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Impact of School-Based Mentoring

By

Joel Beyenhof

A DISSERTATION

Presented to the Faculty of

The Graduate College of the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Doctor of Education

Major: Educational Administration

Under the Supervision of Dr. Jeanne L. Surface, Chair

Omaha, NE

April 2015

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Abstract

IMPACT OF SCHOOL-BASED MENTORING

Joel Beyenhof, M.Ed., Ed.D.

University of Nebraska, 2015

Advisor: Dr. Jeanne L. Surface, Chair

The purpose of this study was to analyze and compare the impact of involvement of students in TeamMates mentoring program compared to a matched sampling of students not in the school-based mentoring program.

This study analyzed and examined the impact of involvement in the TeamMates mentoring program through the results of the Iowa Assessment for each student by review of their growth or change in assessment scores based on standard score results for the areas of reading comprehension, math total, and science. Comparisons were also made for the selected students in the mentoring program and the matched sampling group for unexcused absences and office referrals.

This analysis was completed using a pretest and posttest methodology to examine the impact of school-based mentoring program on student achievement. The study used a quasi-experimental model using matched sampling technique for students with a mentor and students without a mentor.

Data points used in the study included the standard scores from the student's Iowa Assessment in the areas of math, reading, and science. In addition, data points of office referrals and student attendance were also used. Analysis of the data was completed using a repeated measure two-way repeated measure Anova and Chi-Square tests utilizing an Excel program and SPSS software.

While this study did not find any statistical significance between involvement in the school-based mentoring program, with respect to the student's data from the Iowa Assessments in the areas of reading, mathematics, and science or their attendance or office referral data, there is support, found in the review of literature, for the usage of a school-based mentoring program. While the effect size of this research is rather small, there is also research and support for the qualitative indicators supporting the benefits of school-based mentoring. In addition, the small sample size used in this study may also have been a factor in the quantitative findings of this study.

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I would like to start by thanking all of my family and friends for their support throughout my educational journey, for it has been their support and encouragement that has allowed me to complete this portion of my life-long journey to forever be a learner. Leading this support has been my daughter, Natalie, and my son, Nathan. Unfortunately, the pursuit of these educational goals have, at times, been in conflict with family time and yet they have always been and will continue to be the most important two people in my life and I hope I have modeled for them the value of hard work to achieve their goals.

I also wish to thank my sister Pam. She has been my best friend and encourager throughout this journey and without her support I would have likely not completed. For on countless occasions I thought I'd had enough and wanted to stop, but she kept believing in me even when I questioned myself. Just like my sister, my brother David's support has helped to guide me, not only in this process, but throughout my life and for this support I am forever grateful.

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Chapter 1

Introduction

“Mentoring is an investment in one person’s life that pays dividends in the lives of many,” states Dr. Tom Osborne in his book *Beyond the Final Score* (The Mentor, p. 2). In fact, the legendary Nebraska football coach and co-founder of TeamMates Mentoring program, tells of the impact of a mentor on his grandfather’s life and how that single mentor impacted generations of Osbornes because of the mentorship of his grandfather. He uses this testimonial to encourage adults to join the school-based mentoring program and to consider the impact that their donation of one hour, once a week can have on not only their mentee, but possibly the descendants of the mentee (TeamMates, 2014).

Dr. Osborne has described the mentor as providing three contributions to the mentee in his book, *Beyond the Final Score*, namely those of vision, unconditional care and affirmation. Osborne has described this vision as helping the mentee see his or her future and make positive choices. Additionally, he has described this vision as providing hope for the mentee, which can play in a student’s success. One of the outcomes of having this vision is that the mentee not only graduates from high school, but in many cases attends college also. When speaking of the unconditional care, Osborne will often times reference agape love or positive support and love without conditions. “It is not a warm fuzzy feeling but an unwavering commitment to another person. This kind of consistent love from an adult can be extraordinarily powerful in the life of a young person,” Osborne writes (p. 2). Positive feedback is at the core of the affirmation to which Osborne is referring. “Having someone who believes that they can accomplish

great things is a powerful catalyst for achievement,” states Osborne (The Mentor, p. 2). The affirmation is at the core of the relationship that is developed between the mentee and the mentor. The program uses a strength-based model to aid in the relationship developed between the mentee and the mentor and encourages affirmation of those strengths in the mentee.

These three contributions are also the target for the mentors in the work of the TeamMates mentoring program. TeamMates was started in 1991 by Tom and Nancy Osborne. Dr. Osborne was a long-time head football coach at the University of Nebraska, and it was during this time as a football coach that his wife approached him with the idea of making a difference with students in the Lincoln, Nebraska, schools through a mentoring program. The program started with the first mentors being some of the mentors of the NU football team at that time. The program has since evolved into one that asks a youth or mentee and a caring adult that will serve as a mentor to make a commitment to meet roughly one hour per week. This relationship-based mentoring program is grounded in a belief that mentors can provide the mentee with a sense of hope, purpose, and vision (TeamMates, 2014).

The idea of mentoring is not new, and, in fact, its origins can be traced back to 800 B.C. in Homer’s poem The Odyssey. In fact, there is a consensus among authors that the term mentor originates from the poem. In the poem Mentor was the trusted friend that Odysseus asked to watch over and assist in the raising of the King’s son, Telemachus, while he was at war. Mentor provided Telemachus with guidance and served as his father figure, instructor, counselor, adviser, encourager, challenger, and role model (Carruthers, 1993; TeamMates, 2013; Baker & Maguire, 2005).

Mentoring does have costs associated with any program that a school might use, but the National Mentoring Partnership states that there is “evidence that quality mentoring yields a 3:1 return on investment dollars” (Mentoring.org, Funding, p.1). Financial support for mentoring programs by the Federal Government is significant and thus their impact on student achievement is of great importance to school officials, policy makers, and taxpayers alike. In fact, The National Mentoring Partnership (MENTOR) reports that for the 2013 fiscal year President Obama signed an appropriations bill that included \$90 million to support Youth Mentoring Grant Programs. MENTOR is requesting \$100 million for the 2014 fiscal year. Many believe that quality mentoring is an investment in our youth and will pay dividends with respect to student achievement and high school graduation (Mentoring.org, Funding).

Despite these claims of return on one’s financial investment, much of the most recent research on the effect size of school-based mentoring is rather meager with respect to said effect size. DuBois and others completed a meta-analysis of the research related to school-based mentoring and published their findings in 2002. This meta-analysis found that the effect size of school-based mentoring ranged from .14 to .18. The effect size of .5 is roughly equivalent to one year of academic growth, and the statistical impacts of the programs evaluated are rather minor. In 2011, DuBois published the findings of a second meta-analysis and reported that the effect size of school-based mentoring was .21(DuBois, D. L., Holloway, B. E., Valentine, J. C., & Cooper, H., 2002 and DuBois, D. L., Portillo, N., Rhodes, J. E., Silverthorn, N., & Valentine, J. C., 2011). These findings tend to be counterintuitive to many of our own personal experiences or

testimonials from others when one caring adult in our lives or the life of someone we know made a significant impact on the person being mentored.

Our nation's increasing population of at-risk or fragile students is what continues to drive the need for supports like school-based mentoring. This is based upon indicators of student achievement such as proficiency levels defined by No Child Left Behind (NCLB), truancy issues and connectedness to school, as measured by discipline referrals. These indicators, along with other academic and behavior indicators, are used to identify students that have a strong likelihood of considering dropping out of high school. In fact, Barton in 2005 wrote, "About a third of the students are leaving high school without a diploma: One-Third of a Nation" (p.3). Forrest-Cataldi and Laird (2007) stated that "Dropping out of high school is related to a number of negative outcomes. For example, the median income of persons ages 18 through 65 who had not completed high school was roughly \$24,000 in 2007. By comparison, the median income of persons ages 18 through 65 who completed their education with a high school credential, including a General Educational Development (GED) certificate, was approximately \$40,000" (p.1). This 66% increase in earning over a lifetime can have a significant impact on a person's quality of life and his or her need to depend upon community resources to adequately survive in many communities.

The long-term implications that dropping out of high school have on our economy and communities are some of the key driving factors that are positively impacted by school-based mentoring. When involved in a mentoring program, the results can positively influence the life of a fragile or at-risk student and potential future generations.

But, in a less philanthropic approach, school districts need to understand of the impact their investments have on student success. This question is at the core of this study.

Conceptual Framework

This study will examine the impact of a school-based mentoring program, such as TeamMates, on student achievement. While there exists research about the impacts of school-based mentoring, there is limited research about the TeamMates program that has not been conducted by TeamMates itself, and no research has been done to measure the potential impacts of such a support on a student achievement indicator of NCLB such as the Iowa Assessments. It is this impact of school-based mentoring that is of interest to school districts across Iowa and other states that are required to meet or exceed the proficiency trajectories set by NCLB from the Iowa Assessments to avoid possible sanctions or labeling of their school as a School In Need of Assistance. Moreover, the review of such student data can also provide a snapshot into a student's academic growth or lack thereof against a standard used by all schools in the State of Iowa.

It is somewhat common to use the categories of academic indicators, attendance, and connectedness to school, as measured through office referrals, as indicators associated with at-risk student populations. Knowing that there are several measures of student achievement, this study will limit its analysis of data that results from Iowa Assessments, attendance data, and office referrals. These three indicators were selected because of their connection to data used to identify and monitor 1) students that have a strong likelihood of considering dropping out of high school and 2) fragile students as defined by those having difficulty with school.

Problem Statement

The purpose of this study is to analyze and compare the impact of involvement of students in TeamMates mentoring program compared to a matched sampling of students not in the school-based mentoring program. The literature about school-based mentoring has indicated that mentoring can improve, “outcomes across behavioral, social, emotional, and academic domains of young people’s development” (DuBois, et al, 2011, p.57). These were similar findings to those discovered 2002 in a meta-analysis by DuBois and colleagues of 55 youth mentoring programs up to 1998. In this analysis they found that, “on average, youth participating in mentoring programs had benefited significantly in each of five outcome domains: emotional/psychological, problem/high-risk behavior, social competence, academic/educational, and career/employment” (DuBois, et al, 2011, p.60).

