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Impacts of Mentoring Program on At-Risk Students

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Impacts of Mentoring Program on At-Risk Students

A Dissertation
Submitted in Partial Fulfillment of the Requirements for the
Doctor of Education Degree
Murray State University

Melissa M. Judd
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ABSTRACT

Many middle school students are considered at-risk due to attendance, lower levels of academic achievement, and behavior referrals. Mentoring programs have been in effect for decades and continue to yield positive results. The purpose of the study is to determine if fourth and fifth grade at-risk students are impacted by mentoring. The researcher seeks to determine if mentoring increases students’ attendance, increases math and reading test scores, and decreases the amount of behavior referrals. Participants were compared to their own data using a pre-tests and post-tests. Attendance comparisons were made between Spring 2016 and Spring 2017 semesters. Math and reading iReady pre-tests were taken in Fall 2015, Winter 2016, Spring 2016, and Fall 2016. The pre-test scores were compared to the post-test scores taken in Spring 2017. Discipline referrals were compared between Fall 2016 and Spring 2017 semesters. The results indicated that mentoring had a strong statistical significance on student attendance. Significant differences were not discovered in the iReady test scores or in the decrease of discipline referrals.
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CHAPTER 1

INTRODUCTION

Context

At-risk students are found in most schools across the country (Beken, Williams, Combs, & Slate, 2008). At-risk is typically defined as students who struggle emotionally, physically, socially, and academically. Often they come from a low-socioeconomic background. Many educators are now required to instruct with rigor while using the Common Core State Standards. What happens when struggling students who typically start school with learning gaps are expected to learn at the pace of middle or upper class income students? These students fall short of the learning target, and the learning gaps continue to grow (Moore, Gallagher, & Bagin, 2008). The home environment may not have a strong support system or adults who are available to assist the students with homework or assignments (Lunenburg, 2000). Students cannot choose the environment in which they are born, but there is a way for schools to provide consistent, encouraging support through adults. Mentoring programs have the potential to reduce, or remove, the barriers that often lead to lower academic success.

Every child has value and needs to learn in ways that meet his or her needs (Moore, Gallagher, & Bagin, 2008). Teachers are not always able to spend significant amounts of time with struggling students. Due to the number of students for whom the teachers are accountable, meeting with all students daily and meeting all of their needs is virtually impossible. Struggling students become at-risk academically. They may also lack personal support systems for emotional well-being. At-risk students usually do not receive the attention needed to meet their emotional needs from the adults in their lives (Luneburg, 2000). As a result, at-risk students begin missing school to avoid the academic struggles they encounter. When they are present for school, some of these students display negative behavior to gain attention of any kind from the
teacher or peers (Balfanz, Herzog, & Mac Iver, 2007). Each of these paths has negative consequences. Missing instruction causes students to fall further behind, and they find it harder to catch up on material. Negative behavior hinders other students from learning and can cause the students displaying the unacceptable behavior to be removed from the classroom. Disciplinary time out of instructional time hinders the students from learning.

A plausible solution is to establish a mentoring program (Lunenburg, 2000). Community leaders from diverse entities were willing to devote time to provide emotional and academic support to at-risk students. Mentors provided encouraging support to students in an effort to edify self-confidence in academic endeavors. When adults invest time with students, a positive relationship that benefits both parties is formed. The mentor is motivated to help students in need, and the students have a consistent support that might not be present in the home environment (Lunenburg, 2000).

**Purpose of the Study**

Many students transition from school to school, resulting in gaps in their knowledge and application of content across the K-12 spectrum. Regardless of the diverse instructional methods, the wide sampling of qualified teachers, and updates in curriculum resources, some students continue to perform below grade level. Educational leaders use instructional methods, diverse teachers, and curricular methods on the targeted population of students who are underperforming in contrast to other students (Elias, White, & Stepney, 2014). Many of the under-performing students do not have consistent adult role models who encourage and support academic progress at home. Many of these students are also categorized as economically disadvantaged within their community. As students are promoted to a new grade level each
academic year, they continue to struggle academically, and they continually digress as standardized test scores reveal below-level performance.

