crime that leads to incarceration (Thornberry et al., 1985).

While the purposes and findings of research on at-risk students have been varied, some findings have been quite consistent regarding time, purposes, and methodologies. Research indicates that four factors contribute significantly to a student's decision to drop out of school: socioeconomic class, attendance, low achievement test scores or school grades, and misbehavior in school (Alpert & Dunham, 1986; Velez, 1989).

The socioeconomic status of students has consistently been identified as the most important correlate of school failure and dropping out (Coleman, 1989; Ekstrom et al., 1986; Fehrmann et al., 1987; Rumberger, 1987). Compared to students from middle or upper socioeconomic backgrounds, students from lower socioeconomic backgrounds are more likely to drop out of school. Explanations for why this occurs currently focuses on the lack of "cultural capital" and "human capital" available to these students (Bennett & LeCompte, 1990).

Cultural capital, a term first made popular in the educational press by critical researchers such as Bennett & LeCompte (1990) but based on the work of Bourdieu &

Passeron, (1977) has been used to describe a variety of family characteristics that influence a child's school success. Most commonly found in middle-class and upper-class families, these characteristics are valued by our society and, as a reflection of that society, our schools. The ability to read is culturally valued; thus books are cultural capital because they provide the means for learning to read. Students who live in homes with parents of reduced socioeconomic means are less likely to have regular access to books. Computers and a variety of educational experiences within the community, such as trips to the local museum, can also be included as cultural capital. They too often are not available to lower socioeconomic students.

The human capital a parent can provide their child also contributes to school success or failure (Bennett & LeCompte, 1990). Human capital includes the human resources available to a person as a means to obtaining cultural capital Students from low socioeconomic homes are less likely than their higher economic counterparts to have parents who are able to spend time with them encouraging their studies or tutor them. Their parents are more likely to have completed less than a high-school education and are more likely to work longer hours than parents from a higher socioeconomic class. Thus, the parents of lower socioeconomic students often have neither the ability nor the time to help them with their studies, especially as they enter the high-school years when the curriculum becomes more advanced.

Without this cultural and human capital, many students from low socioeconomic backgrounds find themselves continually trying to "catch up" to their more advantaged peers and to the expectations of their schools. Eventually, many give up and simply drop

out of school. Intervention, in an effort to prevent these students from dropping out of school, continues to be a worthy field of study.

Research on at-risk students has also consistently indicated attendance as an important predictor of dropping out of school (Velez, 1989). The most obvious connection between attendance and dropping out of school is the difficulty students with poor attendance records have in maintaining grades. Failure in classes often prompts them to leave school. Just as important are the effects of marginal or poor attendance on the social relationships developed in school that otherwise might serve to keep students in school. When students do not attend school regularly, they do not develop close relationships with others (peers, teachers, counselors) at the school. Consequently, they often feel isolated and alone at school, thus assigning school little significant value in their lives.

Attendance, as a predictive factor in dropping out of school, is closely related to socioeconomic status, because socioeconomic status can affect attendance rates. Students from lower socioeconomic backgrounds often miss school for reasons related to, but *not* isolated to, socioeconomic background (Velez, 1989). Their parents may request them at home to care for younger siblings. Their parents may request them to work for wages. Too often, their parents may not be aware that while they are working or while they are sleeping after a "graveyard" shift, their child is not at school. Finally, their parents simply may not value education and are willing to "call in sick" for a child who is not ill.

Misbehavior in school is the third factor that research on at-risk students identifies as a predictor of dropping out of school (Alpert & Dunham, 1986; Polk, 1984). Misbehavior in school is the first step of non-passive resistance to school for students

who are alienated from the school (Bennett & Le Compte, 1990). For alienated children, the school and its curriculum are often seen as "irrelevant" to their futures. Students often see school rules as a form of domination by those in power, namely teachers and administrators. For the alienated child, rebelling against the school--its curriculum, rules, and procedures--is a form of "acting out" the frustration he or she feels.

The problems previously described that place students at risk were highly publicized in 1983, with the publication of A Nation at Risk (National Commission on Excellence in Education, 1983). Numerous other problems were described, including problems with the curriculum. The report prompted educational reformers to call for a "return to the basics", but there were others who advocated community service as a means of improving schooling (Boyer, 1983; Goodlad, 1984).

John Goodlad's A Place Called School (1984) was greatly publicized and touted by the educational community as a thoughtful consideration of what needs to be done to correct our schools. In it, Goodlad proposed that service should be included in school programs. He argued that service, because it is active and meaningful, would reduce failure in school; improve attendance and discipline problems; and reduce the alienation felt by many students. Others such as Boyer (1983), a long time advocate of service, proposed that service should be made a graduation requirement. In addition, a national commission, charged with proposing solutions for the publicized failure of schools in A Nation at Risk, advocated service opportunities for middle school students. (Carnegie Task Force on Education of Young Adolescents, 1989). In 1990, despite the "back to basics movement" that threatened to eliminate the possibility of the growth of service in the schools, President Bush signed into law the National and Community Service Act.

The act provided federal funds for schools to implement service programs in their curriculum. America's political leaders had finally affirmed the service in schools that educational reformers had long advocated.

Due to the recent political attention to community service, advocates of service learning in the schools can now draw on a rapidly increasing body of research that supports this concept in schools. Although recent research has produced mixed results, it has suggested that service has positive effects on student academic development (Cohen et al., 1982; Conrad & Hedin, 1982; Hedin, 1987) and social development (Conrad & Hedin, 1982; Hamilton & Fenzel, 1988; Newmann & Rutter, 1983; Waterman, 1993). Other studies have suggested that service may improve behavior and attendance.

However, the students who might most benefit from service, those identified as at-risk for dropping out of school and attending school in a traditional setting, have rarely been included in service or in research on the effects of service. To fully evaluate the effectiveness of service and to prevent the current inclusion of service in schools from becoming just another educational fad, additional research is needed on the effects of service on at-risk students.

## Statement of the Problem

Low socioeconomic status, low attendance rates, misbehavior in school, and failure in school have all been identified as powerful predictors of students who are at-risk of dropping out of school. Nonetheless, students who view school as relevant to their lives, view themselves as successful in school, and who have positive feelings of belonging in the school have been identified as more likely to remain in school, despite

other factors that put them at risk for dropping out of school. Participation as a tutor in a service learning project may lessen three of the four risk factors: attendance, misbehavior in school, and failure; and improve perceptions of school relevancy, success in school, and belonging, thus reducing the number of students who drop out of school. The purpose of this study is to investigate the effects of student participation as a tutor in a service learning project on school attendance rates, incidents of misbehavior, academic performance, perceptions of school relevancy, perceptions of success in school, and feelings of alienation among students identified as at risk.

## Research Questions

The following questions are to be investigated in this study:

1. What effect will participation in a tutoring service learning project have on the attendance rates of students who are identified as at-risk for dropping out of school?
2. What effect will participation in a tutoring service learning project have on incidents of misbehavior at school for students who are identified as at-risk to dropping out of school?
3. What effect will participation in a tutoring service learning project have on the mathematical academic performance of students who are identified as at-risk of dropping out of school?

4. What effect will participation in a tutoring service learning project have on students' perceptions of the relevance of school?
5. What effect will participation in a tutoring service learning project have on students' perceptions of their academic performance in school?
6. What effect will participation in a tutoring service learning project have on students' feelings of alienation?

## Limitations of the Study

Sample size (n=68) poses a limitation to the study. This represents the tutors in the experimental group who tutored (n=34) and the students in a control group who did not tutor (n=34). The first decision regarding sample was to include only eighth grade students in the study. Including seventh grade students in the study would have broadened the sample but it may have had negative effects on the results of the study. Many of the students had failed math or had little confidence in their abilities. It was believed that an eighth grade student who had failed the math Texas Assessment of Academic Skills (TAAS) test or who was currently failing in math would be able to tutor the subject without frustration. These students were learning pre-algebra, a mathematically advanced curriculum. However, seventh grade students who had failed the math TAAS test or who were currently failing in math would very likely be at or below the level of the sixth grade students they would be tutoring. Their level of

frustration might possibly be too great to benefit from the tutoring experience. Consequently, this sampling decision further narrowed the potential sample.

In addition, to ensure that students who participated as tutors were truly at-risk, a multi-level sampling technique was used with low socioeconomic class at the first level of criteria for inclusion. From that sample, students who met any of the additional criteria were included in the sample. These criteria included misbehavior in school, marginal attendance, school failure, or failure on the TAAS test.

A final decision was made that only slightly limited the sample size. Only students who agreed to participate, after being selected for the sample, were included as tutors. This was done in an attempt to eliminate the possibility of negative effects due to student feelings of coercion. The remaining non-volunteer students who met the sampling criterion were purposefully sampled to equally represent the at-risk categories of the experimental group. The sample that remained for the experimental group, while small, met the at-risk criteria and the need to avoid coercion.

The effects of attrition were also a concern. Because service was voluntary, some attrition was expected as the weeks passed. Students were required to submit time logs indicating their service times weekly. However, missed busses and absences on the part of tutor and/or student did interfere with tutoring in the mornings.

Outside influences such as drug-use, gang-involvement, and abuse or neglect in the home could not be controlled for in this study. Some of the tutors may be influenced by each of these. The effects of participation among these students may not be large. However, qualitative data in the form of interviews, journal writing, and seminar

transcripts may provide insight on the effects of participation among these students, despite home influences.

A further limitation of the study is related to the sample. The racial, ethnic, and gender makeup of students was not controlled. There may possibly be differences in these areas, in terms of the effects of tutoring on the students. Nonetheless, because the literature indicates that low socioeconomic status is the most important indicator of at-risk students dropping out of high school it was decided that the sample should represent low socioeconomic students from as many backgrounds as possible.

A further limitation of the study is that the sample may not be a good representation of at-risk students in other schools, districts, communities, or geographic regions of the United States. Differences may occur in other schools with different populations of at-risk students. For example, a low socioeconomic Hispanic tutor in a suburb may react differently to tutoring than a similar student in a large urban school district or a rural school district.

The previous schooling experiences of the students could not be controlled. Each student had a variety of teachers in the past. Their individual experiences with teachers and schooling could cause differences in how tutoring affects them. For example, the quality of the mathematics instruction previously received may make the tutors more resistant or comfortable with tutoring. However, interviews with students should give additional insights into how differing past experiences influence the outcomes of tutoring.

A final limitation of the study involves student preparation for service. While a half day or full day training session was desirable, it was not possible given administration constraints and the teaching duties of the researcher. Because preparation

is an important part of any service project, the tutors participated in an initial two-hour training session and follow-up training occurred in each of the reflection seminars, as needed. In addition, the researcher was available to students to discuss any concerns each day before and after school.

## Definition of Terms

**At-Risk Students** are defined by the researcher, based on current literature, as students who meet school district criteria and additional researcher criteria. District criteria include: students are entitled to a free or reduced lunch, or students have been retained one year or more, or students have failed one section of the state's assessment of academic skills (tests include reading, writing, and mathematics). Additional researcher criteria include: students have also been referred to the office for disciplinary action, at least once in the fourth six week grading period; students have also been identified by the attendance secretary as a student with "moderate" attendance problems.

**Student misbehavior** is defined by the researcher as: Any student behavior during the fourth six week grading period that results in a teacher or staff referral of the student to the office.

**Service Learning Project** is defined as a method:

- Under which students learn and develop through active participation in thoughtfully organized service experiences that meet actual community needs and that are coordinated in collaboration with the school and community;

- That is integrated into the students' academic curriculum or provides structured time for students to think, talk, or write about what the student did and saw during the actual service activity;
- That provides students with opportunities to use newly acquired skills and knowledge in real-life situations in their own communities; and
- That enhances what is taught in school by extending student learning beyond the classroom and into the community and helps foster the development of a sense of caring for others (National and Community Service Act of 1990).

**Tutoring** is defined as: A cross-age service experience in which an eighth grade student regularly meets with a sixth grade student to assist him or her with math skills.

**Alienation** is defined as: student attitudes toward school characterized by feelings of not belonging to the school's social structure and with student attributes that may include any of the following: a lack of student participation in school events or extra-curricular activities; student non-identification with a social group within the school; or student identification of membership within a small group only.

## Chapter One Summary

Service learning has the potential to address the needs of students considered at risk for dropping out of high school. Students selected for the study were identified as at risk due to low socioeconomic status and any of the following: poor attendance, misbehavior in school, or failure in coursework or on standardized tests. Each of these factors has been identified by researchers as important predictors of students dropping out

of high school. In addition, student feelings toward the relevance of school and feelings of alienation have also been identified by research as contributing factors to dropping out of school. This study investigates how participation as a tutor in a service learning project might affect these variables.

In the next chapter, a review of the literature will be presented. A review of recent research on at-risk students and the factors that lead to dropping out will be presented. A review of the literature will be presented for each of the variables identified by at-risk researchers as factors contributing to a student's decision to drop out of school. Finally, a review of the literature will be presented on service learning in the schools and its effects on students, with special attention given to the variables identified by at risk researchers as predictive factors in a student's decision to drop out of school.

## Chapter Two

## Review of the Literature

A good deal of research has been conducted in an effort to identify predictors of students who are at-risk for dropping out of school. This research has consistently found the following variables to be strong predictors of a student's decision to drop out of school: low socioeconomic class, academic ability, expected school attainment, self esteem, low achievement test scores, low grades, poor attendance, and misbehavior in school. (Ekstrom et al., 1986; Velez, 1989; Wehlage & Rutter).

Wehlage and Rutter (1986) in their national study of 30,000 tenth graders found that expected school attainment, achievement test scores, socioeconomic status, and grades were the most powerful variables in a student's decision to drop out or remain in school. Using a multivariate discriminant analysis to test each variable against groups identified as "drop outs", "stay ins", and "college bound", they also found that with "academic functions" such as achievement scores and grades controlled, other variables best discriminated between those who dropped out and those who remained in school. Those variables include attendance and behavior and were described by the authors of the study as the social context of schooling. The researchers suggest that educational policy makers should pay more attention to the social context of schooling and how schools affect different groups in different ways.

Wehlage and Rutter's study is important to the purposes of this study, because it suggests that schools can address the needs of students, if they address the variables described as the "social context" of schooling. While much research identifies low socioeconomic status as a powerful predictor of dropping out, there is nothing the schools

can do to eliminate it as a variable. However, if as the researchers suggest, schools can address the estrangement at-risk students feel toward school, other powerful predictors of dropping out such as attendance and misbehavior in school can be reduced. Participation in a service learning project may possibly address the social context of school. Consequently, low socioeconomic students may feel less estranged and attendance and behavior may improve.

Attendance Rates and the Marginal Student

Research on at-risk students has often focused on attendance rates as a major indicator of dropping out. Overall, the literature suggests that students are more likely to attend school when it meets their affective needs and when it is seen as relevant to their future work life. Students who feel good about themselves in school and who believe the courses they are enrolled in are relevant to their future, in terms of preparing them for the world of work, are more likely to attend school and remain in school than those who lack this belief (McCabe et al, 1992).

School Relevance and Attendance

Motivation theory and research suggests that students are more likely to attend school if they believe that attending school will satisfy their needs or benefit them in the future (Wood, 1991). Many researchers have found that school relevance is a major predictor of who will drop out of school (Alpert & Dunham, 1986; Ekstrom et al., 1986). To experience success with one's effort, is one of the most basic needs we all have. Yet schools do not always give students opportunities to experience success. Alpert and Dunham (1986) argued:

> We need to recognize the importance of creating situations in the schools in which all youths can excel and feel a sense of accomplishment. Institutional rewards are not (emphasis added) limited to academic success, but are organized around this aspect of the school. Youths who are unsuccessful [in the classroom] are constantly reminded of their misfortune by peers as well as by an absence of institutional rewards. (p. 357)

In addition, school relevance means that students must see the connections between what is being taught in school and their working future. Maylor (1987) found perceptions of "disconnectedness" a major factor influencing attendance rates.

A good deal of research has been conducted on how to make traditional schooling more relevant to students, and thus improve attendance rates. The term traditional schooling is used here to distinguish it from alternative programs such as vocational and career education programs. While research suggests these programs effectively improve student perceptions of relevance, improve attendance rates, and reduce drop out rates (Maylor, 1987; Okolo & Sitlington 1986), the purpose of this study is to promote school relevance and improve attendance rates within a traditional setting. A good deal of research suggests that involving students in real life problems and community service are effective means of making school relevant to them (Blyth & Kroenke, 1996; Conrad & Hedin, 1991; Shumer, 1990, 1994).

These findings have been consistent across cultures. For example, Bruce (1990), found that Alaskan female teenagers reported low self-esteem, isolation, and alienation significantly influenced their decision to leave school. Native Americans reported teacher

indifference as a significant factor in leaving school (1983) and Chinese junior high students identified care and concern among teachers as significant factors in their decision to continue attending school (Guolin, 1988).

Special Education Students and Attendance

Attendance rates among special education students are of particular concern among educators, because their learning disabilities place them at risk for dropping out of school. Research concerning special education students and their attendance rates is important to the purposes of this study, because many of the students identified in the sample as having marginal to poor attendance rates are likely to be classified to some degree as special education students. Research indicates that drop out rates are significantly higher for mildly disabled mainstreamed students than they are for non-disabled students (Lichtenstein & Zantal-Wiener, 1988). Blackorby, Edgar, and Kortering (1991) reported that 85% of mildly disabled students surveyed dropped out of school. Unfortunately, very little research has been completed on the attendance rates of special education students or the factors that lead to poor attendance as a potential precursor to dropping out of school.

One recent study provided useful information concerning attendance rates and special education students. McCabe et al. (1992) conducted a comparison analysis among special education students with high, moderate, and low attendance rates. Although the purpose of their study was to investigate the effects of job and affective skill training on special education students' attitude toward school, the quantitative and qualitative data of this study provides insight into the factors that influence attendance rates for all students.

McCabe interviewed and surveyed 78 mildly disabled special education students who had been previously identified as at risk for dropping out of school and who were attending an alternative work preparation program. The alternative school was a work study program, located in an urban school district. At the initiation of the study, 37% of the students were high attenders (above 84% attendance), 24% were moderate attenders (70 to 84% attendance); and 38% were low attenders (below 70% attendance). The researcher used school district guidelines to categorize attendance (McCabe et al., p. 9).

The researcher utilized an interview response form that focused on job-related skills (relevance) and affect. The research methodology paid special attention to validity. A pilot investigation, tape recording of the interview response form, and the use of trained interviews all addressed the unique needs of the special education subjects.

Chi square analyses were used to examine the variance of the responses of the high, moderate, and low attenders' attitude toward school for each item on the questionnaire. The only question that discriminated among the attendance groups was Item number 3: "In this school I feel like I fit in." The significant chi square cell was low attenders' preference for response b: "No, I do not feel like I fit in". Nine of the 11 low attenders who selected "b" preferred the company of neighborhood friends rather than the new kids in the building.

The researcher suggested that, based on post-investigation interviews, low attendance students did not value membership in a group associated with and cultivated within the school. The student responses indicate that these special education students do not want to be associated with other special education students. For example, they replied

"I'd rather chill with my friends"; "These kids are special eds. I'm not like them"; "On my block no one calls me special ed" (pp. 16-17).

This study suggests several important factors that contribute to poor attendance among special education students. The factor most relevant to the purposes of this study is alienation. Students who feel alienated in school because they have not identified themselves with a group are less likely to attend school. Alienation can be more of a problem for the special education student. They do not wish to be identified as a member of the "special education group", yet they believe teachers and students assign them to the special education group.

Special education students need to be given more opportunities to develop relationships with non-special education students, in order to form an identity with a group they value. Participation in a service project and working with a variety of other students may help them to build the relationships with others they desire—relationships not based on their special education status. This, in turn, might help to improve their perception of how well they fit into the school and improve their attendance.

Marginal Students and Misbehavior in School

A large number of studies have suggested that misbehavior in school is one of the factors that places students at-risk for dropping out (Alpert & Dunham, 1986; Eckstrom et al., 1986; Velez, 1989). Deviance theory suggests that for many students the many rules of school, the required courses, and even the required lunch periods, represent an undesirable submission to authority. Research on at-risk students has identified deviance, in the form of misbehavior in school, as an important predictor of dropping out of school. Most of this research has as its sample students who have already dropped out. However,

the purpose of this study is to investigate how service-learning projects might improve the attendance, behavior, and grades of marginal students still in school who are identified as at risk that we might keep them in school.

In their 1986 study, Alpert and Dunham focused on the marginal students who stay in school. The purpose of their study was to develop a prediction model that would identify the most important factors that keep academically marginal students in school, despite their marginal status or being at risk for dropping out of school. The results of their study suggest that avoiding misbehavior in school is a strong predictor of marginal youth remaining in school.

The researchers identified academically marginal students as students who met the Dade County, Florida school system profile of at risk for dropping out of school. This profile included: students with sporadic attendance, extremely low grade averages, and low achievement scores (p. 346). Two comparison groups were interviewed: marginal youth who had remained in school and marginal youth who had dropped out of school. Seventy interviews were conducted of the dropouts and 57 interviews of the students who remained in school.

The researchers analyzed the data using a stepwise discriminant analysis of the dependent variable (staying in school) using 14 questions. The nine significant variables yielded a canonical correlation of .882 and classified 94% of the cases correctly with the model (p. 351). They reduced the number of variables in the model to include only the most powerful in conceptual category. The final model included:

1. Misbehavior in School 2. School Relevance 3. Success in school

4. Parental Monitoring 5. Peer Influence

The results of the study, being able to predict 84% of the high-risk students who would remain in school, are the most important finding of Alpert and Dunham's study. Moreover, the three strongest predictors of students who will remain in school found by the researchers are most important to the present study. (p. 353).

Alpert and Dunham identified five variables as powerful predictors of marginal youth remaining in school, and all were found to be significant and independent, as evidenced by low inter item correlations. The researchers found that misbehavior in school was the most powerful predictor of any of the variables.

The second and third most powerful predictors were also school influences--school relevance and success in school. In the school relevance category only the following variable was found to be significant: Will finishing high school help you to get the type of job you want? The only significant variable in the success in school category was measured by the variable: How well are you doing in school? It measures students' feelings of success. Because all of these students had a GPA of 1.0 or below, the researchers suggested that this variable should be interpreted as broader than grades, including having friends, getting along with teachers, and excelling in extracurricular activities.

The findings of Alpert and Dunham's study are important to the purposes of this researcher's study because they suggest that the three most powerful predictors of marginal students staying in school are school influences, and thus can be addressed in schools in an attempt to keep students in school. While this study does not address the

underlying factors that contribute to misbehavior in school, other research suggests that misbehavior in school is an expression of poor self-esteem, feelings of isolation, and feelings of frustration due to lack of success in school (Calabrese & Cochran, 1990; Downs, 1991; Jenkins, 1995; Jensen, 1994; Johnson, 1993; Kaplan, 1994; Parsons, 1996; Roquemore, 1991; Saner & Ellickson, 1996). Participation in a service learning project has the potential to decrease misbehavior in school, and thus increase the probability of marginal students remaining in school, because it can address the underlying factors contributing to misbehavior such as poor self-esteem and feelings of failure.

Service Learning

The theoretical and philosophical foundations of service learning are most often linked with John Dewey. Those who advocate service, do so with Dewey's theory of experience and educational philosophy as their starting point.

Dewey's ideas about *how* learning takes place provide the theoretical foundation for service. Dewey described how students learn in Experience and Education (1938/1963). He argues that students learn through experience or interaction with their environment. This premise is known as the principle of interaction. All experiences, however, are not educational. In fact, some experiences are miseducational. The value of an experience can only be determined by the way the experience contributes to the students' development. This is known as the principle of continuity.

Dewey's theory places experience at the center of education. Only through experience can students interact with a learning environment and only through experience can they learn from that environment. Advocates of service in the curriculum rely on Dewey's description of experience to promote service learning, a form of experiential

education, in the curriculum. Nonetheless, service learning advocates very often miss the more fundamental implication of Dewey's writings—namely, that service is a philosophy and not a methodology (Giles, pp. 257-260).

Dewey's philosophy of education, his ideas about *for what purpose* learning takes place, provides the philosophical backdrop for service learning. According to Dewey, all learning is the result of social experiences, and all experiences are social and communal. In his early writings, Dewey addressed the role of the school and advocated schooling as a means of enhancing the public "good" (1902/1990). Dewey extended this thinking in Democracy and Education (1916/1944). Dewey conceptualized democracy as an "associated form of living". He described democracy: "A democracy is more than a form of government, it is primarily a mode of associated living, of conjoint communicated experience." He later wrote in Experience and Education (1916/1944) that the purpose of schooling was to develop in students the skills and attitudes that would allow them to participate in our democracy, our associated form of living, for the common good. To do so, Dewey argued that the schools would have to rebuild their connections to the community. Thus Dewey's philosophy of education suggests that genuine student learning is possible through student interaction and service to their community, for the common good. Dewey's theory of experience and especially his philosophy of education have shaped the social studies curriculum, the primary curriculum area in which service has historically been linked.

Civic or citizenship education has theoretically been a part of the school social studies curriculum for a century. Civic participation, despite varying degrees of perceived importance, has always been one of the primary goals of civic education. As a form of

civic education, community service has been included in the civics curriculum throughout this century. The Progressives of the turn of the century first promoted service as part of the curriculum, relying on Dewey and other philosophers such as William James (1910). They suggested that service could be James' "moral equivalent of war":

> What we need to discover in the social realm is the moral equivalent of war: something heroic that will speak to man as universally as war does, and yet will be compatible with their spiritual selves as war has proved to be incompatible. (p.17)

For these early progressive educators, service promised to make education a moral force. More recent educational philosophers have also relied on James' "moral equivalent of war" theme and Dewey's philosophy of education to promote the preparation of students willing and able to care for and serve others. (Martin, 1992; Noddings, 1992;).

Educational philosophers primarily concerned with the purposes of the social studies have also promoted experience or service as the means in which we can develop good citizens. Questions surrounding the aims of citizenship education are certainly not new. In Book X of The Republic, Socrates suggests that education must be for all, not just for the leaders but for the workers as well, with the development of citizens who are concerned about the welfare of the city as its primary goal. Kraft (1996) argues that "service learning...[can] bring the school and community back together, to build or rebuild a citizenship ethic in our young people.... (p.134). For those who promote service in the social studies, service provides students with the opportunities needed to build the skills, habits, and attitudes required of a citizenry concerned with the common good.