In this study we will examine this impact of involvement in the TeamMates mentoring program through the results of the Iowa Assessment for each student by review of their growth or change in assessment scores based on standard score results for the areas of reading comprehension, math total, and science. Comparisons will also be made for the selected students in the mentoring program and the matched sampling group for unexcused absences and office referrals.

To assist in determining the impact, a pretest and posttest methodology will be used to examine the influence of school-based mentoring program on student achievement. This study will use a quasi-experimental model using matched sampling technique for students with a mentor and students without a mentor. Within this research,

the independent variable will be student achievement and the dependent variable will be the school-based mentoring program.

Mentored students included in the study will have completed a minimum of twenty meetings with their mentor during the 2013-2014 school and be selected from grades 3-11. Consent for the data and usage of the data will be requested of the Lewis Central Community School District. Approximately 25 students will be selected in the matched sampling with consideration for the student's grade level, gender, free and reduced lunch status, Talented and Gifted identification, English Language Learner identification, Special Education identification, and ethnic group.

Data points used in the study included the standard scores from the student's Iowa Assessment in the areas of math, reading, and science. In addition, data points of office referrals and student attendance were also used. Analysis of the data will be completed using a repeated measure two-way repeated measure Anova and Chi-Square tests utilizing an Excel program and SPSS software.

Research Questions

The framework of this study will begin with the broad question of "What impact does a school-based mentoring program, such as TeamMates, have on student achievement indicators?" To further analyze the following guiding questions will be used:

1. What impact does a student's participation in the TeamMates mentoring program have on his or her results on the reading comprehension portion of the Iowa Assessments in comparison to a match sampling of a student not in the program?
2. What impact does a student's participation in the TeamMates mentoring

program have on his or her results on the math portion of the Iowa Assessments in comparison to a match sampling of a student not in the program?

3. What impact does a student's participation in the TeamMates mentoring program have on his or her results on the science portion of the Iowa Assessments in comparison to a match sampling of a student not in the program?
4. What impact does a student's participation in the TeamMates mentoring program have on his or her attendance measured through unexcused absences in comparison to a match sampling of a student not in the program?
5. Was the number of students who participated in TeamMates and were given no office referrals or one or more office referrals in 2014 lower than, consistent with, or above the number of students who did not participate in TeamMates?

Definition of Terms

No Child Left Behind. On January 8, 2001, Present George W. Bush announced the No Child Left Behind (NCLB) Act. This act was a reauthorization of the Elementary and Secondary Education Act (ESEA) that was first enacted in 1965. NCLB was a bipartisan act that was to turn around the dilemma of too many of our most at-risk students being left behind, despite the nearly \$200 billion in Federal spending since the passing of ESEA. To accomplish this, NCLB enacted increased accountability through annual testing and academic progress. This accountability and testing required that all states

bring all students up to proficient on their state tests by the 2013-2014 school year in the areas of reading and math (Education Week, 2004 and U.S. Dept. of Ed., 2015).

NCLB has provided accountability in a structure that provides rewards and punishment that are based upon student achievement data from annually administered high stakes assessments. “School districts and schools that fail to make adequate yearly progress (AYP) toward statewide proficiency goals will, over time, be subject to improvement, corrective action, and restructuring measures aimed at getting them back on course to meet State standards. Schools that meet or exceed AYP objectives or close achievement gaps will be eligible for State Academic Achievement Awards” (U.S. Dept. of Ed., 2015, p. 1).

TeamMates. In 1991, Tom and Nancy Osborne founded the school-based mentoring program of TeamMates in Lincoln, Nebraska. Helping students to graduate from high school and seek post-secondary education was and still is the goal of the program. To accomplish this goal they ask mentor and mentee matches to commit to a goal of meeting one hour per week during the school year. The aim of the program is that the mentor helps to provide hope, purpose, and vision to the mentee. “The TeamMates Mentoring Program is based on the National Mentoring Partnership’s Elements of Effective Practice. The Elements are research based guidelines for providing a quality mentoring program. The Kellogg Foundation has recognized TeamMates as a ‘best practice’ mentoring program” (TeamMates, 2015, p. 2).

Iowa Assessments. The Iowa Assessments is a norm-referenced standardized assessment developed by the College of Education at the University of Iowa. Originally developed in 1935 as a tool to improve instruction, it was called the Iowa Every Pupil

Test of Best Skills. In more recent years it has been known as the Iowa Test of Basic Skills, and it changed to the Iowa Assessments in the 2011-2012 school year (Iowa Test of Basic Skills, 2015).

Iowa Assessment Reading. The reading assessment portion of the Iowa Assessments is comprised of two 30-minute tests that contain literature and informational passages.

These tests have questions that “focus on identifying, interpreting, analyzing, and extending information in passages” (Test Descriptions, 2015, p. 1).

Iowa Assessment Math. The math portion of the Iowa Assessments is also administered in two 30-minute assessments. These “questions are drawn from the areas of number sense and operations, algebraic patterns and connections, data analysis/probability/statistics, geometry and measurement” (Test Descriptions, 2015, p. 1).

Iowa Assessment Science. The science portion of the Iowa Assessments is one 35-minute assessment. “Questions emphasize the methods and processes used in scientific inquiry, as well as knowledge in the areas of life science, earth and space science, and physical science” (Test Descriptions, 2015, p. 1).

Attendance. For the purposes of this study, student attendance will be defined as absences from school that are either excused or unexcused. This data will be represented in part of full-day equivalencies based upon fractional values of the day displayed in a decimal form.

Office referrals. Office referrals will include all student discipline referrals that were recorded as a student discipline incident. These incidents will include, but are not limited to, classroom incidents, before and after school incidents, and bus referrals.

Assumptions

It is assumed that all participants in this study will approach the Iowa Assessment with a similar level of attention and effort. In addition, students used in the matched sampling will be similar to those in the target population based upon the selection criteria and therefore reasonably comparable for the indicated variables of the research questions.

Limitations

As is the case with many studies there are limitations to this study, and many of those limitations relate to other interventions and supports the students may receive to address identified areas of concern relative to the student achievement data reviewed in this study. Such is the case for the results from the reading comprehension portion of the Iowa Assessments. Students in this study may have received interventions to support improvements in their reading comprehension. In a similar manner, supports may have been provided in the areas of math and science. Students with Individual Educational Plans often receive accommodations that are personalized to the student and in many cases are not the same for two identified students. Similar limitations can be the variances of having different teachers, even for a similar or identical course. These and similar academic limitations are not unique to this study and are often factors to be considered in the findings of most educational studies analyzing the impact of an intervention in a school setting.

In a similar manner, in which varied academic interventions may or may not impact the results of academic assessments such as the Iowa Assessments, the same logic is applied to those limitations which might be present for student attendance, more specifically, the impact that supports and interventions of attendance letters, phone calls

to parents, involvement of school counselors, involvement of School-Based Interventionist, etc. may have on a student's attendance data. Similar limitations are present in reviewing the data related to student discipline or office referrals. Interventions or supports provided to students by counselors, administrators, or other support staff as behavior interventions may or may not impact a student's office referral data.

While the researcher is a TeamMates mentor within the school district in which the study occurred, this particular limitation may actually be a strength of the study because of the researcher's knowledge and experience of the program. This knowledge and experience can potentially add value and context to potential recommendations and implications that will be found in chapter 5 of this study.

Delimitations

The two main delimitations to the study would include the fact that the participants used in the study were only from the Lewis Central School District and the results from this study are based on the TeamMates mentoring program and should not be generalized to other mentoring programs.

The school district used in this study is located on the south side of a community adjacent to a larger metropolitan area located on the border of two adjacent Midwest states. The enrollment of the district is slightly over 3200 students in pre-kindergarten through twelfth grade. This enrollment places the school district at the ranking of the 45th largest school district in the Midwest state in which it is located. The demographics of the district are such that free and reduced lunch rates for the attendance center schools range from 37% to nearly 45%. The district's special education percentage is roughly

11%, English Language Learners at 1%, and Hispanic population percentage at roughly 8%. Portions of the school district and the community of which it is part exhibit the characteristics of a larger urban community, specifically, those of high poverty rates, significant school dropout rates, and low graduation rates in comparison to similar data for this particular Midwest state. The TeamMates mentoring program was officially started in the school district in the spring of 2013 with its first matching of a student mentee and a community member mentor.

Significance of the Study

The significance of this study will be the implications of the support of the school-based mentoring program for fragile students as it relates to the questions posed. These results may assist decision-making bodies in prioritization of resources, supports, policies, and practices to support fragile students for success in school and, ultimately, graduation. Ideally many of these students would not only graduate, but go on to attend additional schooling or training after high school.

While the current research findings for the impact of school-based mentoring is rather meager, based upon the effect size and results from the work by DuBois and others, the history and belief in the impact of mentoring is rather extensive. Therefore, it is the hypothesis of this study that the support of a school-based mentoring program, or the involvement of a mentor with a student, will positively impact his/her student achievement as measured by the Iowa Assessments, absences, and office referrals.

DuBois and others (2002) identified best practices for mentoring programs. Their findings included the programs having set expectations for mentors in terms of the length of their involvement and how often they met with or had contact with their mentee. They

also found that successful programs provided mentor training before the mentor had contact with the mentee and provided ongoing organization monitoring of the mentor and mentee match (DuBois et al., 2002). TeamMates adheres to these recommendations by asking their mentors to make a commitment of one hour once per week for a minimum of 24 weeks out of a school year. They also require that all mentors going through mentor training with TeamMates staff prior to meeting with their mentee. TeamMates monitors data related to the mentor and mentee by noting the frequency of the contact between the mentee and mentor. In addition they gather data on the mentee's attendance, office referrals and grades.

Outline of the Study

This dissertation is organized into five chapters. Chapter 1 introduces the importance of a mentor, TeamMates mentoring program, and some of the research about school-based mentoring, in addition to the conceptual framework, problem statement, and research questions. At the conclusion of the chapter are the assumptions, limitations, delimitations, and the significance of the study.