Relationships, resources, and opportunities provided by community partnerships have a positive impact directly tied to students’ learning and achievement (Moore, Gallagher, & Bagin, 2008). Some school systems have a professional liaison in a public relations role, or they simply have no program outlined for community involvement. Various types of involvement would include but not be limited to, community partnerships, mentors for students in the school, resources given to extend learning, a secondary source of funding for special events, and public support for the school in the community. Nelson (2002) suggests that schools provide a method of encouragement to students by means of a necessary support system. Ralston, Hieb, and Rivoli (2013) reveal positive results linking community members, students, and the use of technology. The results implicate that the stronger the relationship between the mentor and students, the more students will desire to succeed in academic feats.

**Conceptual Framework**

A study for a mentor/mentee program for at-risk high school students was conducted by Diane de Anda (2001). The results of the mentoring program on the four students selected at random were all positive. All four students credited their positive academic and emotional growth to the mentor/mentee relationships. Further studies are encouraged to determine other areas of impact these relationships have on at-risk students.

More than 90% of mentor and mentee participants stated that mentor/mentee relationships positively shaped their view of themselves and of the time spent in mentor/mentee meaningful relationships (Grineski, 2009). His research also showed that the majority of his students chose to participate in the program, thereby taking the students away from harmful
situations on the streets within the community. The students saw positive role models who encouraged them and challenged their critical-thinking and complex problem-solving skills.

**Research Questions and Hypotheses**

1) Is there a significant difference in the attendance rate of the students who participated in the mentoring program from the spring semester of the previous year to the spring semester of the current year?

2) Is there a significant difference in the iReady standardized testing data in reading and math from the students’ pre-test scores to post-test scores after participating in the mentoring program?

3) Is there a significant difference in the number of discipline referrals as the mentoring relationships strengthened from the first semester to the second semester?

The null hypothesis was that a mentoring program had no effect on achievement, attendance, or behavior. The researcher alternately hypothesized that the relationship between mentors and mentees has positive effects on attendance, standardized test scores, and behavior as relationships strengthened.

**Scope and Bounds**

The middle school being studied is part of a rural educational system comprised of three elementary schools, one middle school, one junior high school, and one high school. The middle school is the specific focus of this study. It educates fourth and fifth grade students in the district.

The middle school is currently undergoing changes, along with all schools across the state of Tennessee, implementing new learning standards and new comprehensive, grade-level assessments. Due to the current curricular changes and learning expectations for students,
community involvement is a crucial element in promoting growth and preparation for college and career readiness under TN Ready Standards and Common Core State Standards. All educational leaders have a special role in contacting, establishing, and implementing strategies with community entities to build collaborative partnerships. Approximately 49% of the total school population has been identified as at-risk. At-risk in this study refers to students who are academically performing one or more grade levels below their current grade placement and have absences and discipline referrals in addition. This study seeks to determine if the mentoring program had a significant impact on students’ achievement, attendance, and behavior.

**Significance of the Study**

The findings of this study will benefit society by showing that adult/child relationships are important and have profound impacts in the education of students. At-risk students continue to be individuals who most likely do not have positive support relationships from adults in their lives. Thus, school leaders who implement mentor/mentee programs for at-risk students in their schools will exemplify the power of impact that relationships from community leaders have on students’ performance academically and behaviorally. The findings of this study will help the researcher determine specific areas of mentor/mentee relationships that change as the relationships strengthen from the first semester to the completion of the second semester of the academic year. Therefore, specific challenges faced by at-risk students will show impacts of the mentoring program and how the positive adult role models investing time in at-risk students consistently can decrease these challenges.
Definitions, Symbols, Abbreviations, Nomenclature

Public relations – “the activity or job of providing information about a particular person or organization to the public so that people will regard that person or organization in a favorable way” (Merriam-Webster, 2015). It is also referred to in this paper as community relations.

Instructional leader – a person within a school who serves as the leader or administrator and makes executive decisions on behalf of all constituents.

School relations – communication between school and community.

Stakeholders – anyone inside or outside of the education system who is involved with learning (e.g. parents, leaders, students, community members)

ISLLC standards – Interstate School Leaders Licensure Consortium that outlines and defines specific standards that school leaders are accountable for upholding.

School partnerships – local community entities that join with schools to provide students with potential for learning by providing special services, support, and active engagement in students and school activities.

Accountability – “an obligation or willingness to accept responsibility or to account for one's actions” (Merriam-Webster, 2015).