Effects of Service Learning on Students

Service is a complex field, because historically it is has been many things to many different people. It is viewed as a philosophy (Giles, Porter Honnet, & Migliore, 1991) and as both philosophy and methodology (Stanton, 1987). Stanton argues that service learning is a philosophy of experiential education that suggests methods that can inform all service learning programs.

To further complicate a review of service learning, those who initiate service learning have multiple purposes, among them: social action, voluntary service, cognitive and problem solving skill development, academic knowledge, leadership development, and job training. In addition to the wide variety of purposes for which service learning is initiated, a wide variety of programs also exist. Shumer et al. (1993) identified at least 11 forms of school-based service learning, and 15 forms of community-based systems.

What do we know about service learning as currently practiced? In 1995, a new ERIC database was created (the National Service-Learning Database) in response to a congressional call for information to support the development of high-quality service learning programs. Shumer and Belbas (1996), both participants in the creation of the database, summarized the database and the research findings included in the database.

The database includes information on more than 900 service learning programs, and more than 900 articles, books, and other written and visual material (p. 211). Officials for each service learning program were surveyed concerning their program, specifically about the types of activities, general subject focus, and expected program benefits for participants. Responses were obtained from officials from 938 service learning programs.

To determine the most common service learning activities, respondents were allowed to choose as many descriptors as they wished from an original list of 42 activities. The ten most frequently chosen program activities (representing 46% of the total number of items selected) by category were: Mentoring (Education); Cross-age tutoring (Education); Academic instruction (Education). Hospitals, nursing homes, hospices (Human Services). Social service (Human Services). Neighborhood improvement (Community Improvement); Intergenerational (Education); Peer Tutoring (Education); Peer Mentoring (Education); and Food bank, food drive, soup kitchen (Human Services). Differences among urban, suburban and rural programs were found (p. 214).

Respondents to Shumer and Belbas' survey were also asked to describe the major subject foci of their program, by selecting from 64 terms. The terms were analyzed to identify themes and ten general subject focus categories were developed. Findings significant to the purposes of this researcher's study follow. Service Learning was the most commonly selected major subject focus of the programs. None of the general subject categories developed for "academics" as the subject foci ranked in the top 10, and academic achievement ranked 25$^{th}$ out of the 64 terms. Student development (categorized as skill development or psychosocial development) ranked 5$^{th}$. Self-esteem (categorized as psychosocial development) ranked 3$^{rd}$. Social Responsibility (categorized as Psychosocial development) ranked seventh. Student volunteers (categorized as Target Populations) ranked eighth (p. 215).

Shumer and Belbas found very few differences among urban, suburban, and rural programs. However, most of the differences are important to the purposes of this study.

Urban programs were more likely to select target populations as the focus of their program, and reported up to a 42% greater focus on disadvantaged youth and a 38% greater focus on high-risk students than did suburban or rural programs (p. 216). Suburban programs were the least likely to select target populations as the focus of their program.

To analyze the expected program benefits for participants (as service providers), Shumer and Belbas asked participants to identify terms that best described the major program benefits for the participants. Twenty-three benefit terms were divided into 4 general categories: basic education, vocational education, participant development, and life skills. Participant development, vocational education, basic education, and life skills were most frequently chosen (in descending order). No significant differences were found among urban, suburban, and rural school districts (p. 214-15).

Shumer and Belbas' survey analysis of service learning programs suggests three reasons why the proposed research study is needed. First, additional research is needed to measure the effects of service learning on disadvantaged and at-risk youth. Disadvantaged and at-risk youth are seldom included in service learning projects. Service learning has the potential to especially benefit disadvantaged and at-risk youth. Secondly, additional research is needed on the effects of service learning on disadvantaged and at-risk youth in suburban settings. According to Shumer and Belba's findings, suburban and rural schools seldom target disadvantaged and at-risk youth for participation. Participants in this study will be disadvantaged and at-risk youth attending a suburban school.

A third finding from Shumer and Belba's survey that supports the need for this study is the widespread use of peer tutoring as a service project. The popularity of peer

tutoring is based on research that suggests it is highly effective, especially with middle school youth. A broad base of material and research is available to inform the design of the study. Findings of this study will serve to provide additional evidence on the effects of tutoring, and new evidence regarding its effects on disadvantaged and at-risk students.

Finally, Shumer and Belba's survey supports the desired outcomes of this study (improved behavior, attendance, and academic performance). The researchers categorized all of these outcomes as "Basic Education". Yet, their analysis of service learning programs shows that little attention is currently being given these outcomes (a ranking of 3rd among 4 categories of program benefits). This is likely attributed to the mixed results of research, to be discussed later, on the effects of service learning on these outcomes. Consequently, additional research is needed on the effects of service learning on these outcomes. In addition, this study will provide additional information concerning the effects of service learning on Shumer and Belbas' Participant Development category (ranked 1st among the 4 categories of program benefits).

Research on the effects of service learning

Due to the national attention given service learning, a variety of research and evaluation studies have been conducted on this area of education. Both qualitative and quantitative studies have taken place. However due to the complex nature of service and the difficulty of isolating student variables, few recent studies rely solely on quantitative measures to measure student outcomes.

In a recent experimental study Marcus, Howard, and King (1993) found positive academic effects for students. However, the students involved in the study were enrolled in a university political science class. Krug's study (as cited in Kraft, 1996) indicated

statistically significant growth for at-risk students involved in a service program. Growth was found at the .01 and .05 level on measures of potency, activity involvement in the community, and self-concept.

Because of the difficulties of designing good quantitative studies, and because of the wide variety of service program goals, there is a general lack of solid quantitative evidence on the effects of service. Kraft (1996, p. 143) argues that research in the area of academic effects is the most needed, because little solid evidence currently exists. The studies pertinent to this investigation include studies on the effects of student participation in service learning and academic learning, misbehavior in school, self-esteem, school attendance, and service learning methodologies.

Educators and politicians alike have promoted service learning as a means to improving academic learning. Research indicates that gains in academic learning are dependent on the type of service performed and the measurement tools employed by researchers (Hamilton & Zeldin, 1987). More specifically, there is strong evidence that service can improve academic learning, when students participate as peer or cross-age tutors and when researchers employ a measurement tool that measures the academic knowledge they actually tutored (Cohen et al, 1982; Hamilton & Zeldin, 1987; Hedin, 1987).

Using the research technique of meta-analysis on tutoring studies, Hedin (1987) and Cohen (1982) found consistent increases in reading and math achievement scores for tutors and tutees. While the gains were modest, they were consistently positive for all studies and especially for the tutors. In an earlier study, Houser (1974) also found gains in the development of reading skills among students participating as student-aides for

elementary students. In a summary of research on service and academic performance, Hedin (1991, p.746) suggested that these positive gains are likely attributable to the "school-like" nature of tutoring, when compared to studies on other forms of service.

Hamilton and Zeldin (1987) also used meta-analyses to investigate the effects of service on academic knowledge. This investigation; however, included a variety of forms of service, not just tutoring. The researchers found consistent gains in factual knowledge, but only when the researchers used tests designed to measure the specific kinds of information and skills that the students were likely to encounter in their field experience. No gains were found on tests such as general tests of knowledge.

The results of these two studies are important, because they suggest that participation in a peer tutoring service project may improve mathematical skills of tutors. However, other causal factors may be at work in the research studies above that indicated positive gains in academic performance. For example, what is the relationship between tutoring and self-esteem or attendance rate, or behavior, or attitude toward school and academic performance? The causal nature of the improved academic performance is complicated, and deserves further investigation. However, due to the numerous other factors that may also concurrently influence academic gains, research focusing solely on academic performance as a student variable should be treated cautiously. A research study, such as the one proposed, that examines academic performance and other variables such as attendance, behavior, and attitude toward school may shed light on the relationship between service and academic performance.

Although misbehavior in school has been identified as a major predictive factor in dropping out of school, very little research has been completed that examines the effects

of participation in service on student behavior. Follman and Muldoon (1997) analyzed data for Florida Learn and Serve. Florida's service learning program is one of the largest federal/state sponsored service programs in the nation. A large percentage of the participating schools reported improvements in behavior. (They also reported improvements in attendance and academic performance).

Calabrese and Schumer's 1986 was the only study located that was specifically designed as a service project for students with behavior difficulties, to analyze the effect of service participation on misbehavior. Participants were junior high students who had been identified as students with behavior difficulties. The researchers found that after participation in service, school authorities reported fewer disciplinary problems. In addition, psychological measures of isolation and alienation were used, with students scoring lower on these measures after participation. An earlier study, Martin (1977) used the case study approach to investigate the effects of voluntary participation in service among students identified with school behavioral problems. Martin found that by the end of the year, the student participants' behavior had improved. Interviews with teachers and student journals were used to measure this effect

While little research has focused primarily on student behavior as a variable outcome of service, a good deal has been completed on the factors that may contribute to student behavior, for example self-esteem. Using qualitative and quantitative analysis, Conrad and Hedin (1982) conducted a nation-wide survey of 4000 students involved in service activities. Considered the leading researchers in service learning and often cited in the literature for service learning and for at-risk students, their study was a thorough

and careful examination of the attitudes of students involved in service, student outcomes, and program variables.

The researchers analyzed the journals of 4000 high school students participating in service four days a week. In student writing, they found commentary to support the generalization that participating in service improves student attitude toward the adults at school and school itself. Similarly, Luchs (1981) found that urban high school students who were involved in service gained more positive attitudes toward others, a greater sense of self-efficacy, and higher self-esteem than non-participating comparison students did.

According to the literature, misbehavior in school is often the result of a student's poor self-esteem (Jensen, 1994; Johnson, 1993; Kaplan, 1994; Roquemore, 1991). The effect of participation in service learning on self-esteem has been investigated in numerous studies. Researchers have found increases in self-esteem for students who perform a "helping role" service such as tutoring or helping the mentally disabled (Op. Cit. Hedin, 1991). Based on his 1989 study of students participating in service, Kelly (1989) argued that helping others generates positive changes in self-concept or self-esteem. The research compared student service participants in two experimental groups, one in which students served one-on-one and the other in which the students experienced no one-on-one contact with those served. Kelly found that the students who helped on a one-on-one personal level made significantly greater positive changes in self-concept than those in the more general non one-on-one contact service group.

Research on Program Variables of Service Learning

Many research studies have been conducted in an attempt to better understand how service learning can be most effective for students. While the purpose of the proposed study is not to investigate the components of service learning, the literature should inform how the service is conducted. From this body of research, decisions will be made regarding design, including sampling, measurement, materials, and length of service.

Reflection as a component of service learning has received much attention from researchers. Accordingly, reflection is one of the principles included in the Wingspread Special Report (See Appendix A) that often guides the creation of service learning programs. According to the report, an effective service learning program "Provides structured opportunities for people to reflect critically on their service experience." Reflection in service learning has most often been described in service learning literature as opportunities for students engaged in service to talk about and write about what they are experiencing and learning. In good service learning programs, it is a purposeful component of the service experience.

Reflection distinguishes service learning from community service projects, because students are given the opportunity to reflect on and learn from their experience. In a community service project, students might collect food for a local pantry. They collect, sort, count, and distribute. They do not reflect on why the service was needed, who will benefit from their service, or how they can improve the underlying conditions that caused the need for the service. They simply do not learn much from their

experience. This is the type of service that occurs in schools across the nation on a regular basis, and due to the absence of reflection it is not service learning.

According to Conrad and Hedin's (1991) review of service learning research, the most consistent finding of those researchers who have investigated the effectiveness of service learning is that a reflective component is very important in achieving the goals of the service experience. In their massive nation-wide 1982 study, Conrad and Hedin investigated numerous program variables using both quantitative and qualitative techniques. Using quantitative techniques, they tested a variety of program variables on student outcomes (i.e. length of service, intensity, type of service, and reflection). They found that the presence of a reflective seminar was the one program feature that made a clear difference, particularly to social and intellectual development.

A reflective seminar is a purposefully designed time for students engaged in service to come together and discuss the service. The role of the service leader is to prompt students to reflect on the experience so that they might learn from their experience, a role clearly described by Dewey (1938/1963) in Experience and Education. The proposed study will include reflection in a variety of forms, including student journals and a reflective seminar.

Other researchers have also indicated the importance of reflection in achieving program goals. Rutter and Newman (1989) examined the potential of service to enhance civic responsibility. They found with psychological measures of social responsibility that increases in social responsibility were dependent on the presence of a reflective seminar. Exum (1978) studied the effects of purposeful or systematic reflective discussions on the self-concepts of college students participating in service. The results of the study

indicated self-concept improved only when action was combined with reflective discussions.

Reflection as a program variable is not without controversy, however. Kraft (1996) was critical of the way in which most service learning programs provided for reflection. Kraft argued:

> Principle 2 [of the Wingspread Special Report (Johnson Foundation, 1989)] states that effective service learning 'provides structured opportunities for people to reflect critically on their service experience.' Based on service-learning models in literature, 'people' in this statement refers exclusively to the student: Students are required to keep journals that allow them opportunities to reflect upon their experiences in the service project.... Besides being a blatant exclusion of the partner in service, this principle merely suggests rather than requires a discourse between the service partners. It assumes that the student engages in service, thinks about what he or she has done, writes down reflections, and then hopefully receives feedback on these observations. Without a foundation grounded in the quest for shared understanding, only the student is encouraged to reflect, and he or she may do so in a vacuum. (p.138)"

Kraft's criticism of the typical service learning model is sound. Discourse between partners, as a form of reflection, should occur throughout any service project. Kraft cited a research study (Maybach, 1994) that indicated that reflection is seldom practiced as discourse between partners. Maybach found in his survey of service

programs that reflection for or with service recipients was reported in only 1% of the service learning projects. In addition, in only 4% of the projects was discourse encouraged among students and recipients regarding the effects and/or design of the study.

For the purposes of this study, reflection must be purposefully included in the design of the study. The reflection should be on going and include the tutees on a regular basis, through oral discourse. In addition, reflection in the form of purposefully created journal prompts should be created for student reflection. Finally, reflective seminars should be held often.

A second program variable that has received some attention by researchers is program length. Research indicates a positive relationship between the amount of time students participate in service and the effects of service on participants. In 1986, Newman and Rutter conducted a general survey of high school community service programs. He reported that 900,000 high school students were involved in service and that on average and across all programs, students spent 4 hours per week in service. Research suggests, but is not conclusive, that a serious weakness of many service learning programs seems to be that students do not engage in service often enough or for a long enough period of time for the service to affect them.

Kraft et al. (1993) evaluated the effectiveness of service learning projects in the state of Colorado. More specifically the study was conducted for the state of Colorado to assess the impact of service learning on student participants in several federally and state funded programs. Programs included the K-12 Serve America program, the Youth and Conservation Corps, and higher education programs. More than 2000 middle school

through college students and staff participants in the state of Colorado were included in the sample. Their findings suggest that length of service is an important program variable.

The researchers administered a pre- and post- service learning attitude survey to the students and staff. The survey was piloted in previous research on the effects of service learning. The researchers reported that most of the programs were of a short time frame (6 to 8 weeks) and that participants engaged in service only once a week during this time.

The researchers measured a wide range of possible outcomes of service, including the following impact domains: civic/social responsibility, self-esteem, leadership, moral development, empowerment, alienation, and efficacy. Their results are pertinent to the design of the proposed study. The researchers found that there were very few items on which students made statistically significant gains in positive attitudes toward service. The researchers suggested that gains in self-esteem are possible only in long-term, intensive service projects. To test their hypothesis that many of the programs in the sample were short term and would consequently result in no significant effects, the researchers measured outcomes of the participants in programs they identified as short term, separately from others. They found no statistically significant effects either way on attitudes of students participating in the short-term service learning experiences.

The findings of the Kraft et al. study support other research that indicates a positive relationship between service outcomes and the length/intensity of service. However, most of the research to date on service learning has been quantitative in nature. Conrad and Hedin's (1982) research is the only study conducted to date that fully utilizes

qualitative methods, and their analysis of student journals suggests that subtle changes are indeed possible in a very short time. For example a student described feeling empowered the day after beginning service:

> As I walked through the hallway [of the elementary school on my first day of leading elementary children in theatre experiences], I realized what I had gotten myself into...a challenge. But as I step through the door I transform from student to person...The first day went really well, but I'm glad I don't have to go through it again. Now I return to school and become student again. (Conrad & Hedin, 1991, p. 748)

It would be difficult to develop a survey that would prompt a student to identify the outcomes of service described in the journal above. The student who wrote the above journal entry experienced on the very first day a boost in self-esteem and empowerment ("I transform from student to person") and a boost in self-efficacy ("The first day went really well,....").

It is possible that the outcomes measured in the Kraft article, self-esteem and alienation, for example, were found to be non-significant because changes in these outcomes are too subtle for a quantitative questionnaire. If qualitative techniques like those employed by Conrad and Hedin had been utilized, their results may have differed. The differences in their findings suggest that length and intensity of service is an important variable in student outcomes, but that changes in student attitudes must be measured with qualitative as well as quantitative techniques. For the purposes of this

study, students should tutor each day, with a minimum of four hours service weekly, and qualitative as well as quantitative techniques will be used to measure student outcomes.

## Chapter Two Summary

Recent research on at-risk students has added much to our knowledge about why students drop out of school. While some factors such as low socioeconomic class remain beyond the capacity of the schools to influence, other factors are school-related and thus can be minimized. Attendance, failure, misbehavior, perceptions of school relevance, and feelings of alienation are all school-related factors that place a student at risk for dropping out of school. Research indicates that student participation in service can have positive effects on these factors that may lead to a student's decision to drop out of school. While a great deal of research has been conducted on the effects of service learning, it has not focused on the effects of service on students identified as at risk. In the next chapter, a study intended to measure the effects of service on students identified as at risk will be discussed.

# Chapter Three

# Methodology

## Design

The study was a descriptive study utilizing both quantitative and qualitative design procedures. Quantitative measures were used for questions one through four and qualitative measures were used for the remaining questions. The purpose of the study was to explore how voluntary participation as a tutor in a cross-aged tutoring program affected the tutor's academic performance in math, attendance at school, behavior in school, perceptions of the relevancy of school, perceptions of success in school, and feelings of alienation. Mathematics was chosen as the academic subject for the tutoring project because previous research has indicated positive gains in academic performance for math tutors. In addition, there was broad administrative support at the school where the research project would take place for mathematics tutoring.

### Quantitative Measures

The following data were obtained as part of the sampling criteria for each student who met the baseline sampling criteria, prior to the beginning of the study:

1. Attendance records indicating the number of absences from school at the end of a six-week grading period.
2. Behavioral records indicating the number of referrals to the office for misbehavior in school at the end of a six week grading period.

3. Scores on the state standardized test for mathematics, the Texas Assessment of Academic Skills (TAAS), administered to all students as a pre-test the week before tutoring began.
4. Scores on the TAAS math test from the previous school year.
5. Semester grade records, indicating student grades in all classes for the semester of the current school year.

At the end of the school year, the following data were obtained for those students who met the sampling criteria and participated as a tutor:

6. Attendance records indicating the number of absences from school for the fifth and sixth six week grading period.
7. Behavioral records indicating the number of referrals to the office for misbehavior in school for the fifth and sixth six week grading periods.
8. Scores on the state standardized test for mathematics test administered at the end of the current school year, the Texas Assessment of Academic Skills (TAAS), including the scores on individual objectives of the test.

After the school data was collected for each student, descriptive statistics were used to report each subject's attendance. This included for each subject the number of absences and the percentage increase or decrease for the tutoring period and the six week period after tutoring, compared to the periods prior to tutoring. A group mean was also identified for the pre, during, and post-tutoring six week periods.

Other data was also used to report each subject's office referrals, as a representation of misbehavior in school. This included the number of office referrals and

the percentage of increase or decrease during the tutoring period and the six week period after the tutoring project, compared to the periods prior to tutoring. A group mean was also identified for the pre-, during, and post-tutoring six week periods.

To explore how participation in the tutoring project may improve subjects' academic performance in math, TAAS Math test results from the 1997-1998 end of school year, the 1998-1999 end of school year, and a pre-test administration one week prior to tutoring were obtained and compared for each of the subjects. Because research indicates that tools of measuring academic gains must be meaningful to the content that a tutor actually experienced, data was collected and compared only on the TAAS objectives the student actually reported they tutored. For comparison purposes, the data was presented categorically as pass/no pass and numerically as the number of correct responses for each objective the student tutored. Finally, the tutor's overall TAAS math score was presented for comparison.

For those students who did not participate as a TAAS tutor, an alternative assessment of mathematical skills was utilized. (See sampling information below for a description of the tutoring roles.) Prior to tutoring, these subjects took a timed pre-test of basic multiplication skills. The test included 50 basic multiplication problems of no more than two digits. The subjects were given one minute to answer as many of the problems as possible. The researcher gave the subjects the following directions: "This is a test of your multiplication skills. It will in no way disqualify you as a tutor. You will have one minute to complete as many of the problems on the backside of this sheet as possible. When I say begin, begin working the problems immediately. Do not write your name on your paper first." A similar test with the same number and type of problems, time to

complete, and researcher directions was administered at the end of the tutoring project. The two tests were compared, using the number of correct responses and the percentage increase or decrease, to indicate academic progress in math skills.

To explore how the effects of participation as a tutor may differ among the student groups identified in this study, an analysis of variance was performed and analyzed. Students in the study were sub-grouped into the following categories: tutors who had previous office referrals for misbehavior, students who had poor attendance, and students who had previous academic failure.

Qualitative Measures

Attendance, behavior, and academic performance are complex factors that should not be measured with quantitative measures only. Other variables influence each of these factors of dropping out of school. To explore each of these variables an interview guide was developed based on Alpert and Dunham's predictive factors of dropping out of high school (1986).

Because other variables influence each of these factors regarding dropping out of school, a semi-structured interview was developed to address the variables that Alpert and Dunham found to be significant in their study. The interview consisted of questions that target three of Alpert and Dunham's five most powerful predictors of dropping out of school: school relevance, success in school, and parental monitoring. Other questions more broadly addressed Alpert and Dunham's fifth strongest variable, peer influences. Misbehavior in school, Alpert and Dunham's strongest predictive variable, was not included directly as an interview question, because quantitative measures of this variable

seemed more appropriate. However, students were encouraged to discuss misbehavior when appropriate. Questions were also included to address motivation and alienation as a variable in attendance. (See appendix B)

Subjects were interviewed before and after participation in the service project as a tutor. The researcher or another adult staff member at the school conducted the interviews. This individual was trained in qualitative interviewing techniques. The interviews took place before or after school. A few interviews were conducted on the weekend at the school site. Permission was obtained from each subject to tape record the interview. Each subject was informed that their remarks were confidential and would be shared only with the researcher, and only for purposes of the research.

The tape recordings of the interviews were fully transcribed by the researcher. The interviews were then analyzed for themes that emerged from the interviews and coded accordingly. Pre and post service interviews were used to detect any changes in a subject's feelings regarding the relevance of school, the motivation to attend school, success in school, and alienation.

Interviews were also conducted with the tutor's team of teachers. Students at this school worked with a single team of teachers. Every teacher on the team shared the same students, and therefore was knowledgeable about his or her students. The team teachers were presented with a list of students who had participated as a tutor. To avoid researcher imposed bias, the teachers were given no additional information about the student's experiences as a tutor. Unstructured interviews were conducted, allowing the team teachers to make observations about the student without imposed expectations from the researcher. The team teachers were simply reminded that these students volunteered to

tutor during the fifth six week grading period, and were asked to comment, if they wished, on any of the students on the list. The interviews were conducted during the team's planning period in a private room. None of the interviews took longer than one hour, with most lasting approximately forty-five minutes. Team teachers consented to the interview and scheduled an appointment for the interview with the researcher. The interviews were tape recorded with each team member's permission. The researcher fully transcribed and analyzed the interviews, giving special attention to the anctedotal evidence of the effects of tutoring on students.

In addition to oral interviews, subjects were asked to keep a reflection journal. A series of writing prompts were posed to students on a weekly basis. Students were informed that reflection is a necessary part of service. They were encouraged to write freely and reminded that their thoughts would be read only by the researcher, would be kept confidential, and would be used only for purposes of the research service project. The journal entries were also fully transcribed by the researcher, analyzed, and coded.

A final qualitative tool was used during the reflective seminars held once a week. During the reflective seminars, the researcher prompted students to discuss their service and what they were learning from it. In the qualitative tradition, most of the questions for discussion grew out of group discussion. However, the researcher presented a few broad questions at each seminar to foster discussion. With student permission, these discussions were also tape-recorded.

In all of the qualitative materials, the researcher looked for information that while not the focus of the study might add to our understanding of the variables that influence a student who is at risk. It was hoped that these qualitative data would provide rich

information to explore more subtle changes in the students that may indirectly affect the variables under study.

Sampling

The population for this study was identified as Eighth grade suburban public school students who were at risk for dropping out of school due to low socioeconomic status and one or more additional factors such as poor attendance, misbehavior in school, or failure in school or on academic achievement tests. The population includes students receiving Special Education services, as well as students who do not. In addition, the population includes males and females, Caucasians, African Americans, and Hispanics.

For the purposes of this study, purposeful sampling techniques were utilized to identify the sample. Students who participated in the study were all eighth graders who were identified as at risk for dropping out of school. The requirement that the students be in the eighth grade was considered important to eliminate the effects of grade-level and possible student inability to tutor students just one grade level lower than the participants. The criteria used to identify students at risk were consistent with recent at-risk literature and included the following: low socioeconomic status, marginal attendance, failure in school or on standardized academic tests, and misbehavior in school.

Because low socioeconomic status has been consistently identified as a major contributing factor to dropping out of school, the sample for this study was first drawn from eighth grade students who met this criterion. Students met this criterion if they were currently participating in the free or reduced lunch program (n=116). This information was obtained from the director of food services at the participating study site.

From this baseline sample, students were purposely selected for the study if they were identified as at risk for dropping out of school due to marginal to poor attendance (n=28). Students from the baseline sample met this criterion, if they had five or more absences from school as of the end of the fourth six-week period of school. This number was chosen as the criterion, because two state laws go into effect once a student misses five days of school. It is at this point that the school must take formal action to warn parents of the possibility of failure or court proceedings.