In chapter 2, the literature review, this study examines mentoring through three different lenses: Evolution of Mentoring, Need for Mentoring, and Research in Support of Mentors. In the section on the Evolution of Mentoring the literature starts with one of the first recorded mentors in Homer's epic poem *The Odyssey* and ends with the concept of school-based mentoring. In the section Need for Mentoring, the literature shares information about graduation rates, dropout rates, and other negative implications associated with at-risk or fragile students. The final section shares information about the Research in Support of Mentoring, including the effect size of a meta-analysis of school-

based mentoring programs and findings from other research related to some of the variables contained within the research questions of this study.

Chapter 3 outlines the methodology of this study and includes the selection process for the target population and matched sampling, collection of the data used for the research questions, and the analysis techniques. Chapter 4 will present the results of this study, and Chapter 5 will provide a discussion of this study and suggestions for future research.

Chapter 2

Literature Review

Evolution of Mentoring

“Someone who teaches or gives help and advice to a less experienced and often younger person,” is the definition that Merriam-Webster’s online dictionary gives to the term *mentoring*. There is a consensus among authors that the term *mentor* originated around 800 B.C. in Homer’s famous poem *The Odyssey*. Mentor was the trusted friend that Odysseus asked watch over and assist in the raising of the King’s son, Telemachus, while he was at war. Mentor provided him with guidance and served as his father figure, instructor, counselor, adviser, encourager, challenger, and role model (Carruthers, 1993; TeamMates, 2013; Baker & Maguire, 2005).

Clearly the Greeks knew the importance and value of a mentor in a young adult’s life by entrusting Mentor to help guide Telemachus on his own maturation and life’s journey in the absence of the King. It is a similar relationship-based approach that occurs in formal mentoring relationships, when an adult is asked to be a role model and friend to a young adult. California Mentor Resource (1996) describes mentoring as a one-to-one relationship based upon a caring, supportive, trust-based interaction between a mentor and a mentee. These relationships center on the needs of the mentees by encouraging and fostering them to develop themselves to their fullest potential based upon their own goals and desires for the future.

Definitions of *mentor* appear to be abundant with phrasing of trust and relationship as the cornerstone of the mentor-mentee bond. In 2002 Clinton stated “mentoring is a relationship between two individuals of different ages that is formed to

support the younger person through some aspect of development over a period of time” (p. 1). Furthermore, Casey and Shore (2002) have described mentoring as “a learning partnership between two or more persons who wish to share and develop a mutual interest” (p. 12).

As our understanding of the role of the mentor has increased, so has our shared understanding of the definition evolved. Much of the more recent evolution in the defining of *mentoring* has been related to the targeting of the mentor support of at-risk or fragile students. Not only are several of these students in danger of not graduating from high school, but often they come from homes of generational poverty. In 2002, Keating, Tomishima, Foster, and Alessandri acknowledge that many mentoring organizations and programs vary in their structure. Many if not all prioritize the bond between a “disadvantaged or troubled youngster and a caring adult” (p. 1). It was also in 2002 that Jekielek, Moore, Hair, and Scarupa described this mentor-mentee interaction as one that can provide support from the adult mentor to the young mentee in the areas of guidance, support and assistance. As is the case in the other mentor-mentee relationships described, at its foundation the adult can provide the youth with a sense of caring. It is this involvement of a concerned adult that will likely lead the young mentees to be successful themselves as adults.

As described, the definition of *mentor* has evolved over time, and as our cited others have pointed out the purpose, the mentor has been more about a relationship-based model targeting and supporting more fragile students. In fact, Baker and Maguire released a study in 2005 in which they have described mentoring in the United States as having moved through or evolved through four different stages of development.

Emergence was the first stage in the evolution. It was during this stage that there existed an increase in the frequency of “friendly visitors,” as defined by Rauch in 1975, to attempt to prevent youth delinquency or support the fragile student. Baker’s and Maguire’s second stage was that of establishment. It is within this stage that formal mentoring organizations began to appear and be formed. The purpose of these newly formed organizations was to aid such fragile youth through a mentoring program, and as this continued to progress, the third stage of divergence evolved, in which the specific sector of mentoring to support fragile youth, and programs offering a more focused approach on delinquency prevention were established. The final stage began in the early 21st century and was defined by Baker and Maguire (2005) as focus. This final stage targets a needed understanding of the many different factors involved in a successful process of mentoring. They also discuss the need for the creation of additional policy and support from the mentoring organization (Baker & Maguire, 2005).

Herrera, C., Sipe, C. L., McClanahan, W. S., Arbreton, A. J., & Pepper, S. K. (2000) wrote of some of the commonalities of many school-based mentoring programs and noted that since the matches meet in a supervised location such as the school or in some instances, other community facilities, they often have a less rigorous mentor screening and matching process in comparison to that of a community-based program. In addition the school-based mentoring programs tend to have a shorter term of commitment for the mentor, regular schedule for mentoring, and set activities for the matches to be involved in during their meeting time (Herrera, C. et al., 2000).

Much of the movement to school-based mentoring has been prompted by pressure schools are under for student achievement and performance. This pressure in a time of

declining financial and staffing resources has caused many schools to look to their community for support and assistance through the time they can provide as a mentor to a fragile student (Randolph & Johnson, 2008). It is this need that schools have that has helped the evolution of the focus stage of mentoring previously referenced by Baker and Maguire (2005) and which has created the need for external mentoring agencies, such as TeamMates. Such organizations can provide a relatively low cost support to a fragile student through the program offered in the school setting. It is the fact that the school setting provides a structure for a mentoring program to exist and allows for easier implementation than that of a community-based mentoring program that has also influenced the movement to school-based mentoring programs. Reaching out to and supporting the fragile students is another focus that the school-based mentoring may offer over a community-based program, since the program is housed within the school and often during the school day (Randolph & Johnson, 2008). Often these fragile students are selected by school personnel to be involved in the school-based mentoring program. These fragile students are more vulnerable than other students (Herrera, 2000) and have often times exhibited at-risk indicators such as poor attendance, office referrals, and low student achievement performance. Last, the cost of a community-based mentoring program is typically more than that of a school-based mentoring program and thus school communities are more inclined to select that of a school-based mentoring program. Despite the cost saving of the school-based mentoring program in comparison to the community-based program, there is some concern about the weaker impact of the school-based mentoring program because of the less frequent mentor and mentee contact (Herrera, 2000).

While in 2000, Herrera pointed to a weaker impact of school-based mentoring in comparison to community-based mentoring. She and Karcher in 2006 stated that the benefits of school-based mentoring were comparable in size to that of community-based mentoring; however, they were both considerably smaller than that of a counseling intervention. Despite that, there is a consensus from authors that school-based mentoring programs tend to show improvement in community engagement; peer relationships; school performance; connectedness to school or reduced behavioral issues; school attendance; relationships with school, community, and family; and decrease in office referrals and alcohol initiation (Converse, 2009; Harwood & Radoff, 2009; Karcher & Herrera, 2006, Karcher & Lindwall, 2003; Randolph & Johnson, 2008; Rhodes, Reddy, Grossman, & Lee, 2002; TeamMates, 2014). However, there are other studies that have not yielded similar results, but rather have found little to no impact of school-based mentoring on these same indicators (Barron-McKeagney, Woody, & D'Souza, 2003; Wood & Mayo-Wilson, 2012). School-based mentoring was also studied by Randolph and Johnson (2008) and they found that most of the school-based mentoring program they studied resulted in increases in behavioral and/or attitudinal outcomes. They found that the relationship between the mentor and the mentee was a major tool for success and the impacts from the school-based mentoring had positive effects on social indicators (Randolph & Johnson, 2008).

While the results were somewhat mixed, what should be kept in mind about the implementation of school-based mentoring programs is what DuBois, et al., (2002) identified as best practices in a school-based mentoring program based on their review of eight different studies. They found that all programs have set expectations for the

mentors' frequency of contact and length of their involvement with the mentee. All of the programs had training expectations for the mentor before there was any interaction between the mentor and mentee. In addition they often provided ongoing monitoring of the mentor and mentee after they had been matched (DuBois, et al., 2002).

One approach to this relationship is through a strengths-focused mentoring approach. To aid in such an approach, school-based mentoring programs like the TeamMates mentoring program uses tools like the *40 Developmental Assets*. Using such a tool provides the mentor with information to focus on the strengths of the mentee and not on their deficits. The thought behind such an approach is that it “will lead to increased sense of wellbeing and engagement in school” (TeamMates, 2012, p. 46). The more assets that a student has, the more likely he/she is to succeed in school. Within this mentoring approach, the mentors are encouraged to focus on building assets within their mentees, a shift from fixing a mentee's problems to promoting strengths. At the core of this work is a need for a strong mentor to mentee relationship (TeamMates, 2013).

The framework of *40 Developmental Assets* was developed and researched by Benson, Leffert, Scales, & Blyth in 1998. The *40 Developmental Assets* are several indicators that consist of relationships, affirmative experiences, opportunities, and personal assets that encourage strong, kind, and responsible young adults. The assets are divided into eight categories that include positive values, social competencies, positive identity, commitment to learning, boundaries and expectations, empowerment, support, and constructive use of time. These eight categories are then divided into internal and external assets. The 20 external assets are made up of contextual, environmental and interpersonal indicators of socializing structures. The 20 internal assets are comprised of

competencies, commitments, and skills. The research found that on average, a young person had only 18.6 assets of the 40 indicators possible (Benson, et al., 1998). The TeamMates mentoring program believes that their strengths-based approach may lead to supporting an increase of 10 of the 40 different assets (TeamMates, 2012).

While there exist commonalities among successful school-based mentoring programs with respect to implementation practices and outcomes, there still exist some obstacles to the implementation of such programs. These obstacles have been identified by five different categories. These categories are made up of inadequate funds, insufficient organization, lack of support, incomplete understanding of mentoring practices, and unrealistic expectations (Bordon, 2014).

Clearly mentoring has evolved since its origin in 800 B.C. in Greek literature, but at its core are still the same basic general constructs that were established between Mentor and Telemachus. This evolution of mentoring has been shaped and molded by the needs of school communities, research, and financial resources. Despite this evolution the need for a strong relationship between the mentor and mentee has remained. The current definition of mentoring might be closer to “a structured and trusting relationship that brings young people together with caring individuals who offer guidance, support, and encouragement aimed at developing the competence and character of the mentee” (Mentoring.org p.9).