Collaboration – “to work with another person or group in order to achieve or do something” (Merriam-Webster, 2015).

Entity – “something that exists by itself” (Merriam-Webster, 2015).

At-risk – students who are academically performing one or more grade levels below their current grade placement.

Slightly at-risk – students who have a median average of one grade level below current grade level in reading and math according to the iReady test.
**Moderately at-risk** – students who have a median average of two grade levels below current grade level in reading and Math according to the iReady test.

**Significantly at-risk** – students who have a median average of three or more grade levels below current grade level in reading and Math according to the iReady test.

**ELA** – English Language Arts. ELA consists of all reading and language educational standards.

**CCSS** – Common Core State Standards that consist of ELA and math skill expectations.

**TN Ready standards** - Tennessee’s instructional and learning standards that are comparable to the Common Core State Standards.

**Summary**

Students need positive adult role models to help encourage and guide them as they develop into lifelong learners. When students are considered to be at-risk, mentoring relationships can provide the support needed to increase students’ confidence and work ethic. Students are more likely to progress academically when positive relationships are cultivated over time. This study seeks to determine the depth of effectiveness mentoring relationships have on at-risk students in attendance, behavior, and standardized test scores over the course of one academic year.
CHAPTER 2

LITERATURE REVIEW

Instructional Leader and School Culture

A positive school community is needed for a community to be beneficial. Monitoring students’ learning in the classroom regularly emphasizes to students the importance of the learning process and assures that effective learning is taking place (Shaver, 2004). Shaver (2004) also states that the collection and analysis of data gives necessary information to make the best decisions on programming professional development. Past research suggests the principal’s role on school and students’ achievement is reflective of the principal’s vision (Cotton, 2003). Putting children first as an administrator means mentoring staff, implementing programs and procedures, taking care of discipline and school safety, managing budgets, planning for professional development, and involving parents and community members (Shaver, 2004).

Planning, implementation, and reflection are relevant components to instructional improvement within professional learning communities (Copland & Knapp, 2006). An instructional leader guides an institution toward a vision of improving students’ achievement. Stress, performance expectations, morale, teacher turnover, and lack of understanding cause teachers to resist progressing toward a true learning community (Copland & Knapp, 2006). Instructional leaders should always balance the pressure and demands on teachers with encouragement to continue toward the school’s vision and goals (Langer, Colton, & Goff, 2003).

Instructional Leader’s Role in Partnerships

Principals and teachers need to formally evaluate the needs of students and the school. Partnerships are only beneficial if needs are being met by all participants (Hands, 2005). A school representative who contacts a community entity requesting support for the school and
students should also state what the school can do for the entity. Partnerships should be a two-way street. Discussing needs of both groups is vital to the beginning of a successful relationship as partners in education. Negotiation of terms and activities should be clearly discussed until all parties come to an agreement. Understanding the needs of all is the foundation of successful partnerships. As needs change, the relationship should adapt to meet the current needs (Hands, 2005).

Networking plays a large role in building partnerships. People find it hard to say “No” when asked for assistance by someone familiar to them to volunteer or make donations. Over time, word of mouth will spread through a community, and opportunities to establish partnerships will arise that were not as likely during the beginning stages. Networking in the community will bring about resources that have not surfaced prior to forming partnerships (Hands, 2005).

**Teachers’ Roles in Partnerships**

“Teachers play a powerful role in the success or failure of communications between schools and the homes and families they serve…By being a patient listener and a welcoming communicator, a teacher can be an important catalyst in creating strong working relations between schools and those in the community” (Moore, Gallagher, & Bagin, 2008, pp. 124-125). Just as teachers must differentiate instruction, they must also differentiate communication (Tomlinson & Allan, 2000). Developing relationships to make a sound community comes with two characteristics for teachers and instructional leaders: personal and political. This task is personal to allow needed connections among all involved members, and it is political to create coalitions open to diverse thinking and decision-making (Copland & Knapp, 2006). Copland
and Knapp (2006) also state that three types of environments either enable or hinder teaching and learning: family and community, professional, and larger policy.

Teachers must provide opportunities for students’ growth and achievement (Reed, 2009). When parents and other stakeholders view students’ programs and attend accomplishment ceremonies, pride is taken in the local educational institution, and parent opinions are shared with other public stakeholders (Moore, Gallagher, & Bagin, 2008). Opportunities, funding, and achievement occur that may never have been provided otherwise as more of the general public become involved in students’ activities. Jones (2011) states that teachers may even need training as a district on parent involvement and how best to incorporate parents into the learning community.