A third group of students was selected from the baseline sample (n =116), if they were identified as at risk due to failure in school (n=38). Students were identified as at risk if they met any one of the following: they had failed the reading or the math section of the TAAS test the previous academic year; they had been retained in eighth grade this school year or placed in the eighth grade this year without passing seventh grade due to age; they had a semester grade of "F" in two or more of their core classes (students must pass at least three of their core classes in order to pass to the next grade). Student who failed the reading TAAS test were considered at risk, because the literature suggests that failure of any standardized academic test places a student at risk. In addition, many of the students who had failed the TAAS reading test also failed the TAAS math test or were failing classes at the semester. Finally, the measurement tools utilized in this study only measured for academic improvement in the specific math skills tutored. The TAAS test consists of 13 objectives, and improvement can be measured according to the objective tutored. Consequently, improvement in those skills can be measured, even if the student passed the math TAAS test.

The final group of students was selected from the baseline sample (n=116), if they had been referred to the office at least once during the school year for misbehavior in school (n=31). The particular offense was not considered an important factor in choosing the sample that met this criterion. While forms of misbehavior range from the mild to the extreme (for example wearing inappropriate clothing or assaulting a student), the literature suggests that they are all acts of deviance. For some students, acts of deviance represent an inability to conform to the norms of school as an institution. This places them at risk for dropping out of school, even if their misbehavior was a mild refusal to conform to dress code. One student was eliminated from the study because she moved shortly before beginning tutoring. A second student was eliminated from the study because he was enrolled in resource math.

Some students met more than one of the criteria for the study. All of the student participants were volunteers, and the researcher was unable to persuade every student to participate in the service project. However, the researcher was able to place 47 student volunteers of the 58 students who made up the study sample with sixth grade students. The sixth grade students also volunteered to participate in the study.

The subjects of this study currently attend a middle school in a suburban school district near a major U.S. city in the Southwest. The school is part of a community with a population of 18,400. However, a larger neighboring community (population = 116,000) administers the school. Within the school district, the school is identified as diverse, with its population of 18% Hispanic, 16 % African-American, 66% Caucasian, and 1% each Asian and American Indian. The school district also identifies the school as low performing, compared to other schools in the district. The performance rating is based on

the percentage of students who pass TAAS and its average daily attendance percentage for the year. However, the school has received an Acceptable School rating from the state's department of education since the TAAS testing began five years ago.

Student misbehavior is of considerable concern to the parents, staff, and members of both communities. Gang activity is of special concern to many, including parents and students. Gang activity has occurred in the school, although the number of gang members and their activity has decreased in the last few years, possibly due to the district wide policy of police officers being on campus full-time.

Procedure

The Maryland Student Service Alliance Framework for Effective Service Learning was utilized (See Appendix C) as the service model. Briefly, the framework includes four critical elements for effective service learning:

- Preparation: Students prepare to serve by learning the skills necessary to perform the service.
- Action: Students perform the service.
- Reflection: Students learn from their service experience, by regular reflection in the form of journal writing and discussion with those served and service supervisor.
- Celebration: Students celebrate their service.

Students were invited to volunteer for tutoring, after participating in a brief information session. The researcher built the enthusiasm for the project prior to the meeting by sending special invitations to the students and posting signs throughout the building that something special was coming. Students were given a permission slip to

indicate their consent as well as parental consent for participation as a tutor. (See Appendix D).

Students were prepared for service in a training session held at the school. While a one-half to full day session was desirable, the researcher was unable to obtain permission to be excused from other teaching duties to conduct the training. Student preparation occurred in a one-hour session and through continual follow-up throughout the first week of tutoring. Students were trained to use the materials and were fully informed of the expectations of participation in the service project.

During the service, each subject was matched, according to his or her mathematical abilities, with one sixth grade student who volunteered to be tutored and who has similar mathematical needs. To accomplish this, the researcher provided the three eighth grade math teachers a list of the eighth grade tutors. The teachers were asked to make recommendations for placement. They were to recommend them as either Basic Skill tutors or TAAS tutors. The Basic Skills tutors were defined as students who had not yet mastered multiplication and would find tutoring TAAS frustrating. The TAAS tutors were defined as students who might find tutoring TAAS challenging, but who had mastered multiplication skills to a degree in which they would not be frustrated in their efforts. The teachers based their recommendations on classroom performance and a practice TAAS math test administered the week before. The sixth grade teachers provided the researcher with a list of their students who had volunteered to be tutored, along with a recommendation for Basic Skills or TAAS Skills similar to the definition above.

Tutors and tutees met each day of the week during 0 period; a class period that consists of 25 minutes before school actually begins. The students met in the tutees' classroom or in the researcher's classroom. A classroom teacher was present during tutoring. Every effort was made to make the tutors feel welcome and important, for example by setting aside a special place in the classroom for them to meet. In addition, tutors were released from their history period class to tutor one day a week for approximately one hour.

Reflection included both reflection on the part of the tutors concerning their service and with the tutees. Each tutor was given a list of reflection questions and prompts to be discussed with their tutee throughout the tutoring and each time they tutored. The questions were designed to invite the input from the tutee, in regard to the service experience. The sixth grade teachers were asked to monitor the pairs to ensure that they were engaging in this oral discourse. (See Appendix E.)

Tutors also reflected on their service in the form of written reflections in a journal. (See Appendix F.) On a weekly basis, the researcher gave tutors a few questions for reflection. The questions were designed to prompt students to think about how they were improving their math skills, how their feelings of confidence were changing as they tutored, how their feelings about helping someone else were changing, and how their feelings toward school and learning may be changing. In addition, the reflection questions were designed to assist them in becoming better tutors. The journal entries were collected each Friday, during the reflective seminar.

Opportunities for reflection were also provided during the reflective seminars held each Friday. During these seminars, the researcher held informal discussions with the

participants about their participation. Students were prompted to discuss what they had been experiencing during the previous week as a tutor. Toward the end of the service project, more formal questions were used to help students synthesize what they had learned about themselves, about helping others, and about their mathematical abilities. These reflective discussions were tape recorded, transcribed, and analyzed by the researcher.

Celebration was built into the service project from the beginning. Every effort was made to celebrate the work of the tutors and their students' accomplishments. Tutors and tutees were frequently rewarded for their efforts with token rewards. The sixth grade tutees periodically sent thank you notes to the tutors, and in some of them they described making a good grade on a math test. Pictures of the tutors and their students were taken and displayed in the school. Throughout the service, the researcher video- taped the students participating in service activities to increase excitement. Each reflective seminar was a celebration of sorts, focusing on the positive things that were happening during tutoring. Each week two tutors were recognized during the morning announcements for excellence in tutoring. The researcher provided donuts occasionally in the morning for students and provided pizza and other snacks during the reflective seminars to make the occasions special. A final celebration event was held. Each tutor was presented with a certificate of accomplishment and the video was shown.

Materials

Students who participated as TAAS tutors were provided a TAAS study guide workbook to use with their student. The workbook was published by the State Department of Education and included each of the 13 math objectives on the TAAS test.

The workbook included an explanation of how to solve the problem and sample questions, in which the tutor guided their tutee through. In addition, the sixth grade teachers provided students with independent worksheets for each TAAS objective to be used by the tutor and tutee to evaluate their mastery of a TAAS objective. Each TAAS tutor was also provided a TAAS Objective Mastery Log. On this log, the tutors indicated the objectives practiced and the date of mastery.

The Basic Skills tutors were provided with a set of multiplication flashcards to be used in the classroom. The multiplication problem was posted on the front of the card, and the problem and the answer were posted on the backside of the card. In addition, the tutors were provided with a set of practice drill sheets to be used on a weekly basis with their tutee. These drill sheets were used weekly to evaluate the progress of their tutee. In addition, the tutors were provided with a series of timed drill sheets. Tutors used these, with the consent of their tutee, when they believed that a timed drill would indicate progress. A progress worksheet was created by the researcher, in which the tutor kept track of specific multiplication problems that their student needed to practice and the date of mastery.

The researcher created a tutoring log sheet for all of the tutors to use, in order to document their tutoring service hours. The log was a simple worksheet that required teacher initials to indicate that the tutor and tutee had completed a specific amount of tutoring. Tutors gave the log to the researcher each Friday, during the reflective seminar.

Measures

The measures used in the study included a pre and post-test for all of the tutors. For the TAAS tutors these included a practice TAAS Math pre-test and the official TAAS

test administered three weeks after service. One week prior to the beginning of tutoring, all eighth graders were administered a previously administered and state released practice TAAS Math test. The state's testing organization scored these tests and sent reports to the school for each student. The researcher collected the scores for each TAAS tutor, and used them as a pre-test. For each objective of the test, the researcher identified whether each TAAS tutor passed the objective and what his or her score was. In addition, the total score was identified. The TAAS tutors did not necessarily tutor their tutees on each of these objectives. The results of the post-tutoring TAAS were then analyzed to measure for improvement in the math objectives they actually tutored. This is consistent with the literature, in terms of good measurement practices.

The Basic Skills tutors were also administered a pre and posttest. This test, administered by the researcher, was a simple worksheet of single digit multiplication skills. The tutors were told before the administration of the test that the results would in no way affect their acceptance as tutors and that it was simply a way to measure their improvement in their math skills. After serving as a tutor, the tutors were given a worksheet with more problems of the same type, and given the same amount of time to complete it. The two sets of tests were compared to determine progress in their multiplication skills. In addition, the researcher collected scores on Objective 8 of the TAAS Test: Using Multiplication to solve problems, to measure improvement in their mathematical abilities. Scores on this objective on the pre-test administered before tutoring and the official end of year test administered after tutoring were compared to measure improvement.

## Chapter Three Summary

The study described above utilized purposeful sampling and a variety of quantitative and qualitative techniques, in order to investigate the effects of peer tutoring on three important variables that previous research has correlated with a student's decision to drop out of school. These variables include attendance, misbehavior, and academic failure. Students were selected for the sample, because they had already experienced one of the three variables. After tutoring for six weeks, quantitative measures including descriptive statistics and analysis of variance were utilized to measure improvement for each variable and the degree of effect of tutoring for each group. Qualitative data were analyzed to investigate other variables such as student feelings of alienation that may influence attendance, misbehavior, and academic performance. In addition, the qualitative data were collected and analyzed to investigate the more salient effects of tutoring that may not easily be measured quantitatively. The qualitative data included interviews with the participants and their teachers, student journal reflections, and oral reflections during weekly seminars. In the next section, the results of the study will be presented.

# Chapter Four

## Analysis of Findings

### Qualitative Findings

**What effect on attendance rates will participation in a tutoring service learning project have on students who are identified as at-risk to dropping out of school?**

The interviews and journal entries of students who participated as a tutor were carefully analyzed to determine student perceptions of attendance before and after tutoring. Special attention was given to students who had been identified as at risk due to previous attendance problems.

Prior to tutoring, most students had both internal and external motivations for attending school. When asked, "On days when you do not feel like going to school, what is it that makes you come to school?" the most frequent response from all student participants was an external motivation to see their friends. Two students previously identified as at risk for attendance problems described it this way: "I come because my friends depend on me. If I didn't come, Candie wouldn't have anyone to eat lunch with" and "[I come] to be with my friends, cause when I'm at home I want to call someone and they're not at home. So I try not to miss school so I can see my friends." A desire to avoid makeup work and thus homework was also frequently mentioned and classified as an external motivation for attending school.

Contrary to expectations, students with previous attendance problems reported a variety of internal motivations for attending school. Their responses to the question above suggested that they want to come to school because they enjoy particular classes or subjects, they believe school is important to their future, and they don't want to miss some activity in a class or the school. Austin and Cindy, both identified as at risk for attendance problems, described their internal motivations to attend school:

> [I want to come to school] so when I get older, I can get a better job and have whatever I want. (Austin)
>
> Sometimes when we're doing a project in history and I don't really want to come but I do because history strikes me as my favorite subject. I guess it's just basically things we do in class that make me want to come to school. (Cindy)

When asked, "What is it that makes you not want to come to school?" the most common response from all students was that they wanted to stay in bed or they were tired. After probing students more deeply, it became evident that failure in class and home responsibilities were important internal motivators for some students, even for students not identified as at risk for attendance. Lashonna, identified as at risk for attendance, behavior, and failure in math described her desire to stay home:

> [I do not want to come because] the work...a lot of hard work and I wish man I were not here. But I get here and it's ok, and then I go to math. My

> mom, she don't want me to get sick on most days. She wants me to come to school. The two days I was sick last week and didn't come to school. she said you don't have any work? I said, no mom, we had the benchmark [the practice pre-test]. I lost my math book one day and she got real mad. It finally turned up...She was like you need to do your work and I was like I don't have no work and she was ok, as soon as you get off the bus you come straight in the house and do your work. I was like ok (Lashonna).

At first Lashonna seemed to be responding in a typical manner, complaining about having to work in school. However, she described school as ok until she went to math class. She also described losing her textbook and her angry Mom. Lashonna described her Mom as a very involved parent, who expected her to do her math work. In a previous interview, Lashonna described her relationship with her Mom as a very close one "I love her to death and want to make her proud". She also described frequent exchanges with her Mom in which her Mom would urge her to do better in math. She described one exchange:

> Lashonna, you need to do this. You need to graduate and go to college and make something of yourself. You don't want to be like me working at the hospital, cleaning up after people. I was like ok Mom, I'll do it. She's like I want you to graduate and make something of yourself. So I'm doing it so my Mom can be proud of me and I can be proud of myself.

Nonetheless, Lashonna was not doing well in math. She was not passing the class at the time of the interview and had not passed the math TAAS test since third grade. She was frustrated. She described another exchange with her Mom, when her math teacher called her Mom about missing work:

> My Mom got mad and I was like Mom, I'm going to do it [the worksheet]. I was like I just don't understand some of this stuff and she was like I know I don't understand it either.

For Lashonna, each time she attended math class she was involved in an internal struggle to do well in math and a potential external struggle to please her Mom. Lashonna described her other classes, teachers, and friendships in a positive manner. Consequently, failure in math seems to be her primary motivation for staying home from school.

Cindy also described failure as an internal motivation for staying home from school, although she did not identify it as such. Cindy was a special education student who was also failing math and had also been identified as at risk due to attendance. She had been exempted from the state TAAS test, instead taking a released version. Unlike Lashonna, Cindy's Mom did not expect her to pass the math TAAS and did not have the same high expectations for grades.

When asked about her mother's expectations, Cindy replied that she expects her to attend school every day unless she was ill. However, she then described situations in which her mother had allowed her to miss school in order to help her sister with childcare. In addition, she described her mother's expectations for grades:

I used to bring home As, Bs, Cs, maybe and F once in a while. She expects anything a C or higher because...the simple fact that I'm in CMC and I'm trying to comprehend most of this stuff. Because everyone else is on an Eighth or Ninth grade level in their minds, but I'm in Fifth or Sixth grade. So she says it is ok for Cs or higher.

When asked if she had been punished for the F's she had earned this year in several classes, she said "No, because she understands." Clearly, Cindy did not feel pressured by her mother to attend school or to pass all of her classes.

Cindy described her failure in math, and like Lashonna the failure may be a primary motivation for her absences from school. When asked, "How do you feel about school?" she replied, "I really don't feel that good about it. The part that I have to come is OK, because I have to learn. But it is kind of interfering with my sleep time." Like many others in the study, Cindy's motivation not to attend school needed additional probing. When the researcher asked for additional specific reasons why she did not like school she replied:

Math. It's harder. They tell me my math is based on like a Fifth or Sixth grade level, and it's harder to learn in Eighth grade. My English is hard because I have trouble writing papers and stuff. It makes me feel like I think everybody thinks I'm dumb, which probably isn't true but I feel like it is.

When asked whom she meant by everybody, she replied "All the kids and all the teachers. They really don't, but I think they do". She continued to say that she felt the same way in English class.

Cindy was uncertain that she would be able to graduate from high school. She believed that studying math and English would help her to graduate, but she said, "It's just that most of the time I don't get half of it. They [teachers] give me the right stuff to practice with. It's just that I don't get it." When asked if she was uncertain that she'd be able to graduate from high school, she replied

> Yes. I think because of my math mostly. I can improve on my English, because I'm already improving. But what it is the math. If I'm not getting eighth grade math, I won't get Ninth grade math either because I need to know it first. It gets harder.

Cindy's voice had become barely a whisper at this point in the interview and there was a tear in her eye.

When asked about attendance, Cindy replied that she came to school to see her friends and to participate in her favorite class, history. She did not mention failure, when asked about what makes her not want to school. When probed with the following question: "When you decide to stay home, does it ever have anything to do with school?" Cindy replied "No. The only times I stay home is when I am sick, and then I come most

of the time anyway." Yet, Cindy had many unexcused absences. It is possible that Cindy did not want to discuss failure further with the researcher.

For Lashonna and Cindy, failure in school and the desire to avoid feelings of failure seem to be an internal motivation for not attending school. Students in the study not identified as at risk due to attendance mentioned classes they were failing. However, these students seldom described their failures in terms of their not understanding the subject. Most often they explained their failure as their fault for not turning in work.

Analysis of the interviews also indicated that sometimes students did not attend school, due to childcare issues and other problems within the family. Both students who were identified as at risk for attendance and those not so identified described missing school for the family. When asked, "What is it that makes you want to stay home from school..." Marcela, a student at risk for failure, replied: "Like when my Mom has to go to the doctor and she needs me to take care of my little sister. But I do want to come to school." When questioned about how often that occurs, she stated it had occurred three times during the first semester, but that her Mom expects her to come to school every other day. Cindy, who was described above, also stated that she had missed school to care for her sister's children while she went to the doctor. The district considers these absences unexcused. However, most teachers will allow the student to make up missed work.

Danielle, a student identified as at risk for attendance, said she does not come to school because, "Sometimes I'll just have really big problems and I won't come to school. When probed for more information, she replied:

It's just my Grandpa. He just found out he had cancer. He was sent to the hospital. So I've missed a little bit of school lately because of that. And the third six weeks I missed a lot of school because my Grandma died so I didn't come.

The school excuses time to attend a funeral, however Danielle was out for weeks. Her desire to miss school, while certainly influenced by family considerations may also be influenced by her own motivation not to be like her brothers and sibling rivalry, a common family problem.

When asked, "What do your parents expect from you as far as coming to school every day?" she replied:

They expect me to be like my brother and teacher pet kind of people. They expect me to be like him. They even want me to bring home straight A's and perfect like my brothers. And I have to come to school, whenever they have to. They're [my brothers] really smart and everything, like in AT [honors] classes. And I feel like my parents want me to be just like them. I don't want to be like my brothers, because they follow people. They like to be suck ups to the teachers and I'm not like that.

Danielle seemed to be externally motivated to miss school, a Grandmother passes away and a Grandfather is ill. However, she described in much more detail a rivalry with

brothers who are very good students and a desire not to be like them, an internal motivation to resist the expectations of her parents by refusing to attend school regularly.

The qualitative data of this study suggest that at-risk students are motivated internally and externally to attend or to miss school for a variety of reasons. The internal motivations to attend school appear to be an appreciation for a class or a subject and a desire to go to school because they believe it is important to their future. External motivations to attend include attending school to see friends, to avoid makeup work and homework, and because parents make them go. The interviews provided important information to help explain why at-risk students choose not to come to school. After careful probing, the researcher found that students who have been identified as at risk miss school because of failure and the internal struggles (self-esteem) and external struggles (arguments with parents) associated with failure. They also miss school because of a variety of family issues and problems in which the student is allowed to miss school. There did not appear to be a major difference among students identified as at risk because of attendance and those not identified as at risk, with one exception. Students identified as at risk for attendance were the only ones who described a desire to stay home from school because they were failing. Students who were failing but who did not have attendance problems most often described their failure in terms of simply not doing their work. However, students who were failing and who had attendance problems described their failure in personal terms of inability to do the work and frustration.

What effect if any did tutoring have on the tutors' desire to attend school? The purpose of this portion of the analysis is to explore how tutoring may have changed the tutors' feelings regarding attending school, especially the tutors who were identified as at

risk due to attendance. Did they look forward to attending school, while tutoring? Did they report feeling more motivated to attend, because they were tutoring?

Lindsey is typical of what some, but not all, tutors reported feeling about attendance and their tutoring experience. Prior to tutoring, Lindsey a Special Education student identified as at risk due to attendance and failure, stated in a pre-interview that she came to school because

> ...we have a test or something and I don't want to miss it. But a lot of it is I'll think about the makeup work I'll have to do, and I'm not good about doing makeup work or because something is going on at school and I want to be a part of it.

When asked, "How about while you were tutoring? What made you want to come to school? she replied...

> Because I didn't want her [my student] to just sit there and not know [whether I was coming to school], because you know there's really no one to tell her so I didn't want her to just sit there. I've had the feeling of someone commit to showing up and never did. So I know how that feels and I don't think anyone else should have to feel that. That's kind of what devoted me to come every morning.

Many tutors reported that they wanted to come to school, because they had become friends with their student or they really liked their student. However, several of them were also afraid that they would not be able to teach math correctly. They reported feeling afraid and making mistakes, but a new friendship and determination to succeed kept them coming back to tutor. Lashonna explained a situation that occurred when she incorrectly graded her student's work: "I was really embarrassed. It was like she knows more than I do. I almost started crying." When asked why she went back to tutor some more, she replied "I was like, I'm going to learn this stuff. It was like tutoring my little sister."

The tutors also reported that tutoring made them feel good about coming to school, because they felt like they were making a difference or doing important work. Jennifer described her feelings during a seminar:

> I feel like I'm making a difference. It has helped me to learn because it's up to me whether she learns and to help her to learn. It's up to me to be confident to help her to want to learn. It makes me want to try this problem that I think in my head I'll never get. It makes me want to come to tutoring, because I want to. It's up to me. (Jennifer)

A few tutors reported that tutoring had no effect on their desire to attend school. They explained that they did not like their student. The complaint given most often was that their student skipped tutoring or wasn't there on time or that their student wouldn't listen to them. All participants were volunteers. Every effort was made by the researcher

to make sure that the tutors' students were attending regularly. When a student was absent, the teacher would have the tutor either tutor another student volunteer or team tutor with another tutor.

Two of the tutors who were at risk for attendance experienced this problem. Both of these tutors performed their service in the researcher's classroom. One of the tutors was matched to another student volunteer, but most mornings she made only minimal effort to tutor. Her attendance did not improve during service. In the post-interview she stated that there was no difference in the reasons why she chose to come to school or stay home. The second tutor's attendance was so sporadic that her student tutored primarily with another tutor. She stated in the post interview that she missed school only for illness and that she had been ill a great deal. Official records did not indicate a doctor's note, although she may have been ill. This tutoring experience had little effect on her.

Analysis of the qualitative data suggests that at-risk students have several internal and external motivations for coming to school or missing school. Among the motivators for attending school, a desire to see friends and an interest in a particular class or subject was most often mentioned prior to tutoring. Among the motivators for missing school, external motivations such as family problems were common. However, more important to this study was the desire for students who were at risk due to attendance and failure to miss school to avoid feelings of failure. Tutoring had a positive effect on most tutors' motivation to attend school, especially for the tutors who were at risk for attendance and failure. Analysis of the data indicated that tutors felt motivated to come to school during the tutoring project to see their student, a new friend to most of the tutors. They also were internally motivated to come to school because they felt like they were important to their

student and that they were making a difference. Finally, tutoring especially helped to build the confidence of the tutors who had been failing classes and missing school. Tutoring improved their self-confidence and motivated them to attend school.

**What effect on incidents of misbehavior in school will participation in a tutoring service learning project have on students who are identified as at risk to dropping out of school?**

To analyze the effects of tutoring on misbehavior at school, interviews with the tutor's team teachers were conducted and analyzed. Their responses, rather than student responses during interviews, were considered more reliable information. During some of the interviews, students at risk for behavior misrepresented themselves by omitting incidences of office referral during discussions of behavior and how well they were doing in school.

The interviews were conducted as open interviews, with no information given to the teachers about which students actually volunteered and completed the tutoring service. Teachers were simply given a list of students who had met the criterion for inclusion in the tutoring project. The teachers were then asked to share any information they could about the student, including anecdotal information, in an attempt for the researcher to understand what possible effects tutoring may have had on the student. The teachers were reminded when the students actually tutored. The researcher did not share with the teachers why they had been chosen, other than that all students were considered at risk for dropping out of school due to socioeconomic status.

From the team teacher interviews, the researcher first analyzed the data for the students identified as at risk for misbehavior. Results on behavior were mixed. In unrelated incidents, two of the tutors were suspended from school shortly after beginning to tutor for possession of marijuana. Both students were sent to an alternative school administered by the district. The researcher was unable to persuade the administration to allow them to remain in school and complete their tutoring service. Information about these two students is important, if we are to realistically evaluate the effects of tutoring on student behavior.

Donald was identified as at risk only because of low socioeconomic class and behavior. Donald was one of the researcher's students. All of the following information about Donald was gathered from official school records and through the interviews with the researcher's team teachers. The researcher was careful not to suggest any information about Donald during the interview or to indicate approval to anything said. The information that follows is a description given to the researcher by the teachers and school records.

Donald was a student with above average intelligence. He was able to earn good grades, with very little effort. Donald did not always choose to do all of his work; consequently he earned C's in most classes all year. During the course of the year, students on the team reported to the team teachers that Donald's home life, especially his relationship with his father was very bad and that Donald was very unhappy at home. Despite efforts of the team teachers and counselors to intervene, he was never willing to discuss any problems at home.

In addition to being intelligent, Donald was popular with students and well liked by his team teachers. He was usually polite and well behaved in class. On rare occasions, Donald would come to school and be angry all day. He did not want to work. He did not want to participate. He did not want to talk about what was bothering him.

Donald identified himself as a member of a small group of friends that called themselves the Latino Crew. The team teachers caught all of the members of this group, including Donald, skipping school in October. By naming themselves, this group of friends gave others the impression that they were a gang. One of the students in this group was involved in gang activity, however he was placed in an alternative school early in the year. Donald assumed what appeared to be an unofficial leadership of the group. Thereafter, none of the remaining students, including Donald, were involved in gang activity. For the remaining of the school year, members of the group were generally well behaved and well liked students at school.