Need for Mentoring

While there has been a need for mentoring starting before 800 B.C., it has been the evolution and the specialization of school-based mentoring in the United States to address social issues and dropout rates that have resulted in an increased implementation.

These issues have significantly increased the prioritization by the government and school systems across the nation to look at mentoring. Just as mentoring has evolved, so has our need for mentors. It is this ever-changing landscape of our society and school systems that has influenced the changes. In fact, Barton in 2005 wrote, “About a third of the students are leaving high school without a diploma: One-Third of a Nation” (p.3).

It was a consensus of other researchers’ work including Greene, Sum, et al, Swanson and Chapman, Barton, and finally Mortenson from 1998 to 2000 that indicated the dropout rates ranged from 71.0 to 66.1. Barton claims that one-third of our nation would be high school dropouts. In addition to the consensus by these researchers, Barton has noted that our country peaked in 1969 with a rate of 77.1 percent for graduates as a percentage of the 17-year-old population and continued with a steady drop to 69.9 in 2000 (Barton, 2005).

This work by Barton is of importance because of the significant negative impact that being a high school dropout can have on our society and community. Forrest-Cataldi (2007) stated that “Dropping out of high school is related to a number of negative outcomes. For example, the median income of persons ages 18 through 65 who had not completed high school was roughly \$24,000 in 2007. By comparison, the median income of persons ages 18 through 65 who completed their education with a high school credential, including a General Educational Development (GED) certificate, was approximately \$40,000” (p.1). This 66% increase in earning over a lifetime can have a substantial influence on a person’s quality of life and his/her need to depend upon community resources to adequately survive in many communities. Forrest-Cataldi expanded the look at the dropout criteria to include not only just the percentage of 17

year olds that have graduated high school, but also the percentage of 16-24 year olds that completed high school or high school credentials such as a GED. Within this work it was discovered that there has been a slight increase of this population. Using the criteria of a high school diploma or high school credential for the population of 16-24 olds, research indicated that in 1972 there was 82.8% of the population that met the criteria, in 1982 it was 83.8%, in 1992 it was 86.4%, in 2002 it was 86.6% and in 2007 it was 89% (Forrest-Cataldi 2007- table 10, p. 36).

While this data is slightly more optimistic than that of Barton, it would leave the reader to assume that there has been an increase in the need for the population to utilize a nontraditional path to achieve a high school diploma or its equivalency. Chapman, Laird, and Kewal-Ramani (2010) found that the United States Dept. of Education National Center for Education Statistics published for 2007-2008 a national graduation rate at 73.9%. Clearly there are differences in the methods used to calculate and report dropouts or related data. This observation is also supported by the publication of the 2007 graduation rate of 68.8% for the graduates from 2007 as noted in the 2010 edition of *Diplomas Count: Graduation by the Numbers*. More recently the National Center for Education Statistics has indicated that in 2010 the graduation rate for public schools for the United States was 78.2%.

The calculations for dropout rates also have impacted our rank in comparison to other countries that calculate dropout rates. It was in 2005 that Barton stated, “In high school graduation rates, the United States has now slipped to 10th place in the world” (p. 5).

It was in 2004 that Lehr, Johnson, Bremer, Cosio, and Thompson estimated that in the United States there is high school dropout every nine minutes. In 2005, Greene and Winters cite a significant variance in the graduation rate comparing Caucasian and non-Caucasian students. They have stated in their research that, “According to our best estimate, only 71% of the class of 2002 graduated high school with a regular diploma. This problem is particularly troubling in the case of minority students. Only slightly more than half of all Hispanic and African-American students who enter the ninth grade graduate from high school” (Greene and Winters, 2005). This same variance remains in place from a review of data from 2002 to 2010 based on the *Education Week* 2004 Diplomas Count report by Swanson. Within this report the eight years of data would indicate that white student graduation rates increased and ranged from roughly 73% to 78%, African-American increased and ranged from 48% to 57% and Latino graduation rates increased and ranged from roughly 52% to 57%, accounting for only a slight variance. This same observation is supported by Forrest-Cataldi and Laird (2007) in which it was reported that in both private and public schools, Hispanic students had a higher likelihood of dropping out of school than Caucasian students during the same time period. While these findings support the same results and differences between Caucasian and Hispanic students, the research indicated that students of low-income families were ten times more likely to drop out than a peer student in a high-income family (Forrest-Cataldi, 2007). The *Education Week* report did, however, show that the graduation gap is beginning to narrow for most non-white students in comparison to white students. In fact, in 2010 the graduation rate for white students was 79.6%, Hispanic 68.1%, and African-American 61.7% (Swanson and Lloyd, 2013).

While the research indicates the various discrepancies between different subgroups based upon their ethnicity, the findings on dropout rates for low-income family students support the need for mentors beyond that of a student's ethnicity to a focused effort on less advantaged students in general. Given that the earning potential was two-thirds less for a student without a high school or equivalent degree, one could clearly see that not intervening for many of these students would mean a continued path of poverty.

Potential dropouts have early indications that would include school attendance and suspensions. School attendance issues or truancy are often the start of a life of difficulties for students who frequently miss or avoid school. Many of these students fail to complete their required school work and fall further behind because of their absences from school. Once behind in their work they feel as though dropping out is much easier than that of trying to complete the missing school work. Students with school attendance issues are at higher risk of being involved in alcohol, drugs, and/or violence. An assistant deputy attorney from California who works truancy cases states that he has "never seen a gang member who wasn't a truant first" (p.1). Los Angeles County Office of Education has reported a connection between truancy and delinquency and criminal activity. They have concluded that chronic truancy can be a powerful indicator of delinquent behaviors (Garry, 1996).

Disengagement from school not only results in outcomes related to truancy, it is often associated with suspensions from school. In the report *School Characteristics Related to the Use of Suspension* by Christle (p. 1) it states, "Suspension has been related to school failure, dropout, delinquency, and criminal behavior. Students who are

suspended tend to receive lower grades, are more likely to have learning or emotional disabilities, or to have academic skill deficits (Costenbader & Markson, 1998). These students are three times more likely to drop out of school (Skiba & Peterson, 1999), and over 80% of incarcerated adults have dropped out of school (Coalition for Juvenile Justice, 2001)” (Christine, A. 2014).

There are several factors that would classify a student as at-risk or fragile which go beyond the indicators of attendance, suspension, minority group, or socioeconomic status. Some of these factors include the educational level of the student’s parents, gender, mobility, student’s level of English, single parent homes, and psychosocial issues (Tompkins and Deloney, 1995). These indicators not only make students more likely to potentially drop out of school, but also they increase their overall likelihood of needing a mentor.

Research in Support of Mentors

According to Wheeler, Keller, and DuBois (2010), mentoring for disadvantaged and at-risk youth has become a popular intervention in the United States in an attempt to have a positive impact on the student’s life. This assertion is supported by the fact that in the United States there are more than five thousand mentoring programs that are working with roughly three million youth. These programs have been started to address the needs of youth through adult support and guidance in their developmental years (DuBois, et al., 2011).

A meta-analysis was done in 2011 by DuBois and others of 73 independent evaluations of mentoring programs from 1999 to 2010 working with children and adolescents. Their findings indicated that mentoring programs can improve “outcomes

across behavioral, social, emotional, and academic domains of young people's development" (DuBois, et al., 2011, p.57). These were similar findings to those discovered in 2002 in a meta-analysis by DuBois and colleagues of 55 youth mentoring programs up to 1998. In this analysis they found that "on average, youth participating in mentoring programs had benefited significantly in each of five outcome domains: emotional/psychological, problem/high-risk behavior, social competence, academic/educational, and career/employment" (DuBois, et al., 2011, p.60).

In support of some of these same findings, Wheeler, Keller, et al. and DuBois (2010), discovered that there were six different outcomes from school-based mentoring that were advantageous to the mentee based on 95% confidence interval in which $p < .05$ and intervals that did not include zero. The reduction of truancy issues was the highest at .18, followed by a supportive non-familial adult relationship that had an effect size of .12. The mentee perception of his/her academic abilities or perceived scholastic efficacy was .10, school-related misconduct came in at .11, and peer support and absenteeism both had effect sizes of .07 (Wheeler, Keller, DuBois, 2010).

Prior to this, Tierney, Grossman, and Resch (1995, revised 2000) found that antisocial activities, academic outcomes, and family relationships were positive areas for the mentee based upon their work in 1992 and 1993 in their study of Big Brothers/Big Sisters. In their study they used a format in which half of the students were placed into the treatment group with the mentor randomly and half were placed on a waiting list. The study included 959 students with a majority of the students between 10 and 14 years of age. Students in the treatment group were 52% less apt to intentionally miss school and 37% less apt to intentionally miss class. In addition to these findings related to

academic outcomes, they found that 46% were less apt to start taking drugs and 27% were less apt to start using alcohol. Antisocial activity data also indicated that 32% of the treatment group was less likely to hit someone. Lastly, mentees in the treatment group were 37% less apt to be dishonest to a parent.

Previously cited data for the need for mentors indicated that Hispanic students had the highest percentage of high school dropouts, and the trend was increasing. In 2008, Karcher completed a study on Latino students in a school-based mentoring program to determine the influence of mentoring. What was discovered was that students in the school-based mentoring program indicated “positive main effects on two measures of self-reported self-esteem, on connectedness to peers, and on perceived social support from friends” (p.9). In the analysis it was also discovered that high school girls and elementary boys benefited the most from the mentoring experience (Karcher, 2008).

Some school-based mentoring programs have targeted academic improvements for select groups of students, such as the program in Philadelphia called Sponsor A Scholar (SAS). The research of this program conducted by Johnson in 1997 looked at sampling of 180 students in cohorts from grades nine through twelve from 1993. Students in the program were all eligible for free and reduced lunch guidelines and did not have any D’s or F’s. The mentors were a bit unique in that some did not have children at home themselves, all made a commitment to the mentee for five years, and all agreed to contact them no less than once per month, but as frequently as once per week. The treatment group was matched to a control group based on gender, ethnicity, and student’s grade point average. The SAS program had many components for the mentees related to college readiness that included help with college applications and financial aid.