Teachers have a unique benefit because they know how students learn and which individual students’ needs should be addressed (Wiggins & McTighe, 2007). Because of community involvement and teacher leadership, the members of a community establish and share a sense of pride, feeling as if their contribution has impacted students for good (Moore, Gallagher, & Bagin, 2008). School and district leaders tend to show more educational gains when they collaborate with the community and gain assistance from outside stakeholders (Copland & Knapp, 2006).

Teachers have the potential to serve as a valuable tool for students in the teachers’ willingness to take risks. Many teachers are willing to challenge their own learning; therefore, they are willing to try new instructional methods to challenge students’ thinking. Lehman, Kim, and Harris (2014) discovered positive results among teachers who were willing to implement a new engineering curriculum to the already-existing STEM curriculum. Teachers initially struggled with the background knowledge of the topic but were able to implement a new
approach to STEM education with the support and mentoring of university faculty. Students were exposed to new challenges, new structures, and new ways of problem-solving due to teachers’ willingness to incorporate this new piece of curriculum (Lehman, Kim, & Harris, 2014).

Students need mentors at each educational stage of development and in their careers (Schoper, 2017). Many students progress through each stage due to support from families or mentors. Students often advance to higher education and realize how much a mentor is needed to encourage pathways to success. Educators oftentimes serve as mentors, especially when working with diverse populations and students away from home. Many students who graduated from college chose to return serving as mentors at the same higher education institution. They provided others with the support that was bestowed upon them as students. For students who did not have a mentor in any of the educational stages, many of them chose to serve as a mentor providing current students with support that was once needed in their own educational feats (Schoper, 2017).

**Parents’ Roles in Partnerships**

Active parents who serve on panels or who find a way to be involved in a child’s education fulfill a desperate need of schools, teachers, and students (Littky & Grabelle, 2004). According to Devine (2004), parents empower children to further education and reach educational and professional successes. School should be a place where all stakeholders share a mutual sense of purpose (Dorn, Shircliffe, & Cobb-Roberts, 2006). Parents who simply encourage and support the value of education profoundly influence children to set goals, rise to challenges, and continue lifelong learning (Sheldon & Epstein, 2005).
Parents may not realize that involvement can be simple and within the home. For instance, reading a story before a child’s bedtime is active participation (Danielson, 2006). Students with low achievement are sometimes looked upon as failures. “Failure is part of learning and life, but continual failure in the face of overwhelming odds breeds cynicism and despair; not self-direction” (Buell, 2003, p. 135).

Parental involvement can often be the deciding factor in achievement and optimal success. Each form of involvement has distinct effects on achievement. No one form of parental involvement will bring about the ultimate solution. It is important, however, to recognize this concept and to research ways to aid in future dealings with parents (Sheldon and Epstein, 2005). When parents understand the power of their influence on the learning process, students will demonstrate a clearer sense of their role throughout the learning process (Hoover-Dempsey, et al., 2001).

Coleman and McNeese (2009) state that parental involvement is something most parents can do regardless of race, income, occupation, or culture. Parents are considered to be teachers and mediators of the school climate. Children see their parents as the standard for learning showing the power of parental influence on a child’s views and acceptance of learning (Konzal & Dodd, 2002). Some families may need training and formal guidance on how to be more involved, help with homework, and motivate students for higher learning (Bailey, 2006). Sheldon and Epstein (2005) go a step further in saying that achievement relies heavily on parental involvement. To implement best practices of involvement means to reach out to the parents and families who are sometimes the hardest to reach. It is also important not to put too much pressure on parental involvement since stresses in parents can negatively impact achievement.
Copland and Knapp (2006) give further suggestions on meeting the needs of families and not just students. Parents and other community members are provided with educational opportunities and courses that align with the focus on students’ opportunities toward higher achievement. Family involvement promotes and sustains students’ achievement by providing a system that values education and enduring challenging situations or content (Littky & Grabelle, 2004). The more a family is involved with the school, the more learning and higher achievement rates will occur (Machen, Wilson, & Notar, 2005). Participants and resources conjunctively working signify where the work and shared values flow in both directions between the educational systems and the community stakeholders (Copland & Knapp, 2006).