Thereafter, Donald continued to work below his ability, turning in less and less work. Immediately prior to the beginning of the tutoring project, Donald was placed in team academic suspension. Students in team academic suspension stay with one team teacher all day, rather than switching classes. The purpose of team academic suspension is to give students time to make up work and to hopefully change their behavior through frequent discussion with a team teacher.

By this time, the researcher had identified Donald as meeting the criteria for the study. While Donald was in team academic suspension, the researcher personally invited him to participate. Hoping to take advantage of his popularity and helpfulness to teachers, the researcher asked Donald to participate in making a video that would be used at the

first meeting of the tutors. Donald enthusiastically agreed and encouraged other students to join the tutoring project on the video. During that week of preparation, Donald was very helpful doing anything the researcher asked of him and making suggestions for recruitment of the volunteers. He was told only that the tutoring project was a research project and that he met the criteria. He guessed that it was because he was having "problems".

Donald was assigned to be a TAAS tutor and enthusiastically began tutoring. Within two weeks, Donald stopped coming regularly to tutoring during 0 period. Several times the researcher found him in another team teacher's room. The researcher would talk with him and persuade him to continue tutoring. He would promise to do so, attend tutoring the next day and then miss it again. Before the researcher could discuss the matter further with him, Donald was placed in an alternative school by the administration.

Three weeks into the six-week tutoring project, administrators and the campus police officer found marijuana in Donald's possession. Donald's team teachers were saddened by the event, but not entirely surprised. Students on the team had continued to tell the teachers that Donald was really struggling at home. He seemed to care less and less about school, evidenced by non-participation in class and failure to do school work.

Participation as a tutor seemed to have little effect on Donald. He did not become more motivated to do his work, and he was ultimately suspended for possession of drugs. Schools have a great deal of ability to make changes that will lead to improved student attendance, grades, and behavior. Tutoring others is just one possible action the schools can take. Tutoring might have had more of an effect on Donald, were it not for his

troubled home-life and use of drugs, factors completely beyond the reach of school and only minimally within the school's ability to change respectively. What effect might tutoring have had if Donald had not been reassigned to the alternative school, but allowed to remain in school and either persuaded to or told he must tutor? The qualitative data concerning Donald sadly suggests that no school program can be completely successful, given the powerful role of dysfunctional families and drugs in our society.

Mike also volunteered to tutor and was matched with a student as a TAAS tutor. Like Donald, he was also reassigned to an alternative school because of possession of marijuana about three weeks after tutoring began. He was identified as at risk for each category: attendance, behavior, and failure. However, Mike was intelligent. While he had failed most of his classes for the semester, he had passed all sections of the TAAS test the previous year.

Until his reassignment, Mike attended all of his tutoring sessions regularly. He was very enthusiastic about tutoring. Mike is the type of student whose reputation precedes him to each grade level. To make matters worse, the reputation of his brothers also precedes him. Both Mike and his brothers participated in gang activity. The researcher confirmed his participation in the gang with the school's police officer and the discipline principal who worked with Mike.

Prior to tutoring Mike had eleven referrals by various teachers and administrators. The majority of these offenses were for grooming violations and hazing/harassment. In an effort to control gang activity, the school enforced a grooming rule that boys could not wear baggy pants and must tuck their shirts in. The members of the local gang of which Mike was a part wore very baggy "Dickie" pants and long shirts untucked. Mike resisted

the school's effort to control his clothing and by inference the school's attempt to not recognize his gang. The hazing/harassment office referrals all involve Mike making threats to others as a member of the gang.

While tutoring, Mike did not have any office referrals. Nonetheless, the conclusion cannot be made that tutoring alone improved his behavior. Mike realized he was at the end of his steps at the school. More referrals would eventually mean he would not be allowed to attend the school. However, it is possible that Mike chose not to misbehave because he enjoyed tutoring and did not want to be reassigned. He was a gang member, yet every day he voluntarily tutored another student. While it appears that tutoring had little effect on Mike because he was suspended for drugs shortly afterward, the effect should be measured more on his willingness to tutor and enthusiasm for it. If measured this way, tutoring had a positive impact on Mike.

The interviews with teachers indicated that for many of the students identified as at risk due to behavior, their behavior improved while they were participating as tutors. Cheaniqua had been identified as at risk for behavior and failure. Her team teachers discussed her tutoring and the effects it had on her:

| | |
|---|---|
| Team Teacher A: | She was very motivated. She was there [in the tutoring room] every 0 period. |
| Researcher: | Have you noticed positive changes? |
| All Team Teachers: | Yes, Big Time, etc. (Emphatically) |
| Team Teacher B: | She was really rambunctious first semester. She made a lot of noise and disrupted class. |

Researcher: Describe for me how she disrupted your class?

Team Teacher B: She's a talker, a very loud talker. She's easily angered. She's become friendlier. She doesn't get as angry as easily pr as quickly as she did before. I don't know if it is all attributed to tutoring, but there has been just a lot of growth.

Team Teacher C: Chechena couldn't let anything go. She's not really teased more than anyone else is. She just took everything to heart and wouldn't let it go. She would lash out immediately. She was suspended for whacking a kid with an encyclopedia four times over the head for taking something from her.

Each team was asked to select a student from the list of students who met the criteria for participation as a tutor who they believed had made the most positive changes. This team chose Cheaniqua. During the six-week period immediately prior to tutoring, Cheaniqua had been sent to the office twice, once for vandalism and once for the fighting incident described above. She was placed in school suspension for the fighting. During the tutoring project and for the remainder of the year, Cheaniqua had no office referrals.

Randy was identified as at risk for behavior, attendance, and failure. His team teachers also believed that tutoring had improved his behavior. They described Randy:

Teacher A: He's an interesting story. He's doing a whole lot better in everything.

All Teachers Agree

Teacher B: I don't know what got into him. He has been doing his work. After the TAAS test, we've been working on things they will be doing in the first weeks of high school and he's getting it down. And he's helping people; you know helping other people, telling them how to do it. He is a smart kid.

Researcher: He is teaching other students?

Teacher B: Yes.

Researcher: Had you seen him do that before he tutored?

Teacher B: No, he was always the one that just sat, and you know after you gave the lesson he'd raise his hand and say how do you do this? He's right too, and he raises his hand, and he's been paying attention. His ability is high, but in the past using it wasn't there. But he seems to be coming into his ability to use it to do well.

In Randy's pre-interview, he was very negative about school "I don't like it", but he felt it was important to come to school to get a good job and have a nice life. He described himself much the way his teachers did above, when they were describing

Randy previous to tutoring: "I'm not doing well in school. I don't turn in my work, because I don't like to do work. The work is not fun." Randy described having very few friends and being involved only in athletics before tutoring, but he was kicked out of athletics for failing grades.

According to the discipline Principal, Randy's behavior was much improved this year from the previous year. Prior to tutoring, he had no office referrals. However, according to his team, he had been assigned numerous detentions during the first semester prior to tutoring. While tutoring, he behaved well in his team teacher's classes. However, he was removed from his metal shop elective class for misbehavior during the last week of tutoring. The office referral reads: "Randy is playing around in shop, pushing other students and placing them in headlocks. He chases them around the room. He is being a danger to himself and others in the shop." Randy was removed from the class and placed in another elective class.

Randy's behavior had improved in most of his classes. However, his teachers described his improved behavior in relation to him helping other students in class. He demonstrated to them improved behavior by helping others. Randy may have behaved more appropriately in metal shop, if he had had opportunities to help another student. Also for many students, elective classes such as shop and physical education are more difficult to behave well in because they are far less structured than other classes, giving the students freedom to move around and get into trouble.

Some of the teachers discussed the reasons why they thought certain tutors had improved their behavior. Team teachers discussed Kenneth, a student also at risk for behavior and failure:

Team Teacher A: He was very enthusiastic about it [tutoring]. I think he really enjoyed it. He's a nice kid to begin with, very respectful with adults. Coach Anders had some problems with him in the beginning. But he really likes working with people, helping people and the school. He works hard and takes pride in his work.

All Team Members Agree.

Team Teacher B: (Coach Anders) I sent him to the office one time for inappropriate language, and every since that one time he hasn't done anything since. That was at the beginning of the year. In Seventh grade he was in trouble all the time. This year he is the Most Improved Student for Lucent [Lucent Technologies, the school's corporate sponsor].

Researcher: Do you have any idea when you started seeing improvements?

Team Teacher B: He likes being a part of something. I let him sit in my desk every day. That's his desk. And he keeps my desk organized. I think that by giving him that responsibility, that's why he doesn't act up. And there's not one student who is upset that Kenneth gets to sit at my desk, because it keeps him from

> acting up. That's another reason why I think if you give him a responsibility like the tutoring, he's going to follow through just to prove himself.

Kenneth had been sent to the office, as Coach Anders remarked, but not at the beginning of the school year. According to official records, he was sent to the office by Coach Anders in December for fighting and suspended for three days. It is possible that he was also sent at the beginning of the year for inappropriate language and that the referral was not documented. Kenneth had no other referrals during or after tutoring.

Coach Anders described the most likely reason that students who participate in tutoring improve their behavior. Tutoring allows students to feel like they are a part of something, and it allows them to feel rewarded by accepting and fulfilling responsibilities. Coach Anders's explanation of what Kenneth needed to behave, a sense of belonging and responsibility was reinforced by Kenneth's own journal entries. He wrote:

> Tutoring is fun. I get to tutor someone that is younger than me. When I do that, it makes me feel like a big brother for the person that I am trying to tutor. It's a good thing. When I first began tutoring, I felt scared. I was afraid I wouldn't do good. But now, I feel like I did good...like I did a good thing.

Teachers described behavior changes in the tutors often in terms of leadership. Both during the formal interviews of the teachers and in informal conversations, teachers

remarked to me that the tutors were becoming leaders in the classroom. Several anecdotal stories were shared about tutors who had assumed the role of teacher in their core classes. A team described Jennifer, a student at risk for behavior and failure:

Teacher A: I've noticed improvement in her work and just general in class, actually doing her work-big difference!

Teacher B: Her self-esteem stands out more. (Teacher A agrees.) She is vocal and now she stands out.

Teacher C: There are times I see her picking up. She's commented a couple of times in class [math class], oh; I'm going to be the teacher! You need to do this...and she will almost take over in that mode as if she needs to be in charge because they are not on task.

Teacher B: And it has given her a leadership identity that she didn't have in the past.

According to the team, Jennifer seldom took any initiative in class. She resisted working, did not work well with others, and seldom participated in class. Constant teacher attention was needed to keep her on task. Her misbehavior was not as bold a form of resistance as others were, but it was nonetheless impeding her progress. The math teacher on this team who described Jennifer assuming the role of teacher was most pleased with Jennifer's new determination to help others in her group. Students in her

class often worked together in groups. Prior to tutoring, Jennifer seldom participated and often was able to get the group off-task. After she began tutoring, Jennifer assumed leadership in class and within her work group.

During one of the weekly reflection seminars, Jennifer's comments during a discussion confirmed what her teachers had observed regarding her behavior.

The following was part of the weekly discussion during a seminar held in week three of the tutoring project:

Researcher: Think about how tutoring has helped or changed you. What kind of effect do you think tutoring has had on you? Feel free to be honest. You may feel that tutoring has not changed you.

Jennifer: I think it has made me feel more confident in my classes. It has made me want to do my work, rather than just sit there and talk to people.

Researcher: Why do you think tutoring has made that happen?

Jennifer: Because in the beginning I didn't care what grade I got and now I want to get good grades.

Jennifer believed that tutoring her student built her self-confidence and increased her desire to earn good grades. Consequently, she chose to behave in class. Other teachers described how the tutors have improved their own behavior and that of their friends:

Teacher A: There have been major changes in Alishia. Everything---from not doing her work to doing it, from being late almost every day---to being on time. She's doing her work. She's even making sure her friends are here on time.

Researcher: She makes sure her friends are here on time?

Teacher A: Oh yes. None of them [teacher names several of Alishia's friends in her group] have been late since she began tutoring.

Alishia, identified as at risk for failure and behavior, is a part of the Latino Crew group of friends described above. She joined Donald and the others at the beginning of the school year in skipping class. Other than that incident, Alishia's misbehavior took the form of passive resistance. She simply refused to work at all and was tardy to class very often. Alishia was also one of the researchers' students. The team teachers described observing Alishia assuming leadership in the classroom. The researcher also witnessed this behavior on several occasions, without commenting to her about it. About mid-way through the tutoring project, a student was late to class. Knowing that the teacher's rule was that the tardy student must sign in a special book, Alishia said to the tardy student as she passed her desk: "You need to sign the book." While the researcher did not witness Alishia encouraging her friends to get to class on time, she was willing to tell a student to sign the book. By doing this, in front of a large number of her friends, Alishia was

signaling to them that they needed to be more responsible about getting to class on time. She also began working better in cooperative groups. No longer did the researcher have to carefully choose which group to place her in. Whatever the task, Alishia would help her group to complete it. In addition, Alishia began offering to solve math problems in the researcher's TAAS tutoring class period. Prior to tutoring, she never volunteered. Tutoring had positive effects on Alishia's behavior and it continued well past the tutoring project. The changes in her behavior may be due to gains in self-confidence she experienced as a tutor.

During her post interview, Alishia was asked how she felt tutoring might have changed how she felt about school. She replied, "I like helping people now." When asked why she refused to do her work in class and instead wrote notes to friends etc., she replied, "because I didn't think I was really good at it [math]."When probed about how that made her feel, she replied, " It made me feel bad because everyone else was participating, but I wasn't. I didn't want to be embarrassed." When asked how she felt about the tutoring she replied, "I was getting better at it [math] and it made me feel better." When asked if she felt more confident after she began tutoring she replied, "yes".

There were a few students whose behavior did not seem to appreciably change, according to their teachers, but who did demonstrate improvements. Their teachers described them as troublemakers or angry students. During the interviews the teachers remarked that their behavior had not changed. However, when the researcher checked office records, the student had not had any referrals during the tutoring and sometimes during the final six weeks after tutoring. Office records for these students indicated numerous offenses from the beginning of the school year up to the beginning of the

tutoring project. Jared who was identified as at risk for attendance and behavior is an example of this.

Prior to tutoring Jared had been referred to the office five times. Four of the offenses were for disruptive behavior. The last referral was for assault, resulting in suspension. Jared was an enthusiastic tutor, who maintained almost daily contact with the researcher to discuss his student's progress and tutoring. During tutoring, Jared was not referred to the office at all. Two weeks after the tutoring project was complete, he skipped school. Yet most of his teachers did not recognize improvement.

Teacher A: Jared has an anger issue.

Teacher B: He hasn't changed. If he feels for whatever reason that you don't like him, he'll blow up. I'm not talking little outbursts. I'm talking huge.

Teacher A: But other times he is one of the most respectful students you have. It's about every three weeks, something will happen.

Teacher B: Something that will take everyone in the class the whole period to do, he is done within 15 minutes and that's part of his behavior problems, and he makes usually good grades on it.

All teachers agree.

Teacher C: He said something the other day. I think he's beginning to think a little bit more in his head

before he.... He still has anger outbursts, but he starts to think now. You know, why did they do that to me. He's trying to think it through now. He's been going to the anger management and that has helped.

Teacher B: We called his Mom. He's doing the same thing at home.

Teacher A: They got kicked out of the trailer park because of him getting in a fight...an old man next door.

Teacher C: But Jared is probably the most confident kid we have.

Teacher D: Yes. You put him in charge of anything and he is going to do great.

Teacher B: He has that leader ability.

All Teachers: All teachers agree.

The teacher discussion above is important to any evaluation of the effects of tutoring on student behavior for two reasons. First, participation in a tutoring project alone, or any other project for that matter, may not be enough for students who need help coping with anger. There are a multitude of books and psychiatrists who deal with this single issue. Anyone suffering from real anger control problems needs psychiatric help. However, for Jared a combination of counseling and participation in the peer-tutoring project did help him control his behavior in class. On May 20, at least one of these

teachers claimed that he had a "blow up" at least once every three weeks. Yet office records indicated that he had not been referred to the office since January 11. It is possible that these teachers chose not to send him to the office anymore, but not likely. He was near the end of his steps, before placement at an alternative school. Sending him to the office would rid these teachers of the angry student. More likely, Jared's behavior had improved as Teacher C described, because of a combination of counseling, participation as a tutor, and his own desire to remain at the school. Notice that Teacher D commented that if you put him in charge of something, he's going to do great.

The second reason this teacher discussion is important is because it clarifies the difficulties people have in assessing improved behavior. Why was it so hard for most of these teachers (all but teacher C) to recognize improvements in Jared's behavior? It is likely that Jared had misbehaved so badly in the past that forgiveness and recognition of improvement was difficult. For the student who misbehaves frequently, it is important that someone recognize his or her improvement. That person may need to be someone other than the teacher. In a tutoring situation, the sponsor or coordinator of tutors is in the unique position of being able to recognize improvement and reward the student accordingly.

The qualitative data presented above suggests several important conclusions about the effects of tutoring on a student's behavior. First, tutoring can have positive effects on student misbehavior, even for students involved with drugs or gangs. However, the positive gains are minimized when school administrators reassign students to other schools. Secondly, one of the most common improvements in student behavior is a willingness to do classwork and help other students in class. Third, students who

participate as tutors often assume the role of teacher in the classroom. Finally, for some students improvements in behavior are likely the result of the self-confidence gained in tutoring, a feeling of having a purpose in school, and a sense of fulfilling a responsibility.

**What effect on mathematical academic performance will participation in a tutoring service project have on students who are identified as at-risk of dropping out of school?**

To analyze what effect participation as a tutor may have had on the tutor's performance in math class, all forms of the qualitative data were analyzed. The data analyzed included interviews with the tutors, interviews with their team teachers, tape recordings of seminar reflections, and tutor journal entries. Special attention was given to the data concerning students identified as at risk due to failure. The quantitative data indicated that most tutors did improve their grades in math during tutoring. The qualitative data provided rich detailed information about the improvement.

During the post interviews, during the weekly seminars and in a final journal entry, most tutors reported that their grades in math had indeed improved, regardless of how well they were doing in math before they began tutoring. Many students reported improving their grade by a grade level. The following comments by students identified as at risk for failure illustrate:

> I usually make a 73 in math, but I pulled it up to an 85.
>
> (Shaquoyah)

Before I started tutoring, I was making low B's. Now I am making low A's. (Tiffany)

I'm passing with a 99.9 and before I was passing with a 69.9 barely. (Hernando)

Before I started tutoring, I had Cs in math and now I have Bs. (Misty)

The statistical data did not always match student reports. Occasionally, math grades during and after tutoring were higher or lower than what the students reported. However, the researcher based the statistical information on end of six-week grades. The students were reporting their grades at the time they were interviewed or writing in their journals. Doing very well on the six weeks test or in turn doing poorly on it is just one example that explains why there were differences in student perception of grades and actual grades. These students reported improvement in their math grades. To what degree did an improved perception of their abilities or confidence in their abilities effect a change in their performance in math class? To explore this question, the researcher analyzed interviews with their team teachers and with the tutors.

During the interviews with the tutors' team teachers, several themes emerged that demonstrate that tutoring had improved the tutors' confidence in their mathematical abilities. The first theme that emerged from the data was that the tutors began attempting work in math class, whereas previous to tutoring many would not even attempt the work. This seemed especially true for the Basic Skills tutors who were working on the

multiplication table, rather than the TAAS skills. Alishia's math teacher described her behaviors in the classroom prior to tutoring:

> She didn't do any work. She just sat there and got maybe giggly or silly once in a while. She never asked, never said anything. She wouldn't attempt at all. She'd leave homework and classwork sitting on the desk. She wouldn't even attempt it. She would do the same thing in class, with her head down. She would fail because she wouldn't do her work, and she wouldn't come to tutoring.

Contrast this description with Mrs. Knight's description of Alishia during and after tutoring. She reported noticing these changes shortly after Alishia began tutoring.

> She's become better at it. If she doesn't ask me, than she'll ask a partner in the group how to do something. She makes 100% more effort at attempting to find out how in math. The biggest thing is the difference in the attitude and I thank that has had a direct effect on her academic attempts in my classroom.

According to Alishia's teacher, Alishia clearly had very little desire to attempt any math work prior to tutoring. Did Alishia refuse to do her work because she lacked confidence in her abilities or did she simply not care, preferring to be lazy? Alishia's post interview answers this question.

Researcher: How do you feel about school?

Alishia: I like it a little bit. Some of my subjects.

Researcher: Tell me about that, about the classes you like and don't like.

Alishia: I like science and history.

Researcher: Are there subjects you don't like?

Alishia: Math.

Researcher: What is it that you don't like about math?

Alishia: The stuff that she makes us do and the problems.

Researcher: Are there some types of problems you don't like or?

Alishia: Well, like the work we're doing now.

Researcher: I am not sure I understand why you don't like math. Is it because certain work or problems are difficult?

Alishia: Yes.

Researcher: How do you feel about the teacher?

Alishia: She's nice. I like her.

Researcher: Think about how you felt about school before you began tutoring. Has that changed?

Alishia: Yes, I feel a little better in math. Yeah and I like helping people now.

Researcher: You said you didn't like math because some things were hard, but now you are saying...

Alishia: It's gotten easier.

Researcher: Think about the things you're studying in school. How do you think those things will help? How well will those things help you to graduate from high school?

Alishia: Good, because on our jobs we'll need to be able to do other stuff.

Researcher: How important do you think it is to graduate to get the kind of job you want?

Alishia: Real important, because for your job they are going to ask for a diploma.

Researcher: Has that idea changed since tutoring?

Alishia: No, I have always felt it was important.

Researcher: How well do you think you are doing in school?

Alishia: Not bad, not so good. I think I'm going to pass. I think I'm passing all my classes now.

Researcher: Before you tutored, were you passing all of your classes?

Alishia: No.

Researcher: Can you tell me why you weren't passing all of your classes?

Alishia: Because I wasn't studying math like I should. Like I started to now and I started worrying about TAAS so I started doing my work and my homework.

Researcher: This was before you started tutoring?

Alishia: Yes.

Researcher: While you were tutoring, did you turn in your work and do your homework?

Alishia: Yes and I'm still doing it.

Researcher: Do you feel that tutoring has helped you in your math class?

Alishia: Yes, with my times tables. I needed some help. I felt like in class that I was getting better at it.

Researcher: Your teachers have reported that you began participating in class. Can you talk to me about that, maybe explain why in the first four weeks you did not participate in class? What made you not want to raise your hand to ask questions or to do your work in class?

Alishia: Because I didn't think I was really good at it.

Researcher: Are you talking about all of your classes or just some like math?

Alishia: Just some like math.

Researcher: How did that make you feel?

Alishia: Bad, because everyone else was participating and I wasn't.

Researcher: It sounds like you wanted to...

Alishia: Yes, I wanted to.

Researcher: Were you afraid?

Alishia: I didn't want to be embarrassed.

Researcher: So that is how you felt before tutoring and if I understand you correctly, you are saying that you felt like you were getting better at math while you were tutoring the flashcards?

Alishia: Yes and it made me feel better.

Researcher: Did it make you feel more confident?

Alishia: Yes. because I started helping a Sixth grader and I started to improve.

Notice that while Alishia is somewhat ambivalent about liking school. she feels it is relevant and important to her life and wants to pass the TAAS test and graduate from high school. Math is the only subject she discussed in a negative manner. and her negative feelings were all directed toward herself not to the teacher or the subject itself. For example. she states that she was failing because she wasn't doing her work or studying. She wanted to participate in math and felt bad that she was not; however she had no confidence in her abilities and didn't want to be embarrassed. Alishia could only feel safe in math class if she refused to participate. Once she had an opportunity to tutor another student successfully. her confidence grew and she began attempting her work.

The math teachers reported other tutors also becoming less resistant to attempting work. Mrs. Knight described Shaquoyah. also a Basic Skills tutor at risk for failure:

> She is so convinced that she can't do it. I see a difference in that I don't get quite the feedback from her that I used to in getting her to attempt some things. She was real quick to say 'I can't, I can't'. I was getting a lot of lip when I would say anything to remind her that she at least needed to try it before she could say she couldn't. I'm not getting quite as much flak about it. but she's not producing any more than she was. But I have seen an improvement in that area.

According to Mrs. Knight, while she was more willing to attempt the work she did not produce more work. However, her grades in math do not support Mrs. Knight's statement. Shaquoyah earned a 55 the six week period immediately prior to tutoring, a 73 during the six week period of tutoring, and a 79 during the six week period following tutoring. Shaquoyah clearly was attempting and producing more work.

Mrs. Knight's perception may have been biased due to the lack of attempt Shaquoyah made prior to tutoring. Shaquoyah earned a 55 during each of the six-week periods during the first semester. A 55 is the lowest grade a teacher in this school district is allowed to give. Shaquoyah may have actually earned any grade lower than a 55. Mrs. Knight, interviewed in the final three weeks of the school year, recognized that she was more willing to attempt work but found it difficult to recognize over all improvement, likely based on previous experiences with her.

A second theme that emerged from the data is that tutors began turning in math homework while they were tutoring. Mrs. Knight described Austin, a Basic Skills Tutor at risk for failure and attendance:

> I can send him to CMC (Content Mastery Classroom-a classroom for special education students to go to whenever they wished assistance with classwork) and I have someone there riding him to get the work done and I would get classwork. But I never got homework and I have had to call Mom two or three times because of that. He failed not necessarily because he couldn't do the work, but because he flat out chose not to do homework. Last six weeks [the tutoring period] and this six weeks [the

> period after tutoring]. I think for the first time the whole year that I did not see. I think I had one missing assignment! You know, not always excellent because I don't modify the homework, but I grade based on what he is willing to attempt. He has turned in more work the last two six weeks than all year.

Austin's grades support Mrs. Knight's claims that he was turning in homework. He improved his math grade from a C to a B during and after tutoring.