In addition each student received \$6,000 in financial aid. Johnson's research found that mentees in the SAS program that had a mentor who had contact with them at least once per week, had a good relationship with their mentee, and knew the mentee's family were more likely to enroll in college and had higher grade point averages in tenth and eleventh grade (Johnson, 1997).

In 2005, Portwood, Ayers, Kinnison, Waris, and Wise used a matched control group study of a school-based mentoring program in which they evaluated YouthFriends. In this school-based mentoring program students were matched with a caring adult that agreed to meet with them for about one hour a week for a period of time just under one school year or a minimum of eight months. The researchers reviewed the YouthFriends mentoring program for impacts on the students' attitude toward school, their performance in school, substance abuse and usage, school connectedness, their attitude toward themselves, their outlook toward adults, and their outlook toward the future. They used a questionnaire compiled from 13 sources and pre- and post-test design to assist in determining their targets to measure. While their research indicated that the treatment group had a significant increase in school membership, there was no significant difference for the other indicators. However, within the treatment group, they discovered that there was a statistically significant growth for at-risk students in all areas except self-concept in association to those students in the control group.

Research was completed by Lampley and Johnson (2010) of Linking Individual Students To Educational Needs (LISTEN) mentoring program for students that had ten or more absences in a year, ten or more referrals in a year, and failing one or more classes, in which they were matched with a school employee resulted in improvements in all three

areas. Student improvements included 94% having a positive change in their grades, 94% having fewer referrals, and 96% increasing their attendance rate. School employees met with their mentee twice a week, and data was collected every six weeks on all three indicators.

While several researchers and studies have been cited in this section, it is the work of DuBois and numerous other co-authors that appear to be the most recognized studies of the impacts of mentoring programs on students. In their meta-analysis in 2011 they found that the effect size of mentoring to be a modest .21 (DuBois, et al., 2011) in comparison to their 2002 results that yielded an effect size ranging from .14 to .18 (DuBois, et al., 2002).

The 2002 work of DuBois and co-authors led to the recommendations for the youth mentoring program ‘best practices.’ In these recommendations they call for screening of mentors, pre-match training for mentors, matching for mentors and mentee based on at least one criteria, support for some structured activity during the meeting time with the mentee and mentor, on-going support training for the mentors, supervision of program and implementation, standard for frequency of contact, length of match relationship, and parental support (DuBois et al., 2002). “Overall, the model presented here suggests that when relationships with non-parental adults are experienced by youth as meaningful and supportive, they can serve as a catalyst for several intertwined developmental and interpersonal processes that, in turn, help young people to both avoid problems and reach their full potential” (DuBois, et al., 2011, p.66).

Chapter Three

Methodology

Brief Overview

The long-term implications that dropping out of high school has on our economy and on a local community are some of the key driving factors when considering a school-based mentoring program. Best practice school-based mentoring programs claim to have the ability to positively impact the life of a fragile or at-risk student and potential future generations. But, in a less philanthropic approach, school districts need to understand the impact their investments have on student success and more specifically whether or not the investment of district resources into a school-based mentoring program will result in positive gains.

The purpose of this study was analyze and compare the impact of involvement of students in TeamMates mentoring program compared to a matched sampling of students not in the school-based mentoring program.

This study analyzed and examined the impact of involvement in the TeamMates mentoring program through the results of the Iowa Assessment for each student by review of their growth or change in assessment scores based on standard score results for the areas of reading comprehension, math total, and science. Comparisons were also made for the selected students in the mentoring program and the matched sampling group for unexcused absences and office referrals.

This analysis was completed using a pretest and posttest methodology to examine the impact of school-based mentoring program on student achievement. The study used a quasi-experimental model using matched sampling technique for students with a mentor

and students without a mentor. Within this research, the independent variable was student achievement and the dependent variable was the school-based mentoring program.

The 14 mentored students included in the study completed a minimum of 16 meetings with their mentor during the 2013-2014 school and were selected from grades 3-11. Fifteen students were selected in the matched sampling with consideration for the student's grade level, gender, Talented and Gifted identification, English Language Learner identification, Special Education identification, and ethnic group. Prior to the spring of 2013, no students involved in this study had participated in the TeamMates mentoring program.

Data points used in the study included the standard scores from the student's Iowa Assessment in the areas of math, reading, and science. In addition, data points of office referrals and student attendance were also used. Analysis of the data was completed using a repeated measure two-way repeated measure Anova and Chi-Square tests utilizing an Excel program and SPSS software.

The two-way repeated measure Anova, or Analysis of Variance, was used to determine the difference among the mean standard score of the students in each of the matched samples of students for the results on the Iowa Assessments. To assist in this process, the scores from the reading, math, and science were converted to z-scores to allow for a more accurate comparison of the data. This same process, without the conversion to z-scores, was completed for the matched samples for the change in the students' unexcused absences. An *F* ratio was calculated with an alpha level of .05 to test

the null hypothesis. *Post hoc* analyses were conducted to determine if there was a main effect significance. The office referrals were analyzed using a Chi-Square.

Research Design

A pretest, posttest two-group efficacy study is displayed in the following notation with Y representing the treatment of the TeamMates mentoring:

Group 1 $X_1 O_1 Y_1 O_2$

Group 2 $X_1 O_1 Y_2 O_2$

Group 1 = Naturally formed group of students with TeamMates mentor

Group 2 = Matched sample of students without mentor

X_1 = All students in research district with normal curriculum

O_1 = Pre-test

(i) Achievement data from Iowa Assessments March of 2013

(a) Reading comprehension score

(b) Math total score

(c) Science score

(ii) Behavioral data

(a) Office referrals

(b) Attendance

O_2 = Post-test

(i) Achievement data from Iowa Assessments March of 2014

(a) Reading comprehension score

(b) Math total score

(c) Science score

(ii) Behavioral data

(a) Office referrals

(b) Attendance

 Y_1 = All normal curriculum and TeamMates mentoring program Y_2 = All normal curriculum without TeamMates mentoring program**Study constant** X_1 = All students in research district with normal curriculum**Implementation of the Independent Variables**

The independent variables were the implementation of the TeamMates mentoring program. All students in the study received normal curriculum.

 Y_1 = All normal curriculum and TeamMates mentoring program Y_2 = All normal curriculum without TeamMates mentoring program**Dependent Variables**

This study's dependent variables were the achievement scores of the Iowa Assessments and behavioral data from 2013 and 2014.

 O_1 = Pre-test

(i) Achievement data from Iowa Assessments March of 2013

(a) Reading comprehension score

(b) Math total score

(c) Science score

(ii) Behavioral data

(c) Office referrals

(d) Attendance

O₂ = Post-test

(i) Achievement data from Iowa Assessments March of 2014

(a) Reading comprehension score

(b) Math total score

(c) Science score

(ii) Behavioral data

(c) Office referrals

(d) Attendance

All Iowa Assessment data and behavioral data were gathered from the research district's data management system.

Research Questions, Instruments and Data Analysis

The framework of this study began with the larger question of “What impact does a school-based mentoring program, such as TeamMates, have on student achievement indicators?” To further analyze, the following guiding questions were used:

Overarching Pretest-Posttest Research Question #1: What impact does a student's participation in the TeamMates mentoring program have on his/her results on the reading comprehension portion of the Iowa Assessments in comparison to a match sampling of a student not in the program?

Analysis: Research question #1 was analyzed by using a two-way repeated measure Analysis of Variance (Anova) to determine the significance of difference of the group scores employing an alpha of .05 control for Type I errors. If a significant *F* value was found, a *post hoc* analysis determined simple main effects and interactions.

Overarching Pretest-Posttest Research Question #2: What impact does a student's participation in the TeamMates mentoring program have on his/her results on the math portion of the Iowa Assessments in comparison to a match sampling of a student not in the program?

Analysis: Research question #2 was analyzed by using a two-way repeated measure Anova to determine the significance of difference of the group scores employing an alpha of .05 control for Type I errors. If a significant F value was found, a *post hoc* analysis determined simple main effects and interactions.

Overarching Pretest-Posttest Research Question #3: What impact does a student's participation in the TeamMates mentoring program have on his/her results on the science portion of the Iowa Assessments in comparison to a match sampling of a student not in the program?

Analysis: Research question #3 was analyzed by using a two-way repeated measure Anova to determine the significance of difference of the group scores employing an alpha of .05 control for Type I errors. If a significant F value was found, a *post hoc* analysis determined simple main effects and interactions.

Overarching Pretest-Posttest Research Question #4: What impact does a student's participation in the TeamMates mentoring program have on his/her attendance measured through unexcused absences in comparison to a match sampling of a student not in the program?

Analysis: Research question #4 was analyzed by using a two-way repeated measure Anova to determine the significance of difference of the group scores employing

an alpha of .05 control for Type I errors. If a significant *F* value was found, a *post hoc* analysis determined simple main effects and interactions.

Overarching Pretest-Posttest Research Question #5: Was the number of students who participated in TeamMates and were given no office referrals or one or more office referrals in 2014 lower than, consistent with, or above the number of students who did not participate in Teammates?

Analysis: Significance in the difference of office referral data was measured using a Chi Square for goodness of fit. Chi Square employed an alpha level of .05 control for Type I errors.

Subjects

The 28 subjects used in this research were comprised of the 14 normally selected students in the TeamMates mentoring programs and the 14 matched students. These 14 matched students were identified and matched based upon grade level, gender, ethnic identification, Special Education identification, Talented and Gifted identification, English Language Learner identification, Iowa Assessment reading comprehension scores, Iowa Assessment math total scores, Iowa Assessment science scores, attendance data and office referrals.

Grade Level of Subjects. The grade level range of the students used in this study ranged from 3rd grade to 12th grade. This grade range is the same as the grade levels of those students eligible to participate in the TeamMates mentoring program. The grade ranges for students at the start of the study were 3-10 during the 2012-2013 school year to accommodate the need for pretest and posttest data from the Iowa Assessments.

Gender of Subjects. Of the naturally formed group containing subjects that participated in the TeamMates mentoring program, 50% were female and 50% were male.