**Partners in Education**

In order to create strong, positive partnerships between schools and the community, all participants must work together to establish common goals and strategies of implementation (Gordon and Louis, 2009). It takes time to develop and maintain lasting relationships among networks of people (Gereluk, 2006). The key element for successful community collaboration between stakeholders is for the needs of all to be met (Lueder, 2006). Partnerships will diminish shortly after establishment if some needs are met and others are not. Each group of constituents must have continual action and involvement in order to provide optimal success in achievement (DePlanty, Coulter-Kern, & Duchane, 2007). Moore, Gallagher, and Bagin (2008) explain that communication between schools and the community promotes opportunities for valued support shared ownership of community needs and education. Partnerships are more than keeping stakeholders informed. They are an integral part of the development of all individuals and the community as a whole.
Partnerships should actively work toward the benefit of all stakeholders (Danielson, 2006). The surrounding community entities can be the biggest supporters or the worst critics of an educational institution. Therefore, a current critic could become an important ally with involvement in planning and implementing strategies for change and improvements (Copland & Knapp, 2006). With knowledge and expertise in developed programs, teachers have an extra advantage on how to best seek out meeting needs of students, parents, and educators (Danielson, 2006). The community must break down its silos and come together to strengthen relationships.

The job of educating children is far too difficult if it is only done by teachers (Hartop, Kelly, McCully, O’Connor, & Smith, 2006). Schools, parents, and community members must contribute to form a team striving for success. School must overcome their own resistance to change (Wiggins & McTighe, 2007). Instructional leaders are expected to include these parties in decision-making, and this occurs by creating advisory councils and other similar committees (Gupton, 2010). These councils work toward solving problems within the school, finding the resources to implement solutions, and gathering ideas to help the school. All stakeholders have a voice that must be heard (Salomone, 2000). When public relationships are formed, stakeholders have a sense of purpose to contribute to education while students learn how to be productive members of society (Kantanen, 2007).

Gupton (2010) states that all communities have the shared desire for all local students to excel academically and develop skills to promote future successes. Parent and community involvement is shown to have a direct link to achievement (Henderson & Mapp, 2002). Authentic relationships between community leaders and students provide support and external resources for students to interact and gain valuable experiences in their community (Frazier & Sterling, 2006). Because of strong collaborative partnerships, students have the potential to
extend learning about specific problem-solving situations as students’ projects and examples are created (DePlanty, Coulter-Kern, & Duchane, 2007).

**Government Influences**

Government policy-makers have difficulty determining and implementing appropriate policies to positively impact academic achievement. Because of continual reform and contrasting locations of schools, lawmakers cannot set one standard for all and meet the needs of all (Harris, 2008). Differentiated learning needs can sometimes only be met by patrons who are within the location of schools. No perfect equation of success fits every child (Littky & Grabelle, 2004). Community partners have an advantage in aiding educational reform because of location and direct involvement. While lawmakers seek the best solution for all schools, community partnerships in each specific location seek to meet the needs of schools, thereby meeting the needs of students (Harris, 2008). Everyone in the community has an effect on his or her local education system. Positive changes may occur with deeper involvement.

**Socioeconomic Status**

Carswell, Hanlon, O’Grady, Watts, and Pothong (2009) studied a preventive intervention program for African-American youth who were attending an alternative education program. The African-American students had records of disciplinary difficulties in the general education school setting and had to be moved to an alternative setting to help them and others learn. The intervention program was designed to provide an opportunity to improve behavior concerns and promote healthy lifestyle patterns.

As the researchers looked into the students’ demographic information they found a common theme of low socioeconomic status (Carswell, et al., 2009). Each of the eligible students faced similar income and community resource difficulties. The majority of the
participants’ families also had family members in the household who had records of violence and gang-related activity. The researchers began a mentoring program where groups of students met with young adult mentors five days a week for three hours each time. The program was not concluded to be effective when implemented this way because students disrupted the group discussion or threatened other group members. The researchers recommended smaller groups or one-on-one sessions with participants.