A third theme that emerged from the interviews with the teachers was that some of the tutors demonstrated a willingness to tutor students within their math class. Miss Elzy described Marcela, a Basic Skills tutor identified as at risk due to failure:

> I gave her an award today, because this six weeks she is just boom [the six-week period immediately following tutoring]. She was struggling each of the six weeks. And this six weeks, she had an 82 and I was very proud of her. She was explaining to other students. I saw her do that during tutoring. I saw a big improvement. During my tutoring sessions after school, she would help other students. That obviously shows her confidence, because usually she would not go to the board. She wasn't sure if she could do anything. So I feel like if she felt she could help another student, she obviously was more confident.

Similar to the previous descriptions of other tutors, Miss Elzy described an improved participation in class. Nalelly was willing to solve problems on the board. In addition, Nalelly assumed a teacher role in the classroom, willing to help other students with their math. Miss Elzy attributed this change in behavior to an increased confidence gained through tutoring. Another teacher described the same change in another student. Mr. Phillips described Randy, a student at risk for attendance, failure, and behavior:

> He's an interesting story. He's doing a whole lot better in everything. I don't know what got into him. He has been doing his work. After the TAAS test, we've been working on things they will be doing in the first weeks of high school and he's getting it down. And he's helping other people: you know helping other people-telling them, explaining to them how to do it.

When asked if Randy had ever helped another student in class, prior to tutoring, Mr. Phillips replied, "No, he was always the one that just sat, and you know after you gave the lesson raised his hand and said how do you do this?"

In addition to the major themes described above, the math teachers reported that they were able to help the TAAS tutors with their mathematical weaknesses, because they came to them for help. The tutors wanted to do a good job, but did not always feel that they knew how to do a particular mathematical operation. According to the math teachers, several of the tutors came to them seeking assistance on particular types of

problems. Miss Elzy described this situation with Lashonna, a TAAS tutor at risk for failure:

> I would say she is the success child in math. She could barely grasp on. She came by one day and wanted me to show her how to do something, because she was supposed to help her student and she wanted to be sure she knew how to do it. She would talk about tutoring and ask for help.

Lashonna described coming to Miss Elzy for help during her interview:

> I asked Miss Elzy how to do a problem. I said Miss Elzy this girl I am tutoring is having difficulties dividing fractions. I was trying to show her how to do it. But I was afraid, like this can't be right. So I asked Miss Elzy 'Miss Elzy, can you show me how to divide and multiply fractions' because I always had trouble with fractions and decimals and percents are like the hardest thing for me. I was like 'Miss Elzy, can you show me how to do this, because she doesn't know how to do it and I'm afraid I'm going to do something wrong.' So she wrote it down on a piece of paper how to do it and I was like OOOH, ok so that's how you do it. So I went back and showed her how to do it and she did ok.

Students in Eighth grade math classes had worked on fractions as a review during the first six weeks of the school year. At the time of the tutoring, Lashonna was fully a

year behind in the mathematical knowledge she should have possessed. Her math teacher simply could not continue to devote class time to fractions. This mini-tutoring session with her math teacher, born of a desire to do well as a tutor, was definitely needed. Had Lashonna not been willing to attend tutoring sessions with her teacher, it very well could have been the only chance Lashonna had to improve that skill. From Lashonna's interview, you can tell that the mini-tutoring session improved her confidence. These mini-tutoring sessions may have been even more beneficial for students who were not identified as at risk for failure. Mrs. Knight described Danielle, a TAAS tutor:

> One of the things I noticed about her in particular is that I found some of her weaknesses, because she came to me and they were things she should have known in Fifth or Sixth grade. She needed some help working some problems for her student. Conceptually she is above a lot of the kids, but she came to me when she was showing her student how to do long division. She came to me and asked me to write out the steps for long division, because I can't remember how to do it. I was real concerned. She came to me because she could not explain to her student how to do long division! And there was another time she came to me with two fairly simple problems that really surprised me-the simple mechanical things she could not do and the skills she did not have to help the kids.

Danielle's grades hid weaknesses. While she typically earned Bs and Cs in all of her classes, she had, according to Mrs. Knight, serious gaps and weaknesses in her

mathematical abilities that needed addressing. Had she not been in a tutoring situation, she may very well have continued to hide her weaknesses. Because she did come to her, the math teacher could now tutor her in a mini-session and in more prolonged sessions if needed. Tutoring was beneficial to the tutors' academic progress, because their desire not to be embarrassed as a tutor or to do well as a tutor prompted them to seek assistance with their skills.

To summarize the findings of the qualitative data, the tutors' academic performance in math was enhanced in several important ways. First, the students believed they were improving. When students perceive a subject or a skill as something they can improve, perhaps even master their self confidence and motivation increases. This was evidenced in the qualitative data, with students and teachers describing how the tutors had improved both their grades and their self-confidence.

Secondly, the tutors described being more willing to attempt math problems in class after becoming a tutor. The math teachers corroborated this in their interviews. This effect was seen especially with the Basic Skills tutors. They were described by their teachers as especially resistant to attempting work in class before tutoring and their teachers reported a significant change in their willingness to attempt work. It seems they had found the confidence needed to attempt work in class. This is likely due to the work they were doing with their student on a daily basis. Within the tutoring relationship, they had no choice but to attempt the work in order to show their student how to solve the problem. Contrary to what might be expected from students identified as at risk, these students did not refuse to participate in class because they did not care about school, or math, or graduating. These students all felt school was important and relevant to them.

However, fear of failure and embarrassment had previously kept them from attempting work. It was simply easier to resist the work than to risk embarrassment. The daily interactions with their students broke down this resistance, and they gained some measure of self-confidence.

Third, some of the tutors and their teachers reported that during and after the tutoring service, the tutors turned in more math homework. In fact, one teacher reported that several of her students involved in the tutoring project had never turned in homework previous to tutoring. The tutors believed they were improving their skills. They reported feeling more confident in class and more willing to do their work. Consequently, they likely saw their grades improve too. It is possible that they began turning in homework for the first time, because they had seen improved grades in their classwork and did not want to ruin their grade by not turning in their homework. Another explanation for this might be the work simply became easier as they tutored and their skills improved; therefore; they were more willing to do homework. A final explanation may be that they did the homework primarily motivated by a desire to do a good job with their student or to avoid embarrassment. They may have felt that they needed to do the homework, to insure that when they arrived for the next tutoring session they would be able to help their student.

Fourth, tutors and their teachers reported that they began helping other students with their math during and after tutoring. The tutors seemed to have become comfortable with their role as teacher and confident in their abilities. They began explaining and teaching other students in their math classes and in their math teacher's tutoring sessions. This was true of both the Basic Skills and TAAS tutors, even though most of the work

done in class and in tutoring sessions was strictly TAAS related. This was an unexpected result. It seemed reasonable that the TAAS tutors would be comfortable explaining to another classmate work they had taught earlier in the day to their student. However, according to the math teachers and the students themselves, the Basic Skills students also became confident enough to tutor their classmates on TAAS work. This willingness to tutor others can only be attributed to confidence and for most of the tutors the confidence was not present before tutoring.

A final finding from the qualitative data suggests that participation as a tutor may improve performance in math by giving teachers an additional opportunity to see student weaknesses and to assist them. Many of the tutors went to their math teacher at least once during the tutoring to ask for assistance with working a particular type of mathematical operation. This gave the teachers an additional opportunity to tutor the students in a needed area. It also provided them with sometimes surprising feedback concerning their weaknesses. For various reasons, some students refused to attend tutoring at a teacher's request. Some of the tutors had refused to do so. However, they sought help in an informal way by approaching their math teacher when they needed help in tutoring their student. These mini-sessions were very important to the tutors' self-confidence and perhaps even their grades in math.

**What effect will participation in a tutoring service learning project have on students' perceptions of the relevance of school?**

According to the literature, students are more likely to remain in school if they believe that school is relevant to their lives. Students who drop out of school very often feel that school is unimportant to their future and that it does not meet their current needs. To assess what effect tutoring may have on the tutors' perceptions of the relevance of school: the researcher analyzed student interviews and journal entries. Because each of the participants had been identified as at risk due to failure, behavior, or attendance, the researcher anticipated that most of them would describe school as irrelevant in some way in their pre-interviews. The data proved otherwise.

With few exceptions, the tutors in this study viewed school and the schooling process as very relevant and in mostly positive terms. During their pre-interviews, students were asked, "How important do you think graduating from high school will be to get the kind of job you want as an adult?" They believed that graduating from high school was important, in order to get the kind of job they wanted as an adult. Angel described graduating from high school as necessary in order to be successful:

> I think it is very important, because if you want to be successful you'll really need to pay attention in high school. So I think it is real important to graduate if you want to be successful and have a life.

Like many of the tutors, Angel did not mention a specific career that she was personally interested in pursuing. However, she was able to describe the importance of most of the subjects she was studying for various possible careers.

> Science, if you want to be any kind of doctor, cosmetologist, or any kind of science person then you'll need science. Reading, we'll have to know how to read. IPS. [Informational Problem Solving, a required course that focused on research, technology, and presentation] Science, and Math seem like stuff we'll need to graduate and be a doctor or a businessperson. Math, you will really need to know math if you want to be a businessperson. And IPS they are more teaching you about business and stuff like that, if you want to be a businessman.

Angel believed that graduating from high school was important. She also believed that the subjects she was studying were relevant to her life, in terms of preparing her for a career. However, Angel had a difficult time describing how graduating from high school would improve the quality of her life in terms other than a career. When asked "how important do you think graduating from high school will be for the quality of your life, not just a job but everything else after high school", she replied: "Like math, you'll really need to know math to do your taxes and banking accounts." She then immediately began describing the subjects as preparation for a career. With her thinking of the relevance of school framed in such a way, it was understandable that Angel described history this way: "And history, I really don't understand why we have to have history."

Most of the tutors responded similar to Angel. They believed it was important to graduate from high school in order to get the kind of job they wanted after high school, associated a quality life with career and other financial abilities, and believed that math was very important to their future and history was unimportant. When their post-

interviews and journal entries were analyzed, most of these students reported little change in their perceptions of the relevance of school. The following is a sample of their responses to the question: "Has tutoring changed your ideas about how important you think school is to graduating from high school and getting the kind of job you want after high school":

> No, because I already know what I want to be in life and that I need to graduate to do it. (Keisha )
>
> No, it has helped me out more by showing me things I didn't understand. (Shaquoyah)
>
> No. I want to be a marine biologist, but we haven't learned anything about it. (Danielle)
>
> No. I want to be a psychologist so I have always known I need to graduate. My heart is set to it. (Lindsey)

These students, a sizable majority of the tutors, believed schooling and graduation were important before tutoring. Consequently, their post interviews do not indicate major differences in their perceptions of the relevance of school. However, several of these students did report some changes in their beliefs, when asked if tutoring had changed how important they think school is to graduating and getting the kind of job they want after high school. The following comments were made in interviews or journal entries:

Yes. It has shown me that I need to know this stuff, because some of the stuff I tutored I didn't know. I need to, so it encourages me. (Lindsey)

Somewhat or at least a little bit, because now I know I can help people do good. (Josh)

Yes, it has helped me understand my career that I want. (Hernando)

Yes, a little bit. I thought school was important but now I know I need to work a little harder. (Jennifer)

A few tutors appeared be ambivalent about schooling prior to tutoring. They did not especially like or dislike school and they believed that the only value of school was the diploma that would allow them to get a job. They often thought classes were boring. However, they believed that they needed to graduate from high school and believed that their teachers were helping them to do so. Randy's pre-interview is a good example of the small number of tutors who appeared to be ambivalent toward schooling:

Researcher: How do you feel about school?

Randy: I don't particularly like it, because we have to turn in the work and everything you know, but other than that is pretty much it.

Researcher: How do you feel about your classes?

Randy: Most of them are pretty fun. The teachers do fun activities. Sometimes it is kind of boring, when we have to take notes or copy stuff.

Researcher: How do you feel about the things you are studying in terms of helping you to graduate from high school?

Randy: I'm not really thinking about it right now, but they will probably help in the future a lot.

Researcher: How well do you think this school is doing to help you to graduate?

Randy: Just learning what I need to know.

Researcher: How important do you think graduating from high school is to get the kind of job you want as an adult?

Randy: I don't want to be some person on the street who doesn't know anything because they dropped out of school.

For Randy, and several other tutors prior to tutoring, classes bored them. He didn't particularly know why he needed the subjects he was enrolled in, but he trusted the teachers to know what he needed. While Randy seemed ambivalent toward school, he felt strongly that it was important to graduate.

In Randy's post interview, his feelings did not appear to change significantly after tutoring. He stated, "When I graduate, no more school for me." Again he stated that school was "boring". Most importantly, he also stated that he would like to tutor again.

After tutoring, Randy continued to view his classes as boring, but he also continued to view school as relevant to his future. Most importantly, he viewed tutoring as a positive experience and was willing to do it again. Randy's math teacher described his improved participation in the classroom during and after tutoring, with Randy tutoring

other students in class. Perhaps for students like Randy, the ambivalent students, tutoring was most beneficial because it gave them an interesting way to learn. Perhaps tutoring benefits them most if they are given the opportunity to tutor in and out of class and over a sustained period of time.

The effects of tutoring had the greatest potential for students who did not view school as relevant. However, as stated previously the vast majority of these at-risk students viewed schooling as relevant, at least in terms of needing to graduate from high school. After analysis of the data, one tutor was identified as feeling in very broad terms that school was not relevant to her life. Marcela was identified as at risk due to failure. In addition, Marcela was an English as a Second Language student who had been placed in regular classrooms this year for the first time. In her post-interview, Marcela described her changes in attitude toward schooling after tutoring:

Researcher: Before you began tutoring, think about all the things you were studying in school. How important do you think they were to helping you to graduate?

Marcela: They were. I don't know, now that I realize they are more important because I didn't pay attention and stuff and now they help me a lot.

Researcher: Now you think they are more important to helping you to graduate?

Marcela: Yes.

Researcher: Did you think they were important before tutoring?

Marcela: No (emphatically)!

Researcher: Did you care? Did you want to graduate from high school?

Marcela: I didn't even think to graduate.

Researcher: You weren't thinking about graduating? Or coming to school?

Marcela: Right.

Researcher: How well do you think our school is doing to help you to graduate?

Marcela: I think they're doing good.

Researcher: Can you tell me what you think we're doing well?

Marcela: Helping us to understand things more better and like telling us if we understand it.

Researcher: How important do you think it is to graduate to get the kind of job you want?

Marcela: I think it's important because you're not going to be working at McDonalds for nothing. It's important. It's good because you can help more people if you're a nurse or go to houses and help them.

Researcher: Is that something you want to do, to become a nurse?

Marcela: No, I want to be a veterinarian.

Researcher: Before you began tutoring, did you think it was important to graduate from high school to get the kind of job you wanted?

Marcela: No, I didn't care.

Researcher: You just didn't think about it or you didn't care?

Marcela: I didn't care.

Researcher: Help me understand. Saying I didn't think about it means you just didn't give it much thought. But saying I didn't care to me means I didn't really care if I graduated or not. Which...?

Marcela: I didn't care.

Researcher: How do you think tutoring has changed you?

Marcela: Well, my grades. I improved my grades.

Researcher: Can you tell me how you think tutoring may have helped you improve your grades?

Marcela: It made me realize, I don't know, its changed the way I, because I was doing bad in math and it made me realize I should care more and I got into it and became a tutor for math.

Marcela stated that before she tutored, she did not care if she graduated. Unlike the other tutors in the study, graduating from high school was not one of her goals. School, in these terms simply was not relevant to her. However, Marcela also stated that she did not want to work at McDonald's. Marcela never at any time during formal interviews and informal discussions with the researcher discussed how learning a new language was effecting her. It is possible that Marcela honestly did not see herself graduating, because of her struggle to learn a new language, not simply because she didn't care as she implied in the interview. Nonetheless, she described beginning to feel like she should care more about school. Perhaps tutoring gave her the confidence in herself that she needed to believe she could graduate from high school.

The tutors may have believed that graduating from high school was important to their future, but how did they feel about the school they were currently attending? It was possible that while they believed graduating from high school was important, they also believed that the school they were currently attending was not helping them to do so. Their perceptions of their school may negatively effect their view of the relevevance of school. Several questions were designed to assess how they perceived the school they were attending.

In an attempt to clarify their perceptions of the school they were attending, the tutors were asked, "How well do you think this school is helping you to graduate from high school?" Most of the students had positive views of the school, prior to tutoring. The tutors often mentioned their teachers in positive terms. Mitchell explained: "The teachers are nice and they want to help. The teachers here, how they teach [are preparing me to graduate]. Lisa also liked the teachers and believed that they were helping her to graduate:

> So far every school has [prepared her to graduate]. But the teachers at my other school were like you need to grow up or you're going to not graduate. I was like ok [mocking tone of voice]. You all don't say that here. It is different.

Lisa thought that the teachers at the school believed she would graduate from high school. That may have in turn made her feel better about them and possibly the school. Georgia, described liking her classes because of her teachers: 'They don't teach in a

really boring way where you always get a lot of paper work or book work. They make it interesting so I learn better. All the teachers are nice."

The tutors very often evaluated the school and its teachers in terms of how well they were preparing them for TAAS at the end of the year. For example, when Chris was considering how well the school was preparing him to graduate, he replied: "They teach me what I need to know to go to high school and pass the TAAS test. If they don't teach me that, than I won't know anything." In her post-interview, Lashonna described not liking school at the beginning of the year and what changed her attitude:

> I like school better than I did at the beginning of the year, because I didn't understand anything, especially math. But now I feel it has really helped me because I passed all my TAAS tests. When I passed my TAAS math test, I just couldn't pass that and I was so happy. And I think that's all to Miss Elzy (Lashonna's math teacher)!

According to the data, most of the tutors viewed school as relevant and believed that their teachers were helping them to graduate even if they did not always think that school was exciting. Did these tutors believe that the subjects they were studying were relevant to their lives?

During the interviews, the tutors were asked, "How do you feel about the things you are studying in school in terms of helping you to graduate from high school"? Without exception, students described math and English as very important subjects, if they hoped to graduate. This is a reasonable response, because they must pass the TAAS

reading, writing, and math test in order to graduate from high school. Throughout the school year, their English and Math teachers focus on materials to help them pass those tests. They were less certain about the importance of History and Informational Problem Solving (IPS).

Prior to tutoring, most tutors felt that studying math was very important to their future lives. Did tutoring change their perceptions of math? To analyze this question, the researcher analyzed post-interviews and journal entries. It was expected that many students would respond that tutoring did not change how they felt about the importance of math, because so many of them said that they believed it was important prior to tutoring. Indeed, most of the students reported no change because they had always felt math was important. However, there were some other interesting remarks made by the tutors.

The tutors remarked in their interviews and in their journal entries that after tutoring, they felt math was more interesting. Hernando's statement is a good example.

> Math sucked. You'd go to class and do the work and do the homework. But then I started tutoring, and it turned out to be fun and interesting. I really liked tutoring. I liked teaching!

A few of the tutors reported feeling like math had become more important since tutoring. Kenneth explained:

> I thought math was needed just to see how much money you make. I was doing great in math class, but now that I have started tutoring I am even doing better. I have found out things that I didn't even know. I also learned things I forgot. Now, I see that you need math for many things in your life. Math is the most important subject in the school.

For Kenneth, math had always been relevant to his life. However, after tutoring he felt its relevancy to his life in much broader terms. Few of the tutors reported, like Kenneth, that tutoring had broadened their perception of its relevancy. However, nearly all of the tutors believed that tutoring had confirmed for them that math was important.

A few tutors reported that tutoring had become more important to them, since they began tutoring. Tiffany remarked, "I thought it [math] was important, but not a lot until I started tutoring." Others reported feeling like they really needed to pass it for the

first time. In a somewhat amusing fashion, Shaquoyah's viewpoint could easily summarize the views of many of the tutors:

> I didn't think math was all that. It was something that made your brain overwork itself. Math is now something that everyone uses every day and we have to know it.

The qualitative data indicated that most tutors held positive perceptions of the relevancy of school, prior to tutoring. This is especially true if we consider relevancy in terms of students believing that they need to graduate from high school. For these students, tutoring did not improve but rather reinforced their perceptions of the importance of school. The data also indicated that prior to tutoring, most of the tutors believed that their school was doing a good job preparing them to graduate from high school and that the subjects they were studying, especially English and Math, would help them to graduate. After tutoring, the tutors continued to believe that math was important and a few broadened their conception of the relevance to their lives, with some deciding for the first time that they needed to pass it. A few students reported that tutoring had caused them to begin liking math.

**What effect will participation in a tutoring service learning project have on students' perceptions of how well they are doing in school?**

In their final journal entry reflections and post-interviews, most of the tutors believed that they were doing better in school since tutoring. For many, they measured their success in school in terms of grades. The following is a sample of their comments from final journal entries:

> I am doing very well in school from my point of view. My grades have improved very much since last six weeks. (Georgia)
>
> I am doing great in school. Every since I have done this tutoring, it has made my grades go up. (Delbert)
>
> I am doing better. My grades have been pulled up from turning in my work and understanding the math problems. (Shaquoyah)
>
> I am doing way better than I was doing. I have better grades and actually turn in my work most of the time. I think I am doing better. (Jennifer)

Many students also believed that tutoring helped them improve their math grade. Throughout the tutoring project, weekly reflection seminars were held. Very often the tutors initiated discussions of how their math grades were improving. The following seminar discussion demonstrates that the tutors believed that they were improving their math skills. This particular discussion took place during week four of the tutoring project.

> Researcher: Who would like to share good news?
>
> Two Tutors: I will, I will.

Tutor A: We take a math quiz every week. [Weekly TAAS preparation quizzes in all math classes that began at the beginning of the tutoring project]. On my first math quiz, I made a 56. Then I made another F and then a B. Today when I took it I made a 100!

Researcher: That is wonderful!

Tutor A: I'm proud of myself.

Researcher: You should be. Other good news stories?

Tutor B: I'm starting to try to pass.

Researcher: Can you tell me a little bit about why you think that is happening?

Tutor B: I'm feeling more responsible.

Researcher: Do you feel tutoring is making you feel more responsible?

Tutor B: Yes. I was making 50s and 60s in math. I just made an 80 on a test! I never made an 80 before on a math test.

Analysis of the other seminar recordings, in addition to the journal entries, confirmed that by week three of the tutoring several tutors believed they were doing better in school, especially math. The following is a sample of tutor comments from their final journal entries:

> I was making C's in math and now I'm making B's and A's.
>
> (Paulo)

I was making C's in math before tutoring. Now I am making A's and B's in math. (Mitchell)

I was doing great in math class, but now I that I have tutored I am doing even better. I found out things that I didn't even know. I also learned the things that I had forgot. (Kenneth)

I'm doing good in math, but before tutoring I was doing bad. I think tutoring helped me to do better in math. (Keisha)

Several tutors reported that tutoring had not improved their math grades. Two of these students were earning A's in math, at the time tutoring began. Consequently, they may not have recognized more discreet units of improvement. What is most interesting is that for two of the students who did not perceive an improvement in their math grade, their math teacher reported they had indeed improved.

Their teachers reported that they were turning in homework and participating in math class for the first time all year. The improvement the teachers described was in all of their subject areas, not just math. Why did these students not perceive that they were doing better in school? Perhaps this can be attributed to the timing of the final journal entries, at the end of the six week period in which they tutored. The teachers of these two students commented that the improvements they saw occurred during the tutoring period and in the six-week period afterward. Perhaps they simply needed more time to change their perceptions of how well they were doing. To fully assess how the tutor's perceptions of success in school had changed after tutoring, the final interviews were analyzed. The final interviews took place during the six-week period after tutoring.

Several tutors reported experiencing some degree of cognitive dissonance concerning how well they were doing in school. To explain, when they began tutoring they were immediately confronted with their own weaknesses in math and it troubled them. Lindsey described this discovery:

> I think the way tutoring has changed me is that it has made me realize that I need to try remember more and pay attention more. I'm trying to get my work in as much as I can. I realized these kids are in sixth grade and I'm in the Eighth grade, and they're doing better than me. I should be working just as hard as they are. So it made me realize that I need to work harder for what I want to do in my life.

Lindsey had failed the TAAS Math test the previous year and hard barely passed her math class with a 70% the six-week period prior to tutoring. She described in her interview a real concern for passing the TAAS. However, when asked about her grades in math in the six-week period prior to tutoring, she replied that she thought she made an 80. Tutoring a sixth grader made her realize that she was behind in math, and needed to work harder. She improved her grade in math from 70% to 96%!

A few of the tutors' self perceptions of success in school were so low that they did not believe that tutoring another student would help them to improve. Alishia, who was described previously in the chapter as a failing student with absolutely no confidence or desire to participate in class, described how tutoring changed her perspective:

Researcher: Tell me about your tutoring experience.

Alishia: I liked my student. I liked helping her, when she was stuck on a problem. I would help her by telling her what she did wrong.

Researcher: How did that make you feel when you were helping her?

Alishia: Good, because I was helping someone younger than me.

Researcher: Did she share anything with you about how you were helping her?

Alishia: Yes, she told me during our reflections that she was improving.

Researcher: How do you think tutoring has changed you, if it has and it's ok if you think it has not?

Alishia: When I'm helping someone, they help me too. And that changed me, because I didn't think they could help me.

Researcher: So you feel like you were helping them and at the same time you improved?

Alishia: Yes, because I was getting better at it.

During the training sessions prior to tutoring and the first few tutoring sessions, the researcher observed that Alishia was very nervous about tutoring. She asked many questions, mostly seeking confirmation that she was doing it right. She simply did not believe that she had the skills necessary to tutor. However, as can be seen from her post-interview, she believed that her tutor had helped her to learn and that she was improving. . Alishia continued in the interview describing how she had improved in her other classes and her mom was proud of her. She felt good about her successes.

Many tutors also described in their post-interviews and in informal conversations how the tutoring sessions became sessions of mutual help, because the tutors had weaknesses in their mathematical skills. Lashonna explained in her post-interview:

Lashonna: I feel comfortable with me teaching, with me teaching that person something that they don't understand. But most of the time, she had to teach me how to do it because I didn't understand most of that stuff when I was in sixth grade. My sixth grade teacher didn't help me that much with anything. My student taught me how to do some of that stuff and I was like OOOH that's how you do that! So she was teaching me some stuff and I was teaching her.

Researcher: How did that make you feel?