Ethnic Identification of Subjects. Of the naturally formed group containing subjects that participated in the TeamMates mentoring program, 86% of the subjects were Caucasian and 14% were African-American.

Special Education Identification of Subjects. Of the naturally formed group containing subjects that participated in the TeamMates mentoring program, 14% were identified as Special Education Students.

Talented and Gifted Identification of Subjects. Of the naturally formed group containing subjects that participated in the TeamMates mentoring program, none of them were identified as Talented and Gifted students.

English Language Learner Identification of Subjects. Of the naturally formed group containing subjects that participated in the TeamMates mentoring program, none of them were identified as English Language Learners.

Iowa Assessment Reading Comprehension Scores of Subjects. Of the naturally formed group containing subjects that participated in the TeamMates mentoring program, standard scores on the Iowa Assessment Reading portion of the examination fell within the naturally formed range of 164 to 242 for the pretest data from the 2012-2013 school year.

Iowa Assessment Math Scores of Subjects. Of the naturally formed group containing subjects that participated in the TeamMates mentoring program, standard scores on the Iowa Assessment Math portion of the examination fell within the naturally formed range of 154 to 263 for the pretest data from the 2012-2013 school year.

Iowa Assessment Science Scores of Subjects. Of the naturally formed group containing subjects that participated in the TeamMates mentoring program, standard scores on the Iowa Assessment Science portion of the examination fell within the naturally formed range of 159 to 275 for the pretest data from the 2012-2013 school year.

Attendance Data of Subjects. Of the naturally formed group containing subjects that participated in the TeamMates mentoring program, daily absences from the 2012-2013 school year ranged from 0 to 22.5 days absent.

Discipline Referral Data of Subjects. Of the naturally formed group containing subjects that participated in the TeamMates mentoring program, discipline referrals from the 2012-2013 school year ranged from 0 to 7 referrals.

Data Collection Procedures. All research study data used in this study was retrospective and routinely collected school district data. Appropriate school district personnel were contacted for permission for the usage of the data used in this research study. The data from the naturally formed group of subjects that participated in the study was generated by reviewing the list of all students that were enrolled in the TeamMates mentoring program during the 2012-2013 school year. This list was then reviewed to determine which students had met with their mentor more than 15 times during the 2012-2013 school year. That list of students was then reviewed to determine which students had participated in the Iowa Assessments for both the 2012-2013 and 2013-2014 school year.

After determining the subjects in the naturally formed group of students with a TeamMates mentor that met the aforementioned criteria, the selection process began for each subject's matched sample that did not participate in the TeamMates mentoring

program. Students were matched individually with a student from the TeamMates mentoring sample based on the following criteria in rank order: grade level, gender, ethnic group, Special Education identification, Talented and Gifted identification, English Language Learner identification, Iowa Assessment Reading score from 2013, Iowa Assessment Math score from 2013 and Iowa Assessment Science score from 2013.

Research Site. The research was conducted in a public school setting through normal educational practices. This study did not interfere with the typical educational function or the school sites or district. This study did not involve distress or pressure of any kind in the completion of this study. The information and data gathered in this research was stored on the researcher's laptop computer and the researcher's own Google spreadsheet. The statistical analysis occurred in the office of the primary researcher, dissertation committee member, and with an administrator from the school district. The data and files were securely stored and monitored.

Institutional Review Board (IRB) for the Protection of Human Subjects Approval Category.

Exemption for this study was provided under 45 CFR 46:101b, category 4. This research was conducted in an established accepted educational setting and involving normal educational practices. A letter of support from the research district was provided for the University of Nebraska Medical Center/University of Nebraska at Omaha Joint Institutional Review Board review.

Chapter Four

Results

Purpose of the Study

The purpose of this study is to analyze and compare the impact of involvement of students in TeamMates mentoring program compared to a matched sampling of students not in the school-based mentoring program.

This study analyzed and examined the impact of involvement in the TeamMates mentoring program through the results of the Iowa Assessment for each student by review of their growth or change in assessment scores based on standard score results for the areas of reading comprehension, math total, and science. Comparisons were also made for the selected students in the mentoring program and the matched sampling group for unexcused absences and office referrals.

This analysis was completed using a pretest and posttest methodology to examine the impact of school-based mentoring program on student achievement. The study used a quasi-experimental model using matched sampling technique for students with a mentor and students without a mentor. Within this research, the independent variable was student achievement and the dependent variable was the school-based mentoring program.

The 14 mentored students included in the study completed a minimum of 16 meetings with their mentor during the 2013-2014 school and were selected from grades 3-11. Fifteen students were selected in the matched sampling with consideration for the student's grade level, gender, Talented and Gifted identification, English Language Learner identification, Special Education identification, and ethnic group. Prior to the

spring of 2013, no students involved in this study had participated in the TeamMates mentoring program.

Data points used in the study included the standard scores from the student's Iowa Assessment in the areas of math, reading, and science. In addition, data points of office referrals and student attendance were also used. Analysis of the data was completed using a repeated measure two-way repeated measure Anova and Chi-Square tests utilizing an Excel program and SPSS software.

The two-way repeated measure Anova, or Analysis of Variance, was used to determine the difference among the mean standard score of the students in each of the matched samples of students for the results on the Iowa Assessments. To assist in this process the scores from the reading, math, and science were converted to z-scores to allow for a more accurate comparison of the data. This same process, without the conversion to z-scores, was completed for the matched samples for the change in the students' unexcused absences. An *F* ratio was calculated with an alpha level of .05 to test the null hypothesis. *Post hoc* analyses were conducted to determine if there was a main effect significance. The office referrals were analyzed using a Chi-Square.

Research Questions, Instruments and Data Analysis

The framework of this study began with the larger question of "What impact does a school-based mentoring program, such as TeamMates, have on student achievement indicators?" This was analyzed further by using the following guiding questions:

Overarching Pretest-Posttest Research Question #1: What impact did a student's participation in the TeamMates mentoring program have on their results on the

reading comprehension portion of the Iowa Assessments in comparison to a match sampling of a student not in the program?

Analysis: Research question #1 was analyzed by using a repeated measure two-way Analysis of Variance (ANOVA) to determine the significance of difference of the experimental and control groups' z-scores from 2013 to 2014. An alpha of .05 was used to control for Type I errors.

This analysis of variance was conducted to evaluate the impact of participation in the TeamMates mentoring program on the reading comprehension results from the Iowa Assessments in comparison to the matched sampling of students that were not in the TeamMates mentoring program ($N = 26$). Table 1 contains means and standard deviations for the experimental and control groups z-scores for 2013 and 2014 reading, mathematics, and science assessments. As seen in table 2, for the reading assessment, there was no significant main effect for time $F(1, 26) < 0.01, p = .97, \eta^2 < 0.01$. There was also no significant main effect for the groups $F(1, 26) = 0.02, p = .88, \eta^2 < 0.01$. Finally, there was no significant interaction between time and group $F(1, 26) = 0.01, p = .93, \eta^2 < 0.01$. Thus, it was concluded that students with a TeamMates mentor and the matched sampling of students without the mentor do not significantly differ on their reading comprehension results, $p > .05$.

Overarching Pretest-Posttest Research Question #2: What impact does a student's participation in the TeamMates mentoring program have on their results on the mathematics portion of the Iowa Assessments in comparison to a match sampling of a student not in the program?

Analysis: Research question #2 was analyzed by using a repeated measure two-way Analysis of Variance (ANOVA) to determine the significance of difference of the experimental and control groups' z-scores from 2013 to 2014. An alpha of .05 was used to control for Type I errors.

This analysis of variance was conducted to evaluate the impact of participation in the TeamMates mentoring program on the mathematics results from the Iowa Assessments in comparison to the matched sampling of students that were not in the TeamMates mentoring program ($N = 26$). Table 1 contains means and standard deviations for the experimental and control groups z-scores for 2013 and 2014 reading, mathematics, and science assessments. As seen in table 3, for the mathematics assessment, there was no significant main effect for time $F(1, 26) < 0.01, p = .96, \eta^2 < 0.01$. There was also no significant main effect for the groups $F(1, 26) = 0.46, p = .50, \eta^2 = 0.01$. Finally, there was no significant interaction between time and group $F(1, 26) = 0.73, p = .40, \eta^2 < 0.03$. Thus, it was concluded that students with a TeamMates mentor and the matched sampling of students without the mentor do not significantly differ on their mathematics results, $p > .05$.

Overarching Pretest-Posttest Research Question #3: What impact does a student's participation in the TeamMates mentoring program have on their results on the science portion of the Iowa Assessments in comparison to a match sampling of a student not in the program?

Analysis: Research question #3 was analyzed by using a repeated measure two-way Analysis of Variance (ANOVA) to determine the significance of difference of the

experimental and control groups' z-scores from 2013 to 2014. An alpha of .05 was used to control for Type I errors.

This analysis of variance was conducted to evaluate the impact of participation in the TeamMates mentoring program on the science results from the Iowa Assessments in comparison to the matched sampling of students that were not in the TeamMates mentoring program ($N = 26$). Table 1 contains means and standard deviations for the experimental and control groups z-scores for 2013 and 2014 reading, mathematics, and science assessments. As seen in table 4, for the science assessment, there was no significant main effect for time $F(1, 26) = 0.14, p = .72, \eta^2 < 0.01$. There was also no significant main effect for the groups $F(1, 26) < 0.01, p = .95, \eta^2 < 0.01$. Finally, there was no significant interaction between time and group $F(1, 26) = 0.26, p = .61, \eta^2 = 0.01$. Thus, it was concluded that students with a TeamMates mentor and the matched sampling of students without the mentor do not significantly differ on their science results, $p > .05$.

Overarching Pretest-Posttest Research Question #4: What impact does a student's participation in the TeamMates mentoring program have on their attendance measured through unexcused absences in comparison to a match sampling of a student not in the program?

Analysis: Research question #4 was analyzed by using a repeated measure two-way Analysis of Variance (ANOVA) to determine the significance of difference of the experimental and control groups from 2013 to 2014. An alpha of .05 was used to control for Type I errors.