Another study looked at adolescents in foster care who participated in a mentoring program. The mentors were professionals in the local community. The participants were familiar with mentoring relationships based on family situations and life transitions. Many foster care children chose not to pursue higher education, but instead, turned to substance abuse, early parenthood, or had been incarcerated in the juvenile justice system. Twenty-seven participants were paired with a mentor. The mentor-mentee relationships that focused on future careers, higher education or vocational training yielded more positive results than the relationships that did not frequently discuss these topics. The students who had guidance for future endeavors from their mentors reported during focus group interviews that they had more career options, beneficial resources, and contacts in the community to assist in adulthood transitions (Hudson, 2013).

**Academic Deficits**

Chambers, Hylen, and Schreiber (2006) considered students at-risk if they met the following: students who had low socioeconomic status, demonstrated low self-esteem and behavior challenges, and had records of low academic achievement. Students who met one of the risk factors were considered the lowest risk group. Students who met two of the risk factors
were identified as the middle risk group. Therefore, students who met three or more of the risk factors were considered the highest risk group.

The mentors were parents, peers, teachers and counselors where students attended school. The mentors met individually with an assigned student to discuss academic goals and achievements throughout the school year. The results showed that students who met with a parent or peer mentor more frequently showed more academic growth than students who met with a teacher or counselor mentor. Students who had a consistent mentor and met weekly with their mentor showed the most significance in academic growth at the conclusion of the study (Chambers, Hylen, & Schreiber, 2006).

**Discipline**

McIntosh, Frank, and Spaulding (2010) conducted a study of students in grades K-6 from 2,509 schools in the United States. A total of 990,908 participants were represented in the study. Each school used an office discipline referral form and computer software to track students’ behavior referrals over the course of one academic year. Students were grouped into categories based on the average number of referrals each had received in the year prior to the study. Students who had received an average of one referral were in the first category. Students who had received an average of two to five referrals comprised the second category. Students who had received six or more referrals were in the third category.

The results showed that behavior challenges in every grade at each school within the data set progressed from the fall semester to the spring semester. The highest number of referrals in each category was in April. The researchers suggested that schools implement strategies in the fall semester to provide incentives to motivate positive behavior throughout the school year. They concluded that educators should respond by providing intervention to support students.
Ferguson (2000) echoes the need for intervention support to at-risk students in multiple forms. Students who had a consistent, positive adult role model consistently showed higher gains on standardized tests, were accepted into postsecondary programs, and were successful in finding employment compared to their counterparts.

Converse and Lignugaris-Kraft (2009) sought to determine if a mentoring program for 34 at-risk students in grades 6 through 8 would improve behavior, attendance and attitude while at school. Mentors received formal training and were required to document each meeting with a mentee. Mentors met with mentees individually once a week for 18 weeks. The study began in the third quarter of the school year and lasted until the end of the fourth quarter. Mentors ate and played games with their mentees during scheduled meetings. By the end of the fourth quarter of the school year, results indicated that all students who received consistent mentoring over the 18-week period showed statistical significance. They showed significant improvements in their attendance rates and in fewer reported discipline referrals.

Dawes and Dawes (2005) discussed a mentoring program designed and implemented for adolescents with a record of offenses in the criminal justice system. The adolescents who participated in the detention center’s mentoring program had fewer discipline referrals and higher self-esteem upon the conclusion of the program than those who did not participate. Dawes and Dawes (2005) realized through the concluding focus group interviews that the adolescents felt more confident in future opportunities beyond high school; however, the youth did not feel that they had substantial assistance when seeking employment, finding a residence, or finding appropriate training. The researchers felt that the adolescents needed to have access to their mentors to aid in the transition of becoming an active, self-sufficient member within the community.
La Valle (2015) compared five mentoring programs that focused on students who internalized and externalized behaviors in addition to having parents experiencing parenting stress. Parents who were receiving clinical forms of therapy seemed to struggle with parenting children who demonstrated similar behavior tendencies. Studies where students were involved with group mentoring sessions of 2-5 mentors and up to 8 students showed greater positive results with internalizing and externalizing behavior than those who met one-on-one. Children who improved behaviorally also affected improvements in their parents in relation to parenting and stress.