Lashonna: At first, it made me feel like oh, I'm not that dumb, I'm not that stupid (Lashonna says this with a questioning tone of voice and bodily expressions as if to say I was worried that I was stupid), but then I was teaching her and she was teaching me. She was really smart. I don't know why she needed tutoring, but she needed help with her fractions.

Researcher: Were you able to help her with her fractions?

Lashonna: Yes.

Researcher: How did that feel? Did you feel comfortable tutoring her?

Lashonna: Yes. I felt comfortable.

Researcher: Did you always feel comfortable?

Lashonna: No. in the beginning it felt very uncomfortable.

Researcher: By the end of the tutoring. did you feel uncomfortable as the teacher?

Lashonna: No. I still felt like I was the teacher. because I knew harder stuff. I was a little afraid. but I felt ok by the time we stopped tutoring.

Researcher: Do you think the tutoring has helped you?

Lashonna: At first. I was like man this isn't going to help me. I'm going to have the same difficulties that I had at the beginning of the year. At first I didn't think it would help. but now it helped me because I learned it all this year. I have much more faith in myself. You got to believe that you can do it. and I put much faith in myself that I could do it.

Like Lindsey and Alishia. Lashonna was unsure of her abilities to tutor. She realized when she began tutoring that she did not know things she should have known in the sixth grade. Her initial perception of her success in math was low. However. she continued to tutor even though she was afraid. Notice that she felt like she couldn't tutor anything. but then she stated that she found she could help her with fractions. Tutoring became a process of mutual help and her perception of success in math improved.

All of the tutors were afraid, but they found that their student was helping them to learn. None of these tutors gave up, even though they felt embarrassed at their lack of knowledge. They all reported that tutoring helped them to succeed in school, especially math. Their perceptions of school likely changed, because they were forced to admit that they were truly behind in math. They all reported feeling a sense of pride in being able to help their student. Pride likely then helped them to find the courage to continue to tutor. In addition, all of the tutors continued to tutor. By the time they finished tutoring, their perceptions of success in school had improved.

The qualitative data suggests that tutoring had a positive effect on the tutors' perceptions of success in school. With few exceptions, the tutors measured success in school according to grades. Nearly all of them believed that tutoring had helped them to improve their grades in math and many believed that it had helped them improve their grades in other classes as well. A few tutors reported that their grades had not improved after tutoring. However, interviews with their teachers and statistical data indicate that their grades did improve during the tutoring project and in the six-week period following. The conclusion can be made that for some students, especially if they already have a low perception of success in school, changes in perceptions will require more time to develop.

The qualitative data also indicates that tutoring altered student perceptions of success in school by making them more honest. Prior to tutoring, several students believed that they were doing fine in math. When they began tutoring and could not help their sixth grade student with math problems, they realized that they were actually very behind. Their perceptions of success in school changed, and they made positive adjustments. They did not give up, but continued to tutor asking for help from a teacher

when needed. These tutors developed a sense of pride. They wanted to learn math. The qualitative data suggests that these students worked harder, in order to avoid embarrassment in front of their student and because they genuinely perceived a need to improve in order to pass math class or the TAAS Math test.

A third theme concerning change in student perception of success in school emerged from the qualitative data. The tutors believed that their student had helped them during the tutoring process, even though many of them had very poor perceptions of their success in mathematics, prior to tutoring. Prior to tutoring, they did not believe that tutoring would help them to improve. Perhaps they based this on previous experience in a tutoring situation as a student. However, many tutors described in the interviews and in informal conversations that their student was teaching them and that they were learning too. This was a positive change for the tutors.

**What effect will participation in a tutoring service learning project have on students' feelings of alienation?**

Alienation was defined in the introduction to this study as: student attitudes toward school characterized by feelings of not belonging to the school's social structure and with student attributes that may include any of the following: a lack of student participation in school events or extra-curricular activities; student non-identification with a social group within the school; or student identification of membership within a small group only. Did participation as a tutor reduce student feelings of alienation?

To explore this question, student responses to two questions on both the pre and post interview were analyzed. In addition, student journals and interviews with the students' teachers were analyzed.

To analyze student involvement with school events or extra-curricular activities, students were asked to describe the kinds of activities they were involved with at school. The interviewer explained that the activities included clubs, organizations, and before or after school activities. Repeatedly during the pre-interviews, students responded that they were not involved with any activities. A few named elective classes such as Family Living or Metal Shop, but these are academic courses with no activities associated with them. These at-risk students did not participate in clubs or organizations, with the exception of a small number of students who reported participation in athletics. Due to a no pass-no play law in the state, many of these students were no longer participating in athletics by mid-year.

Lashonna's description of her feelings about being a part of an organization was similar to many other students. When asked about participation in clubs or organizations, she replied:

> not until YHY [Youth Helping Youth, the official name given to the tutoring project] and I was like Man, I finally get to do something! I was like ooooh Mama, I get to join an organization, a club. I told her what it was and she was like you're going to be helping sixth graders in math and you don't even know it yourself? I said I can help

These at-risk students attend a school that offers very few organizations, clubs, or activities for them to become involved in. The school offers Student Council, Honor Society, Fellowship of Christian Athletes, and new this school year Crime Stoppers. Students enrolled in athletics, band, choir, and orchestra can participate in their contests. However, to be eligible to participate students must be passing all of their classes. While there is an official Art Club, activities are never planned. Clearly these at-risk students do not have many opportunities to participate in school activities, because nearly all of them were failing at mid-year. Feelings of alienation and the frustration of it were evident in their post-interviews and journals. Randy, a student identified as at risk due to attendance, behavior, and failure best expressed this. When he was asked about his activities, he replied I'm doing this tutoring thing and I don't really do anything else. I used to be in athletics. When asked what happened in athletics? Grades...Three strikes, you're out!"

Without any club or activity available to most of these students, they sought some way to establish a connection to the school and an identity within it. Mitchell, a tutor identified as at risk due to attendance, was very excited about becoming a part of the tutoring project. After he was invited to participate, he would ask the researcher each day when we would be starting. He could not wait to get started! After tutoring his student three days in the researcher's classroom, he quit.

After two days, the researcher talked to him to gather information. He was asked: Is there a problem with your student? No. Are you having difficulty tutoring? No. What then is the problem? Mitchell replied that he did not want to give up his hall monitoring position! Mitchell had been given the "job" of monitoring students in the hallway, sending them on to their 0 periods to get them out of the halls. It required him to be

outside the cafeteria every morning, the same time the tutoring was being held! The researcher spoke to him about it, and was able to persuade him to continue the tutoring, as it was just a short period of time and it would help him with his math.

Mitchell's dilemma seemed silly to the researcher, until the researcher gave more thought to the need we all have to belong, to fit in, to be needed. For the middle school student, this need is even greater and the school these students attended offered few opportunities to do so. Mitchell resisted alienation the only way he knew how, by becoming a hall monitor. Several other tutors mentioned special "jobs" they had, like helping various teachers before or after school, when asked about participation in school activities. Mitchell continued his tutoring and promptly returned to his hall monitor job after the tutoring was over.

Students were asked whether they would participate in tutoring again some time in the future during the final reflection seminar, their final journal entries, and during the post interviews. Some of their comments reinforce the evidence that these students felt alienated at their school and enjoyed tutoring, because it helped them feel less so. Alishia, at risk due to behavior and failure, replied, "Yes. I would love to tutor again. It was cool being one of the chosen ones!" Lashonna replied, "Yes. I would do it again because it would give me something to do." Monica replied, "Yes, I'd love to in a heartbeat. I love helping other students. If you need help with anything, I'll help you!" When Lashonna was asked what

In summary, the qualitative data suggests that tutoring reduced feelings of alienation among many tutors. A need to belong or to feel needed is psychologically very intense for middle school students. Nonetheless, because so many of these students were

failing one or more classes they were not allowed to participate in school activities. Only a few of the tutors reported prior to tutoring that they were involved in any kind of club or activity. Tutors reported feeling very excited about being allowed to participate. Perhaps the best evidence of their need to feel important and desire to participate in school activities is the almost unanimous agreement among them that they would love to tutor again.

**Summary of the Qualitative Data**

The qualitative data of this study suggest that at-risk students are motivated internally and externally to attend or to miss school for a variety of reasons. Internal reasons included an appreciation for a class or a subject and a desire to go to school because they believed it was important to their future. External reasons for attending school included a desire to see friends, to avoid makeup work, and because their parents made them attend. Tutoring reinforced these motivations to attend school and introduced a new motivation, a feeling that they were making a difference.

Tutoring had a positive effect on most of the tutors' feelings toward attending school. In the pre-interviews, the most frequently mentioned motivation for attending school was to see friends. In the post-interviews, most of the tutors reported forming a friendship with their student, and a desire to come to school in order to see them. In the few cases where a friendship did not develop between tutor and student, the tutors did not report an increased motivation to attend school. In addition, the tutors reported that a sense of responsibility to their student encouraged them to come to school. Tutors also

reported a desire to come to school during tutoring because they felt like they were involved in something important and therefore felt important themselves. Tutoring had the most positive effects on students who were identified as at risk for failure and attendance. The data indicated that prior to tutoring these tutors, unlike the tutors at risk just for failure, blamed their failure on their own inabilities and frustrations and sometimes chose not to come to school to avoid feelings of failure. The tutors at risk for failure and attendance experienced moments of success during tutoring. They indicated in their post-interviews that in addition to the reasons stated above, tutoring had made them feel more confident and this in turn made them want to come to school in order to tutor.

The qualitative data presented above suggests several important conclusions about the effects of tutoring on the tutors' behavior at school. First, tutoring had positive effects on student misbehavior, even for students involved with drugs or gangs. However, the positive gains were minimized when school administrators reassigned students to other schools. Secondly, one of the most common improvements in student behavior was a willingness to do classwork and help other students in class. This is an important effect, because students are so often sent to the office for refusing to work and other minor forms of resistance such as talking instead of working. Third, the tutors often assumed the role of teacher in the classroom. Improvements in behavior were likely the result of the self-confidence gained in tutoring, a feeling of having a purpose in school, and a sense of fulfilling a responsibility.

The tutors' academic performance in math was enhanced in several important ways. First, the students believed they were improving. For some of the tutors, this was the first time they actually believed they could improve their math skills. Secondly, the

tutors were more willing to attempt math problems in class after becoming a tutor. This was especially true for the tutors who tutored basic skills, in other words the students who needed the most help with their mathematical performance. Third, during and after the tutoring service some of the tutors turned in more math homework. Fourth, many of the tutors began helping other students with their math during and after tutoring. A final finding from the qualitative data suggested that participation as a tutor can improve performance in math by giving teachers an additional opportunity to see student weaknesses and to assist them with those weaknesses.

Tutoring reinforced for most tutors the relevancy of school. Most tutors held positive perceptions of the relevancy of school, prior to tutoring. They believed that they needed to graduate from high school. Post-interviews did not indicate a change in this perception. For these students, tutoring reinforced their perceptions of the importance of school. Prior to tutoring, most of the tutors believed that their school was doing a good job preparing them to graduate from high school and that the subjects they were studying, especially English and Math, would help them to graduate. After tutoring, the tutors continued to believe that math was important and a few broadened their conception of the relevance to their lives, with some deciding for the first time that they needed to pass it. A few students reported that tutoring had caused them to begin liking math.

Tutoring had a positive effect on the tutors' perceptions of success in school, with nearly all tutors measuring success in terms of grades. First, nearly all of the tutors believed that tutoring had helped them to improve their grades in math and many believed that it had helped them improve their grades in other classes as well. A few tutors reported that their grades had not improved after tutoring. However, interviews

with their teachers and statistical data indicate that their grades did improve during the tutoring project and in the six-week period following. The conclusion can be made that for some students, especially if they already have a low perception of success in school, changes in perceptions of success require more time to develop. Second, tutoring encouraged the tutors to acknowledge their weaknesses in math and their need for improvement. They made positive adjustments of their perceptions of success by working harder in math class. Third, the students with the poorest perceptions of their abilities prior to tutoring recognized that tutoring had helped them to improve and felt good about the successes they experienced during tutoring.

A need to belong or to feel needed is psychologically very intense for middle school students. Nonetheless, because so many of these at-risk student tutors were failing one or more classes they were not allowed to participate in school activities. Tutoring improved their feelings of alienation from the school. The tutors were very excited about being allowed to participate, feeling as if they were "the chosen ones". They all agreed that they would like to participate in a tutoring project or some other service project in the future.

In the next section, the quantitative results of the study will be presented. The data measured the effects of tutoring on the tutors' attendance rates, office referrals for misbehavior, and academic performance in math. The data will provide valuable additional information to measure the effects of tutoring on at-risk students.

## Quantitative Findings

**What effect on attendance rates will participation in a tutoring service learning project have on students who are identified as at-risk to dropping out of school?**

The researcher gathered official attendance records from the school attendance secretary. These records are a valid indicator of student absences, because the secretary reviewed them daily for inaccuracies and corrected them. Attendance records were collected for the six-week period prior to tutoring, the six-week tutoring period, and for the six-week period following the tutoring. The unit of analysis was a student absence.

State and local school district regulations concerning absences determined when the researcher counted an absence as an absence. According to state and local regulations, a student absence is considered an excused absence only in the following circumstances:

1. Student Illness: A doctor's note must be presented to school officials.
2. Court Appearance: A judge's note must be presented to school officials.
3. Funeral: Three days allowed with parental notification of school officials.

The researcher followed the district guidelines above concerning absences. Absences due to illness were considered unexcused absences, with or without parental notification, if a doctor's note was not presented. Very often, students in this study missed school due to illness without a doctor's note. A student was considered absent, if they missed three full periods of the school day.

The researcher made one exception to district guidelines, in an attempt to preserve the validity of the study. According to district policy, absences due to in school or out of school suspension are considered unexcused absences. The researcher classified days missed due to suspension as a measurement of misbehavior not attendance, and thus did not count these days as student absences. This study attempted to clarify how participation as a tutor would change student perceptions of attending school and actual attendance rates. The researcher believed that including days missed from school due to misbehavior would confound the statistical data concerning attendance. While some may argue that some students purposely misbehave, because they do not want to attend school, the researcher found no evidence of this in the qualitative interviews with students identified as at risk for behavior or attendance. The researcher did not count suspension days as days absent, and only a few students who participated in the study were actually suspended.

During the six-week period prior to tutoring, the tutors (n=31) did not appear to miss many days of school ($\underline{m}$= 2.13, SD=1.64). More than half of the tutors missed 0 to 2 days of school during the previous six weeks (n=16), with all of the remaining tutors missing three to six days of school.

Did the tutors miss fewer days of school while they were tutoring? Comparisons were made to measure differences in absences between the period prior to tutoring ($4^{th}$ six weeks) and the period of tutoring ($5^{th}$ six weeks). The data indicated that the tutors were absent less often during tutoring ($4^{th}$ six week $\underline{m}$= 2.13. SD=1.64; 5th six week $\underline{m}$=1.20. SD=1.20). The range of absences did not significantly change ($4^{th}$ six week=0 to 6 absences: $5^{th}$ six week=0 to 4 absences); therefore the mean is a good indicator of student attendance. As a group, the tutors missed far fewer days while tutoring ($4^{th}$ six week sum=62: $5^{th}$ six week sume=35).

A dependent comparison was completed, in order to measure the effects of tutoring on attendance rates. First, histograms and normal probability plots were computed to determine the normality of the data, see figures 1 and 2. The data appeared somewhat normal, with the exception of one tutor who missed six fewer days while tutoring. The data also indicated that most tutors missed less school during the $5^{th}$ six-week period of tutoring.

Attendance Differences for Tutors
4th and 5th Six Week Period

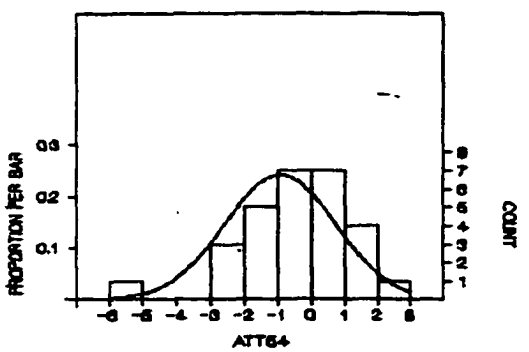


Figure 1

Normal Probability Plot
Attendance Differences Tutors 4th and
5th Six Weeks

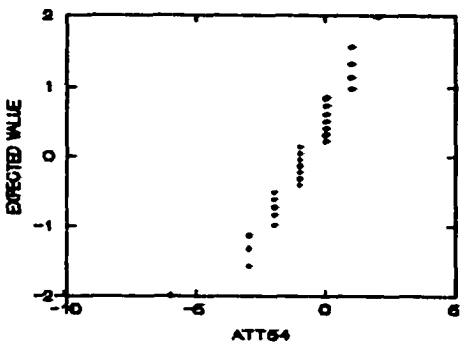


Figure 2

To measure the degree in which tutoring may have had an effect on attendance rates for participants, three statistical tests (ANOVA) were conducted. The first test measured differences in attendance during the six-week period prior to tutoring for the control and experimental group. No significant difference was found at the .05 level (F=3.026; P= .088). The two groups appeared to be similar and thus additional comparisons appeared to be valid. A second analysis of variance measured the differences between the control and experimental group during the tutoring period. Again no significant difference was found at the .05 level (F=0.191; P=. 664). The third analysis of variance measured the differences between students previously identified as at risk due to attendance in the control and experimental group. No significant differences were

other than tutoring or previous attendance affected attendance rates during the tutoring project.

**What effect on incidents of misbehavior in school will participation in a tutoring service learning project have on students who are identified as at risk to dropping out of school?**

To evaluate the possible effects of tutoring on incidents of misbehavior in school, the researcher collected office referral records for the six-week grading period immediately prior to tutoring and for the six-week period during tutoring. The data was collected from a computer-generated report produced by the Assistant Principal who handled discipline matters for the Eighth grade. Incidents of misbehavior were counted if a participant was referred to the office. The referrals represent a variety of offenses both in and out of the classroom setting.

According to the office referral data, there was a difference in the number of office referrals between the experimental and control group (Table 1). The control group (non-tutors) was referred to the office more than the experimental group (tutors) in the six-week period prior to tutoring and especially in the six-week period during tutoring (control n= 13, n=10; experimental n=5, n=6). Prior to tutoring, one non-tutor was referred five times, with an obvious effect on the mean and sum. However, during the tutoring period the maximum number of referrals for the non-tutors matches the tutors (n=2) and the non-tutors were referred to the office much more often than the tutors (n=10).

**Table 1**

**Descriptive Statistics for Incidents of Misbehavior Tutors/Non-Tutors**

| **Tutors N=31** | **Behavior 4** | **Behavior 5** | **Behavior Difference** |
|---|---|---|---|
| Minimum | 0.000 | 0.000 | -1.000 |
| Maximum | 2.000 | 2.000 | 1.000 |
| Mean | .167 | .200 | .161 |
| SD | .461 | .484 | .820 |
| Sum | 5.000 | 6.000 | 5.000 |
| Median | 0.000 | 0.000 | 0.000 |
| **Non Tutors N=27** | **Behavior 4** | **Behavior 5** | **Behavior Difference** |
| Minimum | 0.000 | 0.000 | -3.000 |
| Maximum | 5.000 | 2.000 | 2.000 |
| Mean | .520 | .400 | -0.120 |
| SD | 1.122 | .645 | 1.013 |
| Sum | 13.000 | 10.000 | -3.000 |
| Median | 0.000 | 0.000 | 0.000 |

Number of office referrals for six week grading period prior to tutoring (Behavior 4) and six week grading period during tutoring (Behavior 5)

A statistical test (ANOVA) was performed to determine if the groups were significantly different in terms of incidences of misbehavior prior to tutoring. It was determined that the groups were not significantly different at the .05 level (F= .211; p = .648).

A second analysis of variance was conducted in order to evaluate how incidents of misbehavior differed during the tutoring period. Again no significant difference was found (f=1.721; P=. 195); however the significance level was stronger during the tutoring period.

A third analysis of variance was performed in order to more precisely measure behavior differences during the tutoring period, for participants previously identified as at risk due to misbehavior in school. As expected, the results indicated that there was a significant difference in incidences of misbehavior between participants identified as at risk due to previous misbehavior and participants not so identified (F=7.061; p=. 011). However, the results indicated no significant interaction between tutoring and identification as at risk due to misbehavior (F=. 094; P=. 760). Tutors who were identified as at risk due to misbehavior did not differ significantly from their at risk counterparts who did not tutor.

**What effect on mathematical academic performance will participation in a tutoring service project have on students who are identified as at-risk of dropping out of school?**

A variety of data was collected and analyzed in order to evaluate the effect of tutoring on students' mathematical performance. For each participant in the study, the researcher collected his or her report card grades in math for the grading period immediately prior to tutoring and for the grading period during tutoring. TAAS scores were collected for the participants identified as TAAS skills tutors. These measures included the math scores on the TAAS pre-test administered by the school district three weeks prior to tutoring and the official end of year math TAAS test administered two weeks after tutoring ended. These scores served as pre and posttest measures. In addition, individual scores were collected for each tutor on the TAAS math objectives they

reported tutoring. Pre and post tutoring multiplication test scores were collected for students identified as Basic Skills tutors who did not take the official TAAS test.

Analysis began with a comparison of the mean differences in math grades math grades for the control and experimental groups (Table 2). The spread of the scores for both tutors and non-tutors indicated that during both grading periods at least one student in each group failed math with the minimum failing grade allowed. However, the tutors appeared to have improved their math grade during the tutoring grading period considerably more than the non-tutors ($\mu$ math 5 = 76.033; $\mu$ math 4= 70.923) with a mean difference of 3.833. The two groups appeared to be from a similar population.

**Table 2**

**Descriptive Statistics of the Experimental and Control Group Pre and Post-Tutoring Math Grades**

**Tutors: N= 31**

| | **Math 4** | **Math 5** | **Math Difference** |
|---|---|---|---|
| Minimum | 55.000 | 55.000 | -8.000 |
| Maximum | 96.000 | 96.000 | 26.000 |
| Mean | 72.167 | 76.033 | 3.833 |
| SD | 10.492 | 9.561 | 8.502 |

**Non-Tutors: N= 27**

| | **Math 4** | **Math 5** | **Math Difference** |
|---|---|---|---|
| Minimum | 55.000 | 55.000 | -21.000 |
| Maximum | 98.000 | 95.000 | 20.000 |
| Mean | 70.769 | 70.923 | 0.154 |
| SD | 12.278 | 11.335 | 10.862 |

Math 4 = 6-week grading period immediately prior to tutoring

Math 5 = 6-week grading period in which tutoring took place

A paired sample T-test was conducted and revealed a significant difference at the .05 level between the means of the two groups on their math scores before and during tutoring (Tutors Mean Difference = 3.833; SD Difference = 98.502; T=2.470; P = .020).

In assessing the data, special attention was paid to how students who were identified as at risk for failure might affect any statistical comparisons. An independent samples t-test on tutors and math grades for the fifth six-week grading period revealed a significant difference in scores for tutors who were also at risk for failure (.049 at the .05 significance level). Consequently, a comparison was made using a statistical analysis (ANOVA) between the math scores for the tutoring grading period of the control and experimental group and students within each group identified as at risk due to previous failure. Significance for the test was set at the .05 level.

The test revealed a significant difference of math scores during the tutoring grading period for both groups of students, students who had been identified as at risk for failure and students who participated as tutors in the study (Table 3). However, the test did not reveal a significant interaction between the two factors. The data revealed that students who were identified as at risk for failure and who participated as a tutor had a higher mean score than students at risk for failure who did not participate in tutoring ($\mu$ = 73.870; $\mu$= 68.118). Not surprisingly, mean scores were highest for students who participated in tutoring and who were not identified as at risk for failure. However, the lowest mean scores were students identified as at risk for failure who did not participate in tutoring.

**Table 3**

**Comparison of Math Grades Tutoring Grading Period Participants/Non-Participants and Tutors/Non-Tutors**

| Dependent Variable | Sub-Group | Significant Difference (P <. 05) |
|---|---|---|
| Math Grade | Academic Failure | .005 |
| Math Grade | Participant | .035 |

Math Grade = Report Card grade for Six-Week grading period during tutoring Failure=Students in control and experimental groups identified as at-risk for failure. Participant = tutors and non-tutors in control and experimental groups

Data from the TAAS tests were also analyzed to determine what effect tutoring may have had on tutors' academic performance on the state's measurement of their mathematical abilities. This data was collected for TAAS tutors only because many of the Basic Skills tutors either do not take the test or they take a modified test created by the Special Education Department that would not be comparable.

Descriptive statistics revealed much higher gains on the post-TAAS test for the experimental group than the control group (Table 4). The group mean for the control group changed little, hovering just at a passing grade while the group mean for the experimental group improved a great deal. The standard deviations suggested that the two groups were similar. The median score for tutors was much higher than for non-tutors.

**Table 4**

**Descriptive Statistics of the Experimental and Control Group Pre and Post TAAS Test Math Scores**

**Tutors: N= 31**

| | Pre-Test | Post-Test | TAAS Difference |
|---|---|---|---|
| Minimum | 27.000 | 35.000 | -14.000 |
| Maximum | 88.000 | 91.000 | 51.000 |
| Mean | 61.679 | 73.345 | 12.960 |
| Median | 66.500 | 78.000 | 8.000 |
| SD | 17.226 | 15.895 | 14.243 |

**Non-Tutors: N= 27**

| | Pre-Test | Post-Test | TAAS Difference |
|---|---|---|---|
| Minimum | 55.000 | 55.000 | -21.000 |
| Maximum | 98.000 | 95.000 | 20.000 |
| Mean | 70.769 | 70.923 | 0.154 |
| SD | 12.278 | 11.335 | 10.862 |

Were there differences on the TAAS test for students who participated as tutors and those who did not? In addition, what effect did previous failure and student scores on the pre-test have on student scores on the post-TAAS test? In order to explore these questions, two separate statistical tests were conducted (ANOVA and ANCOVA). The first test (ANOVA) measured the differences on the post-TAAS test score with participation as a tutor and previous failure factored in.

Significant differences ($p < .05$) were found on the post-TAAS test for students who were previously identified as at-risk for failure with tutoring as a factor ($f= 4.101$, $p=.05$). This group represented 10% of the model's differences on the post-test TAAS scores. Significant differences were not found for students who had not been previously identified as at risk for failure ($f=.907$; $p= .358$). It appeared the data suggested that

tutoring was most beneficial for tutors who had been identified as at risk for failure, but it did not address how scores on the pre-test may have affected the statistical results.