This analysis of variance was conducted to evaluate the impact of participation in the TeamMates mentoring program on student attendance in comparison to the matched sampling of students that were not in the TeamMates mentoring program ($N = 26$). Table 5 contains means and standard deviations for the experimental and control groups' z-scores for 2013 and 2014 student attendance. As seen in table 6, for the attendance results, there was no significant main effect for time $F(1, 26) = 0.21, p = .65, \eta^2 = 0.01$. There was also no significant main effect for the groups $F(1, 26) = 0.01, p = .91, \eta^2 < 0.01$. Finally, there was no significant interaction between time and group $F(1, 26) < 0.01, p = .95, \eta^2 < 0.01$. Thus, it was concluded that students with a TeamMates mentor and the matched sampling of students without the mentor do not significantly differ on their attendance results, $p > .05$.

Overarching Pretest-Posttest Research Question #5: Was the number of students who participated in TeamMates and were given no office referrals or one or more office referrals in 2014 lower than, consistent with, or above the number of students who did not participate in Teammates?

Analysis: The sub-question hypothesis was tested using a chi-square test for goodness of fit. There was no statistically significant difference between the distribution of the number of office referrals for students who participated in TeamMates and the distribution of the number of office referrals for students who did not participate in TeamMates, which served as the expected frequencies, $\chi^2 (1, n = 14) = 0.29, p > .05$. Chi square results are displayed in Table 7.

Table 1

Descriptive Statistics for Pretest and Posttest z-scores for Experimental and Control Groups on Reading, Math, and Science Subtests

	Experimental				Control			
	Pre		Post		Pre		Post	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Reading	0.02	0.92	0.04	0.12	0.06	1.03	0.05	0.11
Mathematics	0.05	0.85	-0.09	0.65	-0.25	0.96	-0.12	0.54
Science	-0.04	1.17	-0.01	0.69	0.08	1.09	-0.10	0.83

Table 2

ANOVA for Measures of Academic Progress in Reading z-Scores between Experimental and Control Groups

Source of Variation	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	η^2
Between Subjects					
Groups	1	0.01	0.02	0.88	< 0.01
Error	26	0.53			
Within Subjects					
Time	1	< 0.01	< 0.01	.97	< 0.01
Time*Group	1	<0.01	0.01	.93	< 0.01
Error	26	0.44			

Table 3

ANOVA for Measures of Academic Progress in Mathematics z-Scores between Experimental and Control Groups

Source of Variation	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	η^2
Between Subjects					
Groups	1	0.38	0.46	0.50	0.02
Error	26	0.82			
Within Subjects					
Time	1	< 0.01	< 0.01	.96	< 0.01
Time*Group	1	0.26	0.73	.40	0.03
Error	26	0.36			

Table 4

ANOVA for Measures of Academic Progress in Science between Experimental and Control Groups

Source of Variation	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	η^2
Between Subjects					
Groups	1	< 0.01	< 0.01	0.95	< 0.01
Error	26	1.27			
Within Subjects					
Time	1	0.08	0.14	.72	< 0.01
Time*Group	1	0.16	0.26	.61	0.01
Error	26	0.60			

Table 5

ANOVA for Measures of Academic Progress in Attendance between Experimental and Control Groups

Source of Variation	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	η^2
Between Subjects					
Groups	1	0.54	0.01	0.91	< 0.01
Error	26	39.50			
Within Subjects					
Time	1	2.36	0.21	0.65	0.01
Time*Group	1	0.04	< 0.01	0.95	< 0.01
Error	26	11.05			

Table 6

Attendance Descriptive Statistics for Experimental and Control Groups from 2013 to 2014

	Experimental				Control			
	2013		2014		2013		2014	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Attendance	5.68	4.11	5.32	3.56	5.54	6.84	5.07	4.97

Table 7

Observed Versus Expected Office Referral Frequencies for Experimental Group

Frequency	Experimental	Control	χ^2
	Observed N (%)	Expected N (%)	
No Office referrals	8 (57%)	7 (50%)	
One of More Office Referrals	6 (43%)	7 (50%)	
Total	14 (100%)	14 (100%)	0.29

Chapter Five

Conclusions and Discussion

Purpose of the Study

The purpose of this study was to analyze and compare the impact of involvement of students in TeamMates mentoring program compared to a matched sampling of students not in the school-based mentoring program.

This study analyzed and examined the impact of involvement in the TeamMates mentoring program through the results of the Iowa Assessment for each student by review of their growth or change in assessment scores based on standard score results for the areas of reading comprehension, math total, and science. Comparisons were also made for the selected students in the mentoring program and the matched sampling group for unexcused absences and office referrals.

This analysis was completed using a pretest and posttest methodology to examine the impact of school-based mentoring program on student achievement. The study used a quasi-experimental model using matched sampling technique for students with a mentor and students without a mentor. Within this research, the independent variable was student achievement and the dependent variable was the school-based mentoring program.

The 14 mentored students included in the study completed a minimum of 16 meetings with their mentor during the 2013-2014 school and were selected from grades 3-11. Fifteen students were selected in the matched sampling with consideration for the student's grade level, gender, Talented and Gifted identification, English Language Learner identification, Special Education identification, and ethnic group. Prior to the

spring of 2013, no students involved in this study had participated in the TeamMates mentoring program.

Data points used in the study included the standard scores from the student's Iowa Assessment in the areas of math, reading, and science. In addition, data points of office referrals and student attendance were also used. Analysis of the data was completed using a two-way repeated measure Anova and Chi-Square tests utilizing an Excel program and SPSS software.

The two-way repeated measure Anova, or Analysis of Variance, was used to determine the difference among the mean standard score of the students in each of the matched samples of students for the results on the Iowa Assessments. To assist in this process the scores from the reading, math, and science were converted to z-scores to allow for a more accurate comparison of the data. This same process, without the conversion to z-scores, was completed for the matched samples for the change in the students' unexcused absences. An *F* ratio was calculated with an alpha level of .05 to test the null hypothesis. *Post hoc* analyses were conducted to determine if there was a main effect significance. The office referrals were analyzed using a Chi-Square.

Conclusions

The following conclusions were drawn from the study for each of the five research questions used to analyze impact of involvement of students in TeamMates mentoring program compared to a matched sampling of students not in the school-based mentoring program.

Research Question #1

The first research question was used to analyze the impact that having a TeamMates mentor and meeting with him/her for a minimum of 16 meetings would have on a student's reading comprehension score based on the Iowa Assessments. In the analysis of the students' changes in their scores from the 2012-2013 school year's assessment to the results in the 2013-2014, in comparison to the matched sampling of students without a mentor, there was no statistically significant change in the data for the students with a mentor.

Research Question #2

The second research question was used to analyze the impact that having a TeamMates mentor and meeting with them for a minimum of 16 meetings would have on a student's mathematics score based on the Iowa Assessments. In the analysis of the students' changes in their scores from the 2012-2013 school year's assessment to the results in the 2013-2014, in comparison to the matched sampling of students without a mentor, there was no statistically significant change in the data for the students with a mentor.

Research Question #3

The third research question was used to analyze the impact that having a TeamMates mentor and meeting with them for a minimum of 16 meetings would have on a student's science score based on the Iowa Assessments. In the analysis of the students' changes in their scores from the 2012-2013 school year's assessment to the results in the 2013-2014, in comparison to the matched sampling of students without a mentor, there was no statistically significant change in the data for the students with a mentor.

Research Question #4

The fourth research question was used to analyze the impact that having a TeamMates mentor and meeting with them for a minimum of 16 meetings would have on a student's attendance. In the analysis of the students' change in their attendance from the 2012-2013 to the 2013-2014, in comparison to the matched sampling of students without a mentor, there was no statistically significant change in the data for the students with a mentor.

Research Question #5

The fifth research question was used to analyze the impact that having a TeamMates mentor and meeting with them for a minimum of 16 meetings would have on a student's office referrals for discipline issues. In the analysis of the students' change in their office referrals from the 2012-2013 to the number of referrals in the 2013-2014, in comparison to the matched sampling of students without a mentor, there was no statistically significant change in the data for the students with a mentor.

Implications for Research

Despite there being no statistical significance found in this study for the impact that a TeamMates mentor might have on a student's achievement indicators such as reading, math, science, attendance, and office referrals, we should not forget the research done by DuBois and others in their meta-analysis of the research related to school-based mentoring and published in 2002. This meta-analysis found that the effect size of school-based mentoring ranged from .14 to .18 or in 2011 when DuBois published the findings of a second meta-analysis and reported that the effect size of school-based mentoring was .21 (DuBois, et al., 2002 and DuBois, et al., 2011).

While research done by DuBois and others had a rather small effect size, it did show that school-based mentoring can have a statistically significant impact on students. In fact, it was (Wheeler et al., 2010) that discovered that there were six different outcomes from school-based mentoring that were advantageous to the mentee based on 95% confidence interval in which $p < .05$ and intervals that did not include zero. The reduction of truancy issues was the highest at .18, followed by a supportive non-familial adult relationship that had an effect size of .12. The mentees perceptions of their academic abilities or perceived scholastic efficacy was .10, school-related misconduct came in at .11, and peer support and absenteeism both had effect sizes of .07 (Wheeler, Keller, DuBois, 2010).

Future researchers should strongly consider the 2002 work of DuBois and co-authors in which they made recommendation for the youth mentoring program ‘best practices.’ In these recommendations they call for screening of mentors, pre-match training for mentors, matching for mentors and mentee based on at least one criteria, support for some structured activity during the meeting time with the mentee and mentor, on-going support training for the mentors, supervision of program and implementation, standard for frequency of contact, length of match relationship, and parental support (DuBois et al., 2002).

Studying the effects of a school-based mentoring program that meets all of the recommendations for the youth mentoring program ‘best practices’ by DuBois and ensuring that the implementation of the mentoring program was done with fidelity and met all of the recommendations of the program would be essential in ensuring a more accurate study for the implications of school-based mentoring on student achievement.

In addition, given the meager effect size from previous meta-analysis by DuBois and others, future researchers should give consideration to a pre-test and post-test qualitative component to assess the implications of school-based mentoring. A framework for this component could be similar to the one used by Portwood, Ayers, Kinnison, Waris, and Wise, in 2005, in which they used a matched control group study of a school-based mentoring program using a questionnaire compiled from 13 sources and pre and post-test design to assist in determining their targets to measure.

In addition to the student achievement data indicators previously mentioned throughout this study, such as attendance, office referrals, and academic indicators, future researchers should consider the additional data point of student involvement and participation in activities. This is a strong connection between a student's involvement in school sponsored activities and student achievement indicators.

Given the rather small sample size used in this study, it is this researcher's recommendation that future studies of the impact of the TeamMates mentoring program have a larger sample size to more accurately analyze the impact of the school-based mentoring program. Additionally, this recommendation for a larger sample size would apply to studies of other school-based mentoring programs also.

Implications for Practice

School-based mentoring programs, such as TeamMates, need to be viewed and utilized as a support and not an intervention. More specifically, school districts cannot have a practice in which the mentor-mentee matches are used as the main intervention to improve the mentee's school achievement data, but rather one that is used to support the student through a positive relationship with an adult.

Just like Dr. Tom Osborne stated about mentoring in his book, *Beyond the Final Score*, the mentor helps to provide three supports to the mentee, namely those of vision, unconditional care, and affirmation. Osborne has described this vision as helping the mentee see their future and making positive choices. When speaking of the unconditional care, Osborne will oftentimes reference agape love or positive support and love without conditions. Positive feedback is at the core of the affirmation to which Osborne is referring. The affirmation is at the core of the relationship that is developed between the mentee and the mentor. School districts should not underestimate the power that a school-based mentoring program can have on student's qualitative data such as his/her hope for the future and his/her feeling of self-worth that can come from unconditional care and affirmation.

Therefore, school-districts should not only measure and monitor the impact of the school-based mentoring program on the mentee's quantitative achievement indicators; they should also include measures and analysis of the qualitative impact the program is having on the mentee. In fact, it was Karcher in 2008 that researched a school-based mentoring program and discovered "positive main effects on two measures of self-reported self-esteem, on connectedness to peers, and on perceived social support from friends" (p.9).

In support of such an approach there was a mentor-mentee match from the school district in this study in which the mentee not only made significant gains in student achievement indicators, but more importantly in his hopes and plans for the future. These improvements and the bonds that were formed with his mentor were so positive that the local newspaper did a story on the changes he made academically. The story was about

the different adults in his life that have helped to mentor him away from a path of self-destruction during his freshmen and sophomore years to one in which during his senior year he has plans to go to college and recently signed his intent to attend. He will need to attend a community college because of the results of his poor academic performance in his freshmen and sophomore years; however, this is a significant change in his vision of not graduating high school to one of deciding which college to attend. One of the key factors in his success was the relationship that he developed with the different adults and mentors in his life. Their constant support and encouragement helped to provide him with hope and vision for his future, hope and vision that he lacked in his freshmen and sophomore years. It was at the end of his sophomore year that he was matched with a mentor. While he was also receiving numerous academic supports during this same time frame, it is apparent for this student that the combination of academic interventions and the support of a mentor were the right combination for hope, vision, and, eventually, success in his high school journey.

Just like in the story above, high school graduation is not a vision that is shared by all fragile or at-risk students, especially when they are not experiencing success in school. Chapman, Laird, and Kewal-Ramani (2010) found that the United States Dept. of Education National Center for Education Statistics published for 2007-2008 a national graduation rate at 73.9%. More recently the National Center for Education Statistics has indicated that in 2010 the graduation rate for public schools for the United States was 78.2%. It was in 2004 that Lehr, Johnson, Bremer, Cosio, and Thompson estimated that in the United States there is a high school dropout every nine minutes. What is even more alarming is the graduation rate of Caucasian to non-Caucasian students. In a review

of data from 2002 to 2010 based on the Education Week 2013 Diplomas Count report by Swanson, the report indicates that the eight years of data would show that Caucasian student graduation rates increased and ranged from roughly 73% to 78%, African-American increased and ranged from 48% to 57% and Latino graduation rates increased and ranged from roughly 52% to 57%, accounting for only a slight variance. While all groups showed an increase in the graduation rates, there is a significant difference in the overall rates and a dramatic difference between the Caucasian and non-Caucasian students. Just as alarming is the research from Forrest-Cataldi and Laird in 2007 in which students of low-income families were ten times more likely to drop out than a peer student in a high-income family.

Given the combination of the data related to graduation rates and dropouts, the implications related to low-income families for dropping out of school, Karcher's study of the positive influence of school-based mentoring for Latino students, and the need for all students to develop strong relationships at school to foster hope and vision, all school districts should consider a support such as school-based mentoring. Those schools, especially, that have several of the indicators mentioned such as low socio-economic status, high minority percentages, and below average graduation rates should consider such a support. For it is often the case that in such districts the personnel resources are stretched thin, and the support that could be provided from such programs as a school-based mentoring program would be that added support to impact that individual student and perhaps, as Dr. Osborne referenced, impact future generations from that individual mentee.

The relationship-based approach provided in the school-based mentoring program, like TeamMates from this study, help provide the ‘mortar to hold the bricks’ of academic support together for the fragile or at-risk student. As previously stated throughout this study, the fragile or at-risk student is oftentimes without hope or vision of his/her future, despite the academic supports provided by the school district. It is this combination of academic intervention and relational support that must be present for many students to change their behaviors and more importantly their hope and vision for the future. This relational approach and support using a school-based mentoring approach expands the school district’s pool of resources by reaching out to community members to help foster this support through a small portion of their time and attention each week or, in the case of the TeamMates mentoring program, one hour once per week. In addition the advantages of using an established program, such as the TeamMates program, that adheres to the ‘best practice’ recommendations from DuBois and others also helps to ensure that the efforts made by the district and the involved community members are more apt to have a positive impact on the mentee, ultimately helping to provide hope and vision of a high school diploma, but also plans and goals beyond high school. Such a practice also gives community members an entry point into schools to make a difference not only in the mentee that they work directly with, but also in the sphere of students that the mentee encounters and perhaps future generations.

One factor that school districts need to have in their practices is to ensure that the selection process for the mentee supports that of a student that needs a support and not an intervention. At-risk students that need a specific intervention for an academic deficiency and/or behavior issue will likely not be successful with only the support of a

mentor. The mentor helps to provide a relationship of a caring adult. The mentor, in most cases, does not have the background or the training to provide academic and/or behavioral interventions. Such prescribed interventions need to come from trained professionals. Furthermore, matching such an at-risk student needing such intervention(s) with an untrained mentor in a school-based mentoring program can lead to frustration within the match and a higher likelihood of the match being unsuccessful, which may result in the dissolution of the match. Such a situation can potentially cause more harm to an already at-risk student and leave the mentor feeling frustrated and, in some cases, like they have failed themselves.

Those who implement such practices need to keep in mind that the school-based mentoring program is a support for fragile students and not an intervention for at-risk students. This approach coupled with the research findings for ‘best practice’ school-based mentoring programs will help to ensure the successful implementation of the mentoring program as measured by quantitative data such as student achievement data and, possibly more importantly, by the qualitative data such as the students’ self-perception, hope, and vision for their future.

Implications for Policy

School districts will have many factors to consider if they are investigating or implementing a school-based mentoring program. The first and likely most critical component is that of the selection criteria of the school-based mentoring program or the creation of the school-based mentoring program. Either way, the school district must not ignore the findings from the 2002 work of DuBois and co-authors that led to the recommendations for the youth mentoring program ‘best practices.’ In these

recommendations they call for screening of mentors, pre-match training for mentors, matching for mentors and mentee based on at least one criteria, support for some structured activity during the meeting time with the mentee and mentor, on-going support training for the mentors, supervision of program and implementation, standard for frequency of contact, length of match relationship, and parental support (DuBois et al., 2002). Therefore, the school district's policy and practice should ensure that the aforementioned criteria are major factors in the selection or, in some cases, the development of the school-based mentoring program.

Secondly the district's policy should help to ensure that the practice of school-based mentors is implemented as a relational support and not a stand-alone intervention. This could be addressed in the requirements of the mission, purpose, and/or beliefs of the school-based mentoring program. The requirements of such statements would help to ensure that the implementation and practices related to the school-based mentoring program are kept in perspective to the effect size found in the review of research. Effect sizes previously mentioned are rather meager in comparison to other supports that would likely be implemented by the school district, such as academic interventions, for their fragile or at-risk students.

A third policy implication would be related to the selection practices of the mentee candidates for the school-based mentoring program. Given the previous policy recommendation was to ensure that the school district viewed the school-based mentoring program as a support and not an intervention, it would behoove the district to think about policy to help ensure the selection practices for mentees adhere to the support versus intervention approach. Such a policy requirement would not preclude a severe at-risk

student from involvement in the mentoring program, but would rather emphasize the selection and matching of fragile students, versus extreme at-risk students. This would help to honor the fact that the support is based upon relationship approach, rather than a behavioral intervention that a school might use with a more extreme at-risk student. This policy would focus the efforts of the program on those fragile students that might otherwise receive limited supports by the school because of the time and energy invested in the district's most at-risk student population. A support for this fragile student such as the school-based mentoring program may be just the nudge that is needed to keep the student on track to graduation and ultimately provide additional hope and vision for his/her future.

Lastly, a school district should adopt an approach in their policy recommendation for their school-based mentoring program that assesses the impact of the program through a balance of quantitative and qualitative data. To accurately measure the impact of such a program, consideration of a pre/post assessment format should be contained in the policy recommendation. The quantitative data should include those student achievement indicators associated with school success, such as attendance, discipline issues, and academic data. The qualitative data should have consideration for student's self-perception, hope, and vision for his/her future.

As DuBois and others stated in their 2011 research and findings related to their 'best practice' recommendations for school-based mentoring, "Overall, the model presented here suggests that when relationships with non-parental adults are experienced by youth as meaningful and supportive, they can serve as a catalyst for several intertwined developmental and interpersonal processes that, in turn, help young people to

both avoid problems and reach their full potential” (p.66). Despite the lack of statistically significant findings from this study, effective school-based mentoring programs have been proven to be one effective support for fragile students that help to provide hope and vision for their future. Such a support coupled with academic and/or behavior interventions can often lead to student success measured through their achievement indicators, graduation, and, ultimately, their plans and vision for their future.

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