A second statistical test, ANCOVA was performed to more precisely measure how the three factors of tutoring, previous failure, and the pre-test scores affected the post-TAAS test scores. With the pre-test score factored in as a covariate, the results indicated no significant difference ($p<.05$) on the post-TAAS test scores for students not at risk for failure ($F=.026$; $P=.874$). Differences for students identified as at risk for failure were slightly less significant than the previous score without the pre-test factored in (.061). The statistical data clearly suggested that the pre-test score most affected student scores on the post-TAAS test (at risk for failure: $F=43.054$, $p = .000$; not at risk for failure= .005). To account for how scores on the pre-test TAAS test may have effected differences in scores on the post-TAAS test, an analysis of covariance was conducted. Differences for students identified as at risk for failure were only slightly less significant than the previous analysis without the pre-test factored in (.061).

To increase the validity of the measures of gains in academic performance for TAAS tutors, pre and post TAAS test scores were collected and analyzed for the specific objectives that tutors actually reported tutoring. This data indicated that nearly all of the TAAS tutors maintained or improved their previous score on a TAAS objective. (See Appendix G.) All but three tutors improved their score(s) on TAAS objective(s). Two of these tutors maintained perfect scores on the objectives they tutored (#13, #5) while the third tutor maintained a passing score on the objectives (#9). Eight tutors passed objectives on the post-TAAS test that they did not pass on the pre-TAAS test, with at

least one participant improving nearly all objectives tutored from non-passing to passing (#11).

Students who participated in the tutoring as a Basics Skills tutor were also measured on the specific objective tutored (multiplication) with a pre and post tutoring multiplication skills test (See Appendix H). The data from these tests suggested that the tutors improved their multiplication skills very little, however, the minimum and maximum scores suggested improvement.

When the pre test scores for the tutors and non-tutors were compared, the two samples appeared to differ dramatically (Table 5). The lowest score (number of problems answered correctly), the mean and median scores also indicated that these two groups differed greatly. The data for the post-test indicated some improvement for the tutors, but a fairly large decrease for the non-tutors.

**Table 5**

**Descriptive Statistics for Basic Skills Tutors/Non-Tutors**

**Multiplication Pre and Post Test**

| **Tutors (N=11)** | | |
|---|---|---|
| | **Pre-Test** | **Post-Test** |
| Minimum | 6.000 | 12.000 |
| Maximum | 46.000 | 42.000 |
| Mean | 21.636 | 21.909 |
| SD | 10.604 | 9.995 |
| Median | 20.000 | 21.000 |
| | | |
| **Non-Tutors (N=16)** | | |
| | | |
| Minimum | 17.000 | 12.000 |

| | | |
|---|---|---|
| Maximum | 50.000 | 30.000 |
| Mean | 31.750 | 23.667 |
| SD | 12.567 | 6.653 |
| Median | 29.000 | 24.000 |

A t-test revealed that for both tutors and non-tutors significant differences at the .05 level were found between the pre-test practice exam administered immediately prior to tutoring and the official state exam administered immediately after tutoring (.000; .002). The mean difference for tutors was 12.769 and the mean difference for non-tutors was 8.789. This data revealed that tutoring may have had a positive effect on improving TAAS scores, along with other variables such as students taking the test more seriously, school wide tutoring and teacher intervention during the 5th six week grading period.

To determine the effect a student's score on the pre-test may have had on the TAAS test, a statistical analysis procedure was used (ANCOVA) that more precisely

handles a variable that might affect the dependent variable. The test revealed that the pre-test had a significant effect at the.05 level (F-Ratio 33.842; P=0.000). The effect was much greater than the tutoring variable (0.091).

**Summary of the Quantitative Data**

The quantitative data of this study supported the qualitative data that suggested that students are motivated to attend school to see friends or to participate in something they believed to be important. The tutors missed fewer days while tutoring (sum = 35, m=1.2) than the previous six-week period (sum=62, m=2.1). Statistically significant differences (.05 level) were not found between the control group and the experimental group for the period prior to or during tutoring, nor were statistically significant results found for participants previously identified as at risk. However, the small numbers of absences, the small range of days absent, a 0.00 days absent median for both groups and a short time frame made significance difficult to achieve. The results of the three analysis of variance tests supported the qualitative data that indicated that student motivation for attendance and absences are complex and varied.

The quantitative data suggested that incidents of misbehavior decreased for the tutors during tutoring, but not significantly so. Members of the control group were sent to the office more often than the experimental group before and during tutoring. However, analysis of variance indicated no significant difference between the groups either before or after tutoring. The validity of the results was strongest for the period during tutoring because both groups had a similar range in the number of referrals per participant (maximum = 2 referrals per individual for both groups). With a matched range, members

of the control group were sent ten times to the office and members of the experimental group were sent 6 times. As with attendance, the small values and short time frame made significance difficult to achieve. The quantitative data did not directly support or negate the qualitative data.

Measures of gains in academic performance in math provided the strongest data to support tutoring. The data indicated that the experimental group had a higher mean score in their math class during the tutoring period than the control group (m=76.033. m=70.923) and that they improved their grade somewhat whereas the control group did not (Mean Diff=3.833: Mean Diff = 0.154. In addition, students who participated as tutors and who were identified as at risk due to failure made significant gains in their math class scores during the tutoring period (m=72.167: m=76.033).

Tests of analysis of variance revealed that the difference was significant ($p<.05$) between the control and experimental groups (.035) and between students who were identified as at risk for failure and those who were not (p=. 005). However, the test did not reveal a significant difference or interaction between the two factors. The data revealed that students who were identified as at risk for failure and who participated as a tutor had a higher mean score than students at risk for failure who did not participate in tutoring ($\mu$ = 73.870; $\mu$= 68.118).

As a measure of academic improvement in math, the scores from the pre and post TAAS test revealed a much higher mean difference score for the experimental group than the control group (M Diff= 12.960; M Diff.=0.154). Tutoring seemed to have been most beneficial for the students previously identified as at risk for failure who tutored. Significant differences were found between the tutors and non-tutors who were at risk for

failure (f= 4.101, p=. 05). Significant differences were not found for students in either group who had not been previously identified as at risk for failure (f=. 907; p= .358).

# Chapter Five

## Discussion

This study was an examination of how participation in a peer tutoring service project might affect students identified as at risk for dropping out of high school. The study was based on previous research that has identified the following factors as powerful predictors of students who drop out of school: low socioeconomic status, poor attendance rates, misbehavior in school, and failure in school classes or standardized tests. Previous research on at-risk students has suggested that students who view school as relevant to their lives, view themselves as successful in school, and who have positive feelings of belonging in the school have been identified as more likely to remain in school, despite other factors that put them at risk for dropping out of school. This study was also based on previous research in the service-learning field that has indicated that student participation as a tutor may improve student attendance, misbehavior, and academic performance.

The purpose of this study was to investigate the effects of student participation as a tutor in a service-learning project on each of these risk factors. The following questions were investigated in this study:

1. What effect will participation in a tutoring service learning project have on the attendance rates of students who are identified as at-risk to dropping out of school?

2. What effect on incidents of misbehavior at school will participation in a tutoring service learning project have on students who are identified as at-risk to dropping out of school?
3. What effect on mathematical academic performance will participation in a tutoring service learning project have on students who are identified as at-risk of dropping out of school?
4. What effect will participation in a tutoring service learning project have on students' perceptions of the relevance of school?
5. What effect will participation in a tutoring service learning project have on students' perceptions of their academic performance in school?
6. What effect will participation in a tutoring service learning project have on students' feelings of alienation?

After purposeful sampling to identify low economic status Eighth grade students who were also at risk for dropping out of school due to at least one of the other risk factors described above, students were invited to voluntarily participate in a six- week mathematics peer-tutoring project. During the peer-tutoring project, students who volunteered to tutor (the experimental group) tutored a sixth grade student in mathematics and participated in weekly reflection activities and seminars. The experimental group was compared to students from the sample who did not participate as a tutor (the control group). A variety of measurement tools, both qualitative and quantitative were utilized to measure and compare the effects of tutoring on attendance, misbehavior in school,

academic performance, student perceptions of the relevance of school, student perceptions of how well they were doing in school, and student feelings of alienation.

**What effect on attendance rates will participation in a tutoring service learning project have on students who are identified as at-risk to dropping out of school?**

The control and experimental groups appeared to be similar in attendance patterns prior to tutoring with no significant differences found. Although no significant differences were found in attendance rates between the two groups and for tutors who were previously identified as at risk for failure, the tutors did miss far fewer days while tutoring. These differences while not significant supported the qualitative data that suggested that students want to attend school when they believe they are involved in something important and to see friends, even new found friendships that are created through the tutoring project. Significance was likely difficult to achieve, due to the small numbers of absences (most participants in the control and experimental groups missed 0 or 1 days during the tutoring period), the small range of days absent, a 0.00 days absent median for both groups and a short time frame for the tutoring project.

The qualitative data of this study offers important insights as to why a difference was not found. Students reported missing school for a variety of reasons that were not internally motivated or related to school. For example, many students reported missing school because a family member needed them to care for siblings. In addition, significant differences may have been difficult to achieve due to the district guidelines that were

followed in counting absences. Absences accompanied by a doctor's note, as documented by the attendance secretary, were not counted. However, the researcher noticed several students out of school for several days with notations that parents had called their child in sick but had not submitted a doctor's note. It is possible that the results would have been significant if the sample populations were more affluent. It remains unknown how many of the absences would have been excused had the parents sought a doctor's note.

While the quantitative data does not support a significant difference in attendance rate, the qualitative data clearly indicated that students felt a desire to attend school, if only not to disappoint the student and friend who was waiting for them at school. A longer tutoring period may have supported the differences in mean attendance that were presented in the data.

**What effect on incidents of misbehavior in school will participation in a tutoring service learning project have on students who are identified as at risk to dropping out of school?**

The control group and experimental group appeared to be similar in incidents of misbehavior prior to and during tutoring, with no significant differences found in the number of times a student was referred to the office. Yet the qualitative data clearly indicated that student behavior improved in the classroom. Teachers reported that tutors who had previously been behavior problems in the classroom were assuming leadership positions in class, were remaining on task, and even reprimanding other students to behave.

A closer look at the types of referrals for the tutors shed light on the findings of no significant differences. Computer generated remarks concerning the offense as entered by the discipline principal were examined. During the tutoring period, students who participated as tutors were sent to the office a sum of six times. In all but one case, the misbehavior occurred outside of the classroom, supporting the qualitative data that indicated that both teachers and students believed that while tutoring the tutors behavior *in* the classroom had improved. The offenses, as quoted from the discipline reports, included the following: "disruptive in bus hall-vulgar language"; "{student} hit {another student} in the buss hall after being hit with the janitor's mop"; "{student} was calling another student names in the cafeteria, spreading rumors about her, pulled {other student's} hair and tried to start a fight"; "fighting in the cafeteria", "harassment of another student between classes". The one behavior incident that occurred in the classroom was discussed in the qualitative data. This tutor was reported in the discipline referral to be "playing around in shop...being a danger to himself and others in shop." However, his teachers, especially his math teacher, responded in the interview that they "don't know what has gotten into him. He is doing his work...and he's helping others in class." The teachers reported that they had not assigned him a single detention for misbehavior in class since tutoring began, contrasted to the numerous detentions assigned prior to tutoring. The teachers hypothesized that this student enjoyed helping others and that his behavior had improved since he began tutoring. They reported that at approximately the same time, he began helping others in class.

When the same records were examined for the non-tutors, the offenses occurred more often in the classroom. The non-tutors were referred to the office a total of 11 times

during the tutoring period. obviously more than the tutors but not significantly so when analyzed through an analysis of variance significance test. Offenses as quoted in the disciplinary record included the following: "Refuses to keep shirt tucked in, when {teacher} asked him to leave his classroom and tuck in his shirt, he made a really big deal of it"; "possession of marijuana"; "harassing another student in {teacher's} class; "disruptive behavior in class"; "disruptive and insubordinate in {teacher's} class; "left CMC (a class for Special Education tutoring) and did not return to class"; "insubordination in {teacher's class}; "insubordination and disruptive behavior on school bus"; "prohibited weapon"; "called {teacher} that bow-legged teacher"; "insubordination-yelling in halls, refused to talk to {teacher} in her classroom when she requested".

The non-tutors were referred for some of the same reasons the tutors were: disruptive behavior in the hallways and classrooms, common occurrences in a middle school. However, the non-tutors' misbehavior occurred more often in the classroom and involved confrontations with their teachers rather than students. Coupled with the qualitative data that indicated that several tutors who had previously been behavior problems in the classroom improved their behavior in the classroom during the tutoring period, the data suggested that tutoring had a positive effect on the tutor's behavior in the classroom. This finding seemed especially important since it is misbehavior in the classroom that can have the most damaging effects on student success.

**What effect on mathematical academic performance will participation in a tutoring service project have on students who are identified as at-risk of dropping out of school?**

Both the qualitative and quantitative data of this study suggested that tutoring had positive effects on the tutors' academic performance. Significant differences in math class grades during the tutoring period were found between the control and experimental groups and for students in both groups identified as at risk for failure. When the mean differences in grades were compared, the differences at first appeared small (experimental = 3.833; control = .154). On further analysis, the mean differences and findings of significance appear to be more appreciable. The tutors improved their grades in math from a mean of 70% to 76%. The non-tutors did not raise their mean score above 70%. The minimum passing grade in the district is 70% and frequently teachers will give students a passing grade for a grading period based on some factor other than actual academic performance based on a grading average. For example, a teacher might give a 70% to a student who makes an effort, or to a student who is likable, or to a student who is identified as special education. It appears that the tutors made real progress in their math class, improving their grade almost a full grade.

The qualitative data supported these findings. Tutors reported in written reflection, in reflection seminars, and in interviews with the researcher that they believed they were improving their math skills and that they were improving their math grades. Their teachers corroborated their feelings in interviews with the researcher.

While it is not possible to predict how an increased length of service would affect the tutors' grades in math class, the tutors themselves indicated a desire to continue tutoring because they believed it was helping them. It appears that if students tutored for a lengthier period of time, they would continue to improve their grade average, as long as they believed that tutoring was helping them to improve their skills. Perhaps it is the students' self perception of improvement that is the greatest predictor of student gains in academic grades and that as long as students believe they are improving their skills than lengthier tutoring would continue to benefit their grades. This might be especially true for students who are at risk due to failure.

The data indicated no significant difference in math grades for tutors who were at risk for failure and non-tutors who were at risk for failure. However, the at risk for failure tutors' mean scores were higher than their non-tutor counterparts ($\mu = 73.870$; $\mu = 68.118$) and their grades were passing while the non-tutors were not. Perhaps six weeks of tutoring was simply too short a time period to change these students' perceptions of failure.

Gains in academic performance were also measured with scores on the pre and post tutoring TAAS Math test. The data indicated a significant difference on the Post TAAS Math Test between the control and experimental group and between tutors and non-tutors who were identified as at risk for failure. In addition, with little exception the tutors improved their scores or maintained their scores on the objectives they tutored. However, this difference has to be viewed cautiously for a number of reasons.

While the two groups appeared to be similar when an analysis of variance was conducted on their Pre-TAAS Math scores and these scores were a strong predictor of the

post-TAAS Math test score, many variables that could not be controlled in this study may have had an effect on the finding of significant differences. Some of the participants in the study also attended before or after school TAAS math tutoring with a math teacher. The researcher believed that it would be unethical to request or require participants not to participate in this form of tutoring. Nor was it likely that the administration of the school would agree to such a request. Perhaps the students who volunteered to participate in the tutoring project did attend such tutoring more often than the non-tutors.

A second variable that warranted caution when considering the findings of significance was the internal motivation of the participants to improve their TAAS Math score. While the control and experimental groups were similar in ability according to the pre-TAAS Math test, it is reasonable to question whether those who volunteered to tutor were more motivated to improve their TAAS grades. While the qualitative data did not suggest that the non-tutors cared less about TAAS, the tutors were willing to tutor based on encouragement by teachers that it would benefit their TAAS scores.

The pre and post multiplication test data for the basic skills tutors suggested that tutoring did not have the desired effect on these tutors' skills. A significant difference was not found between the pre and post multiplication test for the tutors. In fact, while the minimum score increased indicating some improvement, many tutors did not perform as well on the post multiplication test. There are several possible explanations for this finding.

The nature of the tutoring might be one explanation for these finding. For the basic skills tutors, the act of tutoring with flashcards was less interactive and more drill oriented. The tutors likely did not spend much time explaining to their students why an

answer was wrong, because of the rote nature of learning the multiplication table. While these tutors were instructed to concentrate on the problem and the answer on the card as it faced them, distraction or boredom may have diminished their full attention.

A second possible explanation for the findings is that these tutors knew they were behind in their mathematical skills and due to previous failure experienced a great deal of stress with the timed test of their abilities. As a group, these tutors often spoke passionately about their past failures and desire to improve. The timed posttest may simply have put them under more stress than their non-tutor counterparts. Perhaps the non-tutors did better on the posttest because they did not feel the pressure of proving that they had improved their skills.

A final possible explanation for the findings is the measurement tool itself. The validity of the tool may have been compromised due to researcher instructions. During both the pre and posttest, the researcher told students simply to answer as many questions as they could in the allotted time. Two similar, but not identical, tests were administered. While grading the tests, the researcher observed that many participants seemed to answer the questions in a purposeful manner, searching the page for easy problems with multiples such as 0, 1, and 2. Consequently, their answers were scattered about the page and the students may have wasted valuable time searching the page for these easy problems. The results may have been different if the researcher had instructed the students to answer the questions line by line without skipping any problems.

Tutoring appeared to have a positive effect on both groups of tutors' academic performance in the classroom and on the TAAS tutors' standardized tests. During the reflective seminars, the tutors often shared success stories of improving their grades.

Their teachers shared stories during interviews of tutors who were participating in class for the first time and improving their grades. While the TAAS test results should be viewed with caution and the pre and post multiplication test for basic tutors appeared to indicate no improvement, the qualitative data and math grade data gives ample evidence that tutoring had a positive effect on the academic performance of the tutors.

**What effect will participation in a tutoring service learning project have on students' perceptions of the relevance of school?**

Because previous research has indicated that students who view school as relevant to their lives are more likely to remain in school than students who do not, how these at-risk student viewed school was especially important. How did these students view school and how did tutoring affect that view? The results of the qualitative data were surprising.

Teachers often label students who are at risk for dropping out of school as students who simply do not care about learning or graduating from high school. The thinking on the part of some teachers seems to be "They don't care. I can't reach them." The qualitative data of this study revealed a much different picture of students identified as at risk for failure. With few exceptions, the tutors in this study viewed school and the schooling process in mostly positive terms.

The data of this study indicated that at-risk students believe school is important and want to graduate from high school. In Randy's words, "I don't want to be some person on the street who doesn't know anything because they dropped out of school." The data also indicated that at-risk students trusted their teachers to help them to

graduate. They believed their teachers and their school would help them to graduate. Some students, even though they viewed school as relevant and graduating from high school as important, disliked school or were unsure if they would graduate.

The data indicated that many of the tutors disliked the traditional classroom setting. They thought classes were boring. Others indicated that while they wanted to graduate, they were afraid they simply did not have the abilities to do so. Tutoring seemed to have the most positive effect on these students. In their post-interviews, tutors reported that they enjoyed tutoring, because it helped them to learn the things they needed to know and it was fun. The tutors who viewed school as important but boring (the ambivalent students teachers are apt to give a negative label) reported enjoying tutoring because it gave them a fun way to learn.

Tutoring may have had the most positive effects on students who viewed school and graduation as important, but who were afraid they would not be able to graduate. In emotional pre-interviews, a few tutors described a genuine fear that they would never graduate because they did not understand the math required on the state's TAAS test. They knew they would have to pass the test in order to graduate and had experienced failure in math class and on previous exams. After tutoring, these students all reported feeling more capable and more confident in their ability to graduate. This was true even of the Basic Skills tutors whose scores on the multiplication post-test did not reveal significant improvement. While still fearful that they would not graduate, they indicated in their post-interviews that they would seek opportunities in high school to continue tutoring math as a means of helping them to graduate.

Tutoring did not change at- risk students' perceptions of the relevancy of schooling. They already believed schooling and graduation from high school was important. Tutoring provided them an alternative means of learning they found more enjoyable than the traditional classroom setting and a sense of self-confidence in their abilities. These two effects of tutoring may be the most important benefits of tutoring, especially for marginal at-risk students who need alternative methods of instruction in order to meet their goal of high school graduation.

**What effect will participation in a tutoring service learning project have on students' perceptions of how well they are doing in school?**

The qualitative data of this study indicated that after tutoring, students believed they were doing better in math. Their teachers confirmed their feelings and indicated that they were doing better in other subject areas as well. The data indicated several explanatory reasons for the change in tutors' self perception of how well they were doing in school.

For many tutors, the tutoring experience gave them a cognitive jolt of reality. Sitting face to face with a student two grade levels below them, they realized there were things they did not know about math that they should. Several tutors reported this initial realization in terms of initial embarrassment and then a determination to improve their skills and be a good tutor. Nearly all of the tutors indicated that tutoring became mutual help sessions between tutor and student. The tutors reported that it was easier to admit

they did not know something and to allow their student to help them in the tutoring sessions than in the traditional classroom setting.

The qualitative data indicated in the interviews with the tutors and their students that tutoring seemed to have a positive effect on the tutor's performance in the classroom. According to their teachers, some of the tutors turned in homework for the first time all school year while tutoring. Many began participating in class volunteering to answer questions or to help another student. The data suggested that tutoring gave these students the confidence they needed to begin participating in a more threatening large class environment.

**What effect will participation in a tutoring service learning project have on students' feelings of alienation?**

The qualitative data of this study revealed a real need for schools to reevaluate their policies toward participation in extra-curricular activities. Nearly all of the tutors in this study were alienated from the school. They did not participate in a single activity or organization, because they were failing at least one class and were thus ineligible to participate. While they reported feeling mostly happy with their circle of friends, they also indicated a great desire to participate in school activities. The reasoning behind the "no pass, no play" rule that excludes so many students from participation in the school community rests on the belief that students will improve their grades in order to participate in school activities. Yet the findings of this research supports Alpert and Dunham's research. Many of our students feel marginalized and isolated in school

because academic failure alienates them from the school community. When given an opportunity to participate in the school community, despite their failure in class work, feelings of alienation from the school decrease and their grades improve. Schools simply must give all students an opportunity to participate meaningfully in the school community.

The tutors in this study were genuinely excited to be a part of something! Despite the demands of participation (early morning tutoring sessions, after school seminars, reflection papers), they remained excited about being involved in something and reported a great desire to tutor again. Participation was not in any way dependent on maintaining passing grades. Yet both the qualitative and quantitative data indicated that tutoring improved their grades.

At-risk students need reasons to stay in school. The results of this study suggested that participation as a tutor made them feel important and wanted in the school community. Opportunities to participate as a tutor may be especially beneficial at the middle school level when many students experience a heightened sense of alienation.

**Suggestions for Educators**

The researcher encourages teachers and administrators to implement peer tutoring in their schools as a means of meeting the needs of students identified as at-risk. The following suggestions are offered to assist those efforts.

- Sell your teachers on the potential benefits of tutoring first. A tutoring program will require a teacher to spend some initial time preparing materials and an on-going commitment to participation in reflection seminars.
- Start with small groups. At the middle school level, this could easily be accomplished within individual teams or advisories.
- Match the tutoring materials with the skills of the tutors. Materials should be challenging but within the ability level of the tutors. Many states produce tutorial materials for state standardized tests. These materials were quite useful in this study.
- Consider seeking district money or grants to fund a program that would provide bus transportation home for an after-school tutoring program. Tutoring requires time and many parents of at-risk students are unable to provide transportation home from school.
- Commit to tutoring on a long-term basis such as a school year. While evidence of positive effects was found in this study's short-term tutoring project, the effects may be more significant on attendance and behavior if the tutoring period is longer. Students at risk for failure likely will benefit most from a long term project as they simply may need more time to gain confidence in their abilities.
- Offer participation as a tutor without grades as an eligibility requirement. You will see an improvement in grades.

- Celebrate the efforts of tutors in the school and local community. The Maryland Student Service Guidelines for Service Learning cited in the bibliography offers a variety of unique ideas for celebrating service.
- Set aside time in class for tutoring.
- Instead of requiring students to attend tutoring with the teacher, offer peer tutoring as an alternative.
- Give students plenty of opportunities to reflect on their service in both written and oral form.

**Suggestions for further research**

While the results of this study indicate that peer tutoring can have positive results on the academic performance of tutors who are at risk for dropping out of school, the data is inconclusive concerning its effects on attendance and behavior. Additional research is needed in which at-risk students participate in a long-term project to evaluate how tutoring during a longer period of time might affect tutors' attendance and behavior in school.

In addition, additional research that focuses on peer tutoring as an alternative to other forms of punishment such as suspension might prove useful. Would at risk students who were given the alternative of tutoring instead of some form of punishment such as suspension still benefit from peer tutoring?

While this sample represents at-risk students, it cannot be considered to represent at-risk students in all of our schools. Additional research might focus on at-risk students

in an urban or rural population. Do urban or rural at-risk students benefit from peer-tutoring in the same manner as these suburban at-risk students?

This research provided a glimpse of the fear behind many students identified as at risk due to failure. While these students wanted to graduate from high school, they were afraid they would not be able to do so. Additional research, perhaps in the form of case studies or longitudinal studies, might focus on how fear affects the academic performance of students at risk for failure and how peer tutoring can be designed to alleviate these feelings of fear.

To conclude this study, it might be appropriate to quote Lindsey, one of the tutors who participated in the study. Regarding her experience in the program, she said:

> I feel like I'm making a difference. It has helped me to learn because it's up to me whether she {my student} learns and to help her to learn. It makes me want to try this problem that I think in my head I'll never get. It has made me realize that I need to work harder for what I want to do in my life.

Peer tutoring programs may be a way to help at-risk students improve their attitude toward school and gain some degree of academic success.

## References


Alpert, Geoffrey and R. Dunham. (1986). Keeping academically marginal youths in school: A prediction model. Youth and Society, 17, 346-361.

Bennett, K.P. & Le Compte, M. (1990). The way schools work: A sociological analysis of education. New York: Longman.

Blackorby, J., Edgar, E., & Kortering, L. (1991). A third of our youth? A look at the problem of high school dropout among students with mild handicaps. The Journal of Special Education, 25, 102-113.

Bloom, A. (1968). The republic of Plato (2nd ed.). New York: Basic Books.

Blythe, D.A. & Scales, P. (1996). The effects of service-learning on youth: What we know. Unpublished manuscript.

Bourdieu, P. and Passeron, J. (1977). Reproduction in education, society and culture. Beverly Hills: Sage.

Boyer, E. (1983). High school. New York: Harper & Row.

Bruce, L. (1990). Young women of Alaska speak out. Anchorage, AL.: Alaska Women's Commission. (Eric Document Reproduction Service No. ED 323474).

Calabrese, R.L. & Cochran, J.T. (1990). The relationship of alienation to cheating among a sample of American adolescents. Journal of Research and Development in Education, 23, 65-72.

Calabrese, R.L. & Schumer, H. (1986). The effects of service activities on adolescent alienation. Adolescence, 21, 675-87.

Carnegie Task Force on Education of Young Adolescents. (1989). Turning points: Preparing American youth for the 21st century. New York: Carnegie Council on Adolescent Development of the Carnegie Corporation.

Cohen, P.A., Kulik, J.A., & Kulik, C-L.C. (1982). Educational outcomes of tutoring: A meta-analysis of findings. American Educational Research Journal, 19, 237-248.

Coladarci, T. (1983). High school dropouts among Native Americans. Journal of American Indian Education, 23, 15-22.

Coleman, J.S. (1989). Social capital in the creation of human capital (special issue). American Journal of Sociology, 94.

Conrad, D. & Hedin, D. (1982). The impact of experiential education on adolescent development. Child and Youth Services, 4, 57-76.

Dewey, J. (1944). Democracy and education. New York: Free Press. (Original work published 1916)

Dewey, J. (1963). Experience and education. New York: Collier Books. (Original work published 1938)

Dewey, J. (1990). The school and society: The child and curriculum. London: University of Chicago Press. (Original works published 1900/1902)

Downs, W.R., & Rose, S.R. (1991). The relationship of adolescent peer groups to the incidence of psychosocial problems. Adolescence, 26, 473-492.

Ekstrom, R.B., Goertz, M.E., Pollack, J.M., & Rock, D.A. (1986). Who drops out of high school and why? Findings from a National Study. Teachers College Record, 87, 356-373.

Exum, H. (1978). Cross age and peer teaching: A deliberate psychological education program for junior college students. Unpublished doctoral dissertation, University of Minnesota.

Fehrmann, P.G., Keith, T.Z., & Reimers, T.M. (1987). Home influence on school learning: Direct and indirect effects of parental involvement on high school grades. Journal of Educational Research, 80, 330-337.

Follman, J. & Muldoon, K. (1997). Florida learn & serve 1995-1996: What were the outcomes? NASSP Bulletin 81 (591), 29-36.

Giles, D., Porter Honnet, E., & Migliore, S. (Eds). (1991). Research agenda for combining service and learning in the 1990s. Raleigh, NC: National Studies for Internships and Experiential Education.

Goodlad, J. (1984). A place called school. New York: McGraw-Hill.

Guolin, L. (1988). Importance of updating educational thinking as seen from the problem of junior high school dropouts in Guangshou City districts. Chinese Education: A Journal of Translations, 21, 80-87.

Hamilton, S.F. & Fenzel, L.M. (1988). The impact of volunteer experience on adolescent social development: Evidence of program effects. Journal of Adolescent Research (3)1, 65-80.

Hamilton, S. & R. Zeldin. (1987). Learning civics in community. Curriculum Inquiry, 17, 42-47.

Hedin, D. (1991). School-based community service: What we know from research and theory. Phil Delta Kappan, 10, 743-49.

Hedin, D. (1987). Students as teachers: A tool for improving school climate and productivity. Social Policy, 17, 42-47.

Houser, V. (1974). Effects of student-aide experience on tutors' self-concept and reading skills. Unpublished doctoral dissertation, Brigham Young University.

Jenkins, P.H. (1995). School delinquency and school commitment. Sociology of Education, 68, 221-239.

Jensen, P. (1994). Improving social behavior of fifth through eighth grade students through curriculum intervention and teaching practices. Master's Research Project, Saint Xavier University. (ERIC Document No. 403979).

Johnson Foundation. (1989). Wingspread special report: Principles of good practice for combining service and learning. Racine, WI: Author.

Johnson, E. (1993). The relationship of self-blame and responsibility attributions and motivations, for schoolwork and conduct, to self-worth and self-perceptions. Paper presented at the Biennial Meeting of the Society for Research in Child Development, New Orleans, LA. (ERIC Document Reproduction Service No. ED357850)

Kaplan, D. (Jan.-Feb., 1994). Structural relations model of self-rejection, disposition to deviance, and academic failure. Journal of Educational Research, 87, 166-173.

Kraft, R.J. (1996). Service learning: An introduction to its theory, practice, and effects. Education and Urban Society, 28(2), 131-159.

Kraft, R.J., Goldwassser, M., Swadener, M., & Timmons, M. (1993). First annual report: Preliminary evaluation: Service-learning Colorado. Denver: Colorado Department of Education.

Lichtenstein, S. & Zantal-Wiener, K. (1988). Special education dropouts. Reston, VA.: ERIC Clearinghouse on Handicapped and Gifted Children.

Luchs, K.P. (1981). Selected changes in urban high school students after participation in community-based learning and service activities. (Doctoral dissertation, University of Maryland).

Markus, G., Howard, J., & King, D. (1993). Integrating community service and classroom instruction enhances learning: Results from an experiment. Educational Evaluation and Policy Analysis, 15 (4), 410-419.

Maryland State Department of Education. (1992). The courage to care: The strength to serve. Draft instructional framework in service-learning for middle schools. Baltimore: Maryland State Department of Education.

Martin, W. (1977). A participant observation study of an outdoor education experiential curriculum experiment in a public secondary school. Unpublished doctoral dissertation. Michigan State University.

Martin, J. (1992). The schoolhome: Rethinking schools for changing families. Cambridge: Harvard University Press.

McCabe, Patrick P., Smergut, P., & Margolis, H. (1992). The attitude toward school of secondary special education students with high, moderate, and low attendance rates. Educational Resources Information Center, ED 371 149, Springfield, VA.

Miller, J.V. (1987). Some current issues in adult, career, and vocational education. Columbus, Ohio: Eric Clearinghouse on Adult, Career, and Vocational Education.

National Commission on Excellence in Education (1983). A nation at risk: The imperative of educational reform. Washington, D.C: Government Printing Office.

Naylor, M. (1987). Reducing the dropout rate through career and vocational education. Columbus, Ohio. Eric Clearinghouse on Adult, Career, and Vocational Education.

Newmann, F.M. and Rutter, R.A. (1983). The effects of high school community service programs on students' social development. Madison, WI: Wisconsin Center for Education Research, University of Wisconsin.

Newman, F., & Rutter, R. (1986). A profile of high school community service programs. Educational Leadership, 43(4), 65-71.

Noddings, Nel. (1992). The challenge to care in schools:An alternative approach to education. New York: Teachers College Press.

Okolo,C. & Sitlington, P. (1986). The role of special education on LD adolescents' transition from school to work. Learning Disability Quarterly, 9, 141-155.

Parsons, C. (1996). Permanent exclusions from schools in England in the 1990s: Trends, Causes and Responses. Children and Society, 10, 177-186.

Polk, K. (1984). The new marginal youth. Crime and Delinquency, 30:3, 462-480.

Roquemore, B.C. (1991). The academic motivations of students who are discipline problems. Paper presented at the Annual Meeting of the American Association of School Administrators, New Orleans, LA. (ERIC Document Reproduction Service No. ED339081)

Rumberger, R.W. (1987). High school dropouts: A review of issues and evidence. Review of Educational Research, 57, 101-121.

Rutter, R. & Newmann, F.M. (October, 1989). The potential of community service to enhance civic responsibility. Social Education, 371-74.

Saner, H., & Ellickson, P. (Aug., 1996). Concurrent risk factors for adolescent violence. Journal of Adolescent Health, 19, 94-103.

Shumer, R. (1994). Community-based learning: Humanizing education. Journal of Adolescence, 17: 357-367.

Shumer, R., Berkas, T., & Murphy, N. (1993). Describing service learning: A delphi study. St. Paul: University of Minnesota, Department of Vocational and Technical Education.

Shumer, R. (1990). Community-based learning: An evaluation of a drop out prevention program. (Report submitted to the City of Las Angeles Community Development Department). Los Angeles: UCLA, Field Studies Department.

Stanton, T. (1987). Service-Learning: Groping toward a definition. In J.C. Kendall & Associates (Eds.), Combining Service and Learning. (Vol 1, pp. 65-67). Raleigh, NC: National Society for Internships and Experiential Education.

Thornberry, T., Moore,M. and R.L. Christian. (1985). The effect of dropping out of high school on subsequent criminal behavior. Criminology, 23:1, 3-18.

Velez, W. (1989). High school attrition among hispanic and non-hispanic white youths. Sociology of Education, 62: 1, 19-33.

Waterman, A. (1993). Conducting research on reflective activities in service learning. In H.C. Silcox, Ed. A how to guide to reflection. Philadelphia: Brighton Press.

Wehlage, G.G., & Rutter, R.A. (1986). Dropping out: How much do schools contribute to the problem? Teachers College Record, 87, 374-392.

Wood, C. (1991). Are students and school personnel learning to be helpless-oriented or resourceful-oriented? Journal of Educational and Psychological Consultation, 2 (1), 15-48.

## Appendix A

### Wingspread Special Report Program Model for Effective Service Learning

#### Ten Principles of Effective Service Learning Programs

1. Engages people in responsible and challenging actions for the common good.
2. Provides structured opportunities for people to reflect critically on their service experience.
3. Articulates clear service and learning goals for everyone involved.
4. Allows for those with needs to define those needs.
5. Clarifies the responsibilities of each person and organization involved.
6. Matches service providers and service needs through a process that recognizes changing circumstance.
7. Expects genuine, active, and sustained organizational commitment.
8. Includes training, supervision, monitoring, support, recognition, and evaluation to meet service and learning goals.
9. Insures that the time commitment for service and learning is flexible, appropriate, and in the best interests of all involved.
10. Is committed to program participation by and with diverse populations.

(Johnson Foundation, 1989, pp. 2-3)

## Appendix B

## Interview Guide

The following interview guide was used for interviews with tutors before and after the tutoring service project.

Prompting Words: Tell me more. Can you explain that? Describe that for me.

Thank you for agreeing to be interviewed. I need to remind you that all of your responses, everything you say, will be kept confidential, not to be shared with anyone except Mrs. Nazzal. The information you share with me today will be used only for the purposes of the research-our tutoring project. Do I have your permission to record our interview?

State your full name and spell both for me. (Check the quality of recording).

1. How do you feel about school?
2. How do you feel about your classes?
3. How do you feel about the things you are studying in school, in terms of helping you to graduate from high school?
4. How well does this school help you to graduate from high school?
5. How important do you think graduating from high school will be to get the kind of job you would like as an adult?

6. How important do you feel the things you are now studying in school are to the quality of the rest of your life?
7. How well do you think you are doing in school?
8. What is it that makes you want to come to school on days when you really do not feel like attending school?
9. What is it that makes you want to stay home from school, on days when you really do not feel like attending school?
10. What do your parents expect from you, in terms of attending school daily, grades, and behavior at school?
11. How would you describe yourself, in terms of popularity, at this school?
12. How would you describe the friendships you have at this school?
13. Describe the types of activities that you are involved with at school.

Thank you for agreeing to let me interview you. I will need to interview you one more time in six weeks. Would you please state your home phone number, in the event that I need to ask you any questions about your interview?

## Appendix C

### Maryland Student Service Alliance Framework for Effective Service

School-based service learning programs have two equally important and inseparable purposes: to perform useful service and to learn from the experience of serving. Programs that accomplish these purposes explicitly link service and learning. Effective student service-learning programs use three critical elements: preparation, action, and reflection.

Preparation

Preparation involves four steps: identifying and analyzing issues, choosing a project, learning skills needed to perform service, and planning the service project.

Action

Perform the service as planned. Make adjustments to the initial plan as new information is gained and new circumstances are encountered.

Reflection

Reflection encourages students to learn from their service experience. Reflection is most effective when regularly scheduled during the course of the service project, and as soon as possible after students perform their service.

Reflection should be a balance of individual and group activities. Individual reflection enables students to analyze the personal impact of their experience. Journals-whether in written, tape-recorded, or pictorial form—help students think about their service. Asking students to write or talk about their impressions of people, best and worst experiences, and opinions of an agency provides a format for reflection. Students could keep a scrapbook of their service activities.

Another method of individual reflection is face-to-face meetings between a student and the teacher or agency supervisor. The meetings would give students a chance to voice their opinions about their service experience. Teachers and supervisors could assess students' performance and modify the project if needed.

Group reflection activities are important for students to learn from each other and work together to solve problems. Students can discuss and share their experiences, learn more about the people they are serving, and learn more about the issues pertaining to their project.

Celebrate Service

Students should know their community recognizes and appreciates their efforts. Effective service-learning takes time to celebrate students' contributions Celebration ties in nicely with final reflection, too. It's a fun way for students to think about how they worked with each other and to commend each other on their accomplishments.

(Maryland State Department of Education, 1992, pp. 10-15, used with permission)

# Appendix D

## Informed Consent Form-Student

For research conducted under the auspices of the University of Oklahoma –"Peer Tutoring Research Study"

Dear Student,

I am pleased to inform you that you have been selected to participate in an exciting new program. Youth Helping Youth or YHY. YHY is being introduced at your school, as part of a research study I am conducting as a university student. The goals of YHY include, to increase student self-esteem, to increase student confidence in their math skills, to improve student attitude toward school, to improve student math skills, grades in math, and/or scores on the Texas Assessment of Academic Skills Test (TAAS) math test, to provide students an opportunity to help younger students.

During the next six weeks, students selected to participate in YHY will be tutoring Sixth grade students in math. If you agree to participate, you will be matched with a Sixth grade students who has requested help. You will succeed as a tutor, even if your math skills are low, because you will be matched with a student who you can help. More importantly, previous tutors and research tells us that ***Tutoring is the Best Way to Learn***

Participation in the program is voluntary, because you will gain more from the program if you choose to participate. To get the most out of the experience, you will be required to tutor three hours a week. You will tutor during school hours. In order to do so, you will need to attend 0 period each day from 8:00 a.m. to 8:25, a class period already established by the school. You will also be released from your history class one day a week to tutor. All tutoring sessions will be conducted in a classroom, with a certified classroom teacher present to encourage and help. In addition, I will ask you to volunteer to participate in two interviews. Each interview will last approximately 45 minutes, and will be conducted during school hours. All information collected during the study will remain confidential.

**Tutoring will be fun, and your efforts will be rewarded!** We are planning celebration "get togethers" for the tutors and their students every week. It will be an enjoyable time for everyone, and you will have the opportunity to discuss what you are learning and to be rewarded for your efforts. **Get your**

## Appendix D Continued

## Informed Consent Form-Student

**parents' your permission to participate!** While participation in Youth Helping Youth is voluntary, it does require that you get your parent's permission. All we need is for you and your parent to sign the permission form below and return it to me.

**If you have any questions about participation in the research study, please come by my room (Room 501).** In addition, you may contact the Office of Research Administration at the University of Oklahoma if you have questions concerning the rights of the research participants (405-325-4757). Attached you will find letters of permission from your history teacher to leave class in order to tutor and from the school principal for the collection of needed research materials.

Respectfully,

Allison Nazzal-Youth Helping Youth Coordinator, A.C. New Middle School

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I wish to participate in the YHY Tutoring Research Study, as a tutor. I understand that I will be required to tutor three hours each week during school hours.

_____ _____

Student Signature Date

## Appendix D Continued

## Informed Consent Form-Parental

For research conducted under the auspices of the University of Oklahoma –"Peer Tutoring Research Study"

Dear Parent or Guardian,

I am pleased to inform you that your child has been selected to participate in an exciting new program, Youth Helping Youth or YHY. YHY is being introduced at your child's school, as part of a research study I am conducting as a university student. The goals of YHY include: to increase student self-esteem; to increase student confidence in their math skills; to improve student attitude toward school; to improve student math skills, grades in math, and/or scores on the Texas Assessment of Academic Skills Test (TAAS) math test; to provide students an opportunity to help younger students.

During the next six weeks, students selected to participate in YHY will be tutoring Sixth grade students in math. Your child will be matched with a Sixth grade students who has requested help. Your child will succeed as a tutor, even if his or her math skills are low, because they will be matched with a student whom they can help. More importantly, previous tutors and research tells us that ***Tutoring is the Best Way to Learn!*** Your child will very likely improve his or her math skills, and help another student improve their skills.

Participation in the program is voluntary, because students gain more from the program if they choose to participate. To get the most out of the experience, your child will be required to tutor three hours a week. He or she will tutor during school hours. In order to do so, your child will need to attend 0 period each day from 8:00 a.m. to 8:25, a class period already established by the school. He or she will also be released from history class one day a week to tutor. All tutoring sessions will be conducted in a classroom, with a certified classroom teacher present to encourage and help. In addition, I will ask your child to volunteer to participate in two interviews. Each interview will last approximately 45 minutes, and will be conducted during school hours. All information collected during the study will remain confidential.

## Appendix D Continued

## Informed Consent Form-Parental

**Tutoring will be fun, and your child's efforts will be rewarded!** We are planning celebration "get togethers" for the tutors and their students every week. **Please encourage your child to participate!** Participating as a tutor could help your child improve his or her math TAAS scores. **Give your child permission to participate!** While participation in Youth Helping Youth is voluntary for your child, it does require your permission. All we need is for you to sign the permission form below and have your son/daughter return it to me.

**If you have any questions about your child's participation in the research study, please call!** I would be happy to share more information with you about the benefits of tutoring for your child and how the program will work. The school number is 972-557-5585. In addition, you may contact the Office of Research Administration at the University of Oklahoma if you have questions concerning the rights of the research participants (405-325-4757). Attached you will find letters of permission from your child's history teacher to leave class in order to tutor and from the school principal for the collection of needed research materials.

Respectfully,

Allison Nazzal-Youth Helping Youth Coordinator, A.C. New Middle School

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I give my son/daughter _____ permission to participate in the Youth Helping Youth tutoring project. I understand that my son or daughter will be required to tutor 3 hours each week during school hours.

_____ _____

Parent/Guardian Signature Date

## Appendix E

### Daily Oral Reflection for Tutors and their Students

Each time you tutor. spend at least 3 minutes discussing any or all of the following:

1. What did we accomplish today?
2. What did I do well as a tutor/as a student?
3. What can I do to be a better tutor? (Note-discuss specific things.)
4. What can I do to improve my learning (or to be a better student?)
5. Give each other 3 specific compliments about each other's tutoring skills/efforts as a student.
6. How are you feeling about your math skills?

## Appendix F

## Weekly Journal Reflections

Written Reflection Week 1

Write as much as you can about these topics. Be as descriptive as you possibly can. Remember, no one will read this except me, and I will not share this information with anyone. Be honest in your reflection.

1. I wanted to tutor because...
2. When I first began tutoring, I felt...
3. After meeting my student and tutoring a little, I feel...
4. About my math skills, I feel...

Written Reflection-Week 2

1. The thing(s) about tutoring that has surprised me...
2. Teaching my student has made me realize...
3. The most difficult/easiest thing about tutoring is...

Written Reflection-Week 3

1. Describe your friendships at school...
2. Describe the activities that you are involved with at school. (extra-curricular, activities, clubs, etc.)
3. How willing would you be to tutor a student or do some other service project, if someone asked you to do it again?
4. How well are you doing in school?

5. How important do you think school is (the things you are studying) to graduating and getting the kind of job you want after high school?
6. Has tutoring changed your ideas about number 5?
7. How well are you doing in your math class? How well were you doing in math class before you began tutoring?
8. How important did you think math class was before you began tutoring? How important do you think it is now?

Written Reflection-Week 4

1. When I first began tutoring math in YHY, math...
2. After tutoring math in YHY now for a few weeks, math...
3. When I began tutoring, I felt this way about school...
4. After tutoring math in YHY now for a few weeks, I feel this way about school...
5. Helping my student in math has made me feel...

Written Reflection-Week 5

Open Reflection. Think about your tutoring experience. Describe how you feel about your experiences.

Written Reflection-Week 6

1. I have helped my student...
2. Helping my student has made me a better person because...
3. Tutoring has had the following effects on me...
4. If I could change something about tutoring, it would be...

# Appendix G-TAAS Scores Table

**Explanation: Fractions indicate number of TAAS questions answered correctly over the number of TAAS questions for each objective. 3/4 or 6/8 required to pass an objective.**

| Tutor | Obj. 1 Pre | Obj. 1 Post | Obj. 2 Pre | Obj. 2 Post | Obj. 3 Pre | Obj. 3 Post | Obj. 4 Pre | Obj. 4 Post | Obj. 5 Pre | Obj. 5 Post | Obj. 6 Pre | Obj. 6 Post | Obj. 7 Pre | Obj. 7 Post | Obj. 8 Pre | Obj. 8 Post | Obj. 9 Pre | Obj. 9 Post | Obj. 10 Pre | Obj. 10 Post | Obj. 11 Pre | Obj. 11 Post | Obj. 12 Pre | Obj. 12 Post | Obj. 13 Pre | Obj. 13 Post |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | 2/4 | 4/4 | | | | | | | | |
| 2 | 4/4 | 2/4 | | | | | | | | | | | | | | | | | 3/4 | 4/4 | | | 1/8 | 6/8 | 3/4 | 3/4 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 4/4 | 4/4 | | | 3/4 | 4/4 | 3/4 | 4/4 | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | 4/4 | 4/4 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | 2/4 | 4/4 | 4/4 | 3/4 | 2/4 | 2/4 | 3/4 | 2/4 | 2/4 | 2/4 | 4/4 | 3/4 | 6/8 | 3/8 | | | | |
| 7 | | | | | | | • | 4/4 | • | 2/4 | | | | | | | | | • | 3/4 | | | | | • | 4/4 |
| 8 | | | 3/4 | 3/4 | | | 4/4 | 4/4 | 1/4 | 3/4 | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | 3/4 | 3/4 | | | | | 6/8 | 6/8 | | | | |
| 10 | | | | | | | | | | | • | 4/4 | • | 3/4 | • | 4/4 | • | 4/4 | | | • | 5/8 | | | | |
| 11 | | | | | | | | | | | 0/4 | 4/4 | 0/4 | 4/4 | 1/4 | 3/4 | 1/4 | 3/4 | 1/4 | 1/4 | | | | | | |
| 12 | 1/4 | 2/4 | 3/4 | 3/4 | | | | | | | | | | | | | | | • | | | | | | | |
| 13 | 4/4 | 4/4 | 4/4 | 4/4 | 4/4 | 4/4 | | | | | | | | | | | | | | | | | | | | |
| 14 | 4/4 | 3/4 | 2/4 | 3/4 | 2/4 | 3/4 | | | | | | | | | | | 3/4 | 3/4 | | | | | | | | |
| 15 | 4/4 | 2/4 | 3/4 | 4/4 | | | 4/4 | 4/4 | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | 1/4 | 3/4 | 4/4 | 4/4 | 2/4 | 3/4 | 1/4 | 4/4 | 2/4 | 4/4 | 3/4 | 3/4 | | | • | 2/8 | | | | |
| 17 | | | | | 4/4 | 3/4 | | | | | 3/4 | 3/4 | 3/4 | 4/4 | 2/4 | 4/4 | 2/4 | 3/4 | | | 6/8 | 7/8 | | | 4/4 | 4/4 |

**Appendix H**
**Multiplication Skills Pre-Test for Basic Skills Tutors**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4 ×4 | 8 ×3 | 0 ×3 | 8 ×2 | 9 ×9 | 4 ×6 | 7 ×2 | 3 ×7 | 5 ×4 | 6 ×5 |
| 5 ×8 | 4 ×1 | 7 ×9 | 8 ×5 | 3 ×3 | 3 ×4 | 8 ×3 | 5 ×0 | 8 ×4 | 8 ×9 |
| 4 ×5 | 6 ×8 | 4 ×3 | 8 ×8 | 2 ×4 | 9 ×6 | 3 ×5 | 9 ×2 | 3 ×2 | 2 ×3 |
| 7 ×8 | 7 ×7 | 9 ×5 | 2 ×0 | 5 ×9 | 5 ×2 | 6 ×3 | 4 ×2 | 5 ×5 | 7 ×4 |
| 0 ×6 | 1 ×2 | 5 ×3 | 2 ×5 | 6 ×2 | 9 ×4 | 7 ×5 | 0 ×4 | 3 ×1 | 2 ×2 |

**Appendix H Continued**
**Muitiplication Skills Post-Test for Basic Skills Tutors**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 9 ×2 | 6 ×3 | 5 ×8 | 2 ×3 | 7 ×7 | 0 ×9 | 3 ×7 | 9 ×4 | 6 ×8 | 7 ×3 |
| 3 ×8 | 9 ×3 | 7 ×1 | 9 ×8 | 6 ×7 | 5 ×0 | 5 ×3 | 6 ×9 | 6 ×6 | 0 ×7 |
| 3 ×3 | 3 ×9 | 0 ×8 | 6 ×2 | 8 ×4 | 2 ×8 | 4 ×4 | 9 ×5 | 4 ×7 | 8 ×8 |
| 6 ×0 | 1 ×8 | 8 ×3 | 7 ×9 | 7 ×4 | 8 ×7 | 2 ×7 | 3 ×6 | 8 ×6 | 5 ×7 |
| 9 ×9 | 0 ×3 | 9 ×7 | 4 ×6 | 9 ×6 | 7 ×8 | 4 ×3 | 8 ×9 | 7 ×6 | 9 ×4 |