**Students in the Middle Grades**

Balfanz, Herzog, and Mac Iver (2007) conducted a study of middle school students from an urban setting who were categorized as low socioeconomic status and had failing grades with a number of absences from school. Their study targeted students who were failing at least one course, had several absences from school, lived in a low socioeconomic area, and had discipline referrals on record. This particular study suggested that students from high-poverty areas suffer a higher risk of disengagement in the academic setting during the middle school years. Students during the early adolescent years are very impressionable and will determine the course of direction for their education during this stage of development. The researchers suggest that schools develop and implement early warning systems to identify students at risk of dropping out and becoming disengaged at school.

Lampley and Johnson (2010) performed a study using a mentoring program to assist students who struggled with attendance, behavior, and academic achievement. Mentors were employees within the school who spent about thirty minutes twice a week with an identified student over the course of two academic years. Over 90% of the participants showed significant
growth in all three categories from the beginning of the first year to the end of the second year. Mentors can be seen as positive change agents for at-risk students. Students tend to show gains when adults invest time and model problem-solving procedures (Martin & Dowson, 2009). “Failure is no longer an option because the emphasis is placed on the process itself, and formative assessments become seamless parts of the learning process” (Springer, 2009, p. 25).

Sale, Weil, and Kryah (2012) implemented a program in St. Louis, Missouri, for at-risk students. These students were from single-parent homes; experienced behavior management difficulties during the school day; qualified for free or reduced lunch; had a family history of at least one parent who had been incarcerated for violence or substance abuse; reported a lack of supervision at home after school hours, and were referred by educators due to the displayed low academic performance based on results of state standardized testing. All mentors were licensed clinical social workers or Master’s level interns under the supervision of a licensed professional working with the program. The mentors received specific, intensive training to positively provide opportunities for coping and survival skills in the areas where students lived and attended school.

The Promoting Responsibility through Education and Preparation (PREP) program was implemented under the leadership of clinical social workers (Sale, Weil, & Kyrah, 2012). The study sought to determine the PREP program’s effectiveness on fourth and fifth grade youth in an area known for high crime rates. Social workers used the list of students who were referred by educators and made home visits to best determine the highest at-risk students in need of intervention services. Students were categorized into risk groups. Students who qualified based on three or more of the listed factors were invited to participate first. The social workers placed 20 to 25 students into a cohort. The activities consisted of a cooking class hosted by local
restaurant chefs, yoga classes with a certified yoga instructor, art projects and social skills using a life skills training curriculum by certified social workers in this particular curriculum. The program occurred upon conclusion of a school day for two hours a day, four days a week for ten weeks. Students who participated in the cohorts receiving approximately 85 hours of mentoring showed significant improvements compared to prior cohorts receiving 54-60 hours. The researchers concluded that the PREP mentoring program was effective when they offered the extended time with mentors.

Weiler, Haddock, Zimmerman, Henry, Krafchick, and Youngblade (2015) implemented a mentoring program for students ages 11 to 18 to examine if mentoring relationships had a positive effect on students with substance abuse reports and behavior difficulties. The study was conducted in two terms: fall, from June through August, and spring, from November through January. Students who participated in the mentoring program showed improvement from the use of marijuana and lower reports of discipline problems. Weiler, et al. (2015) suggested that consistent, structured mentoring between an adult and child had a positive correlation to the improvement in behavior and individual choices of students.

**Mentor/Mentee Relationships**

Students need connections to engage in a topic of study or in social relationships. Some students possess the motivation to learn about diverse topics, individual skill sets, multiple forms of literature, and social skills through meaningful connections with mentors (Moore, 2013). Mentors connect with mentees by getting to know the mentees’ academic, extra-curricular, social, and areas of interest. Sondergeld, Johnson, and Walten (2016) conducted a research study which resulted in mentors and students sharing a similar perception of success through the connections made through the mentor/mentee relationship. Successful relationships take time.
There is not a specific number of the amount of time required to build strong connections, but the key is making the relationships a priority. Whether mentors and mentees meet once a week, once a month, during the school day or after the school day, consistency is vital to success.

Nichols, Spang, and Padron (2005) discovered that a valuable component to succeeding with students was first to build partnerships with the teachers. University personnel paired with K-12 teachers began training and establishing the goals and expectations with technology that would be incorporated into the mentor/mentee program between community stakeholders and students. Teachers showed a more supportive role by acquiring the knowledge and opportunity to engage in technology initiatives beforehand. The more positively the teachers viewed the mentoring program, the better students viewed the mentoring program throughout each stage of implementation.

A study was conducted among elementary students in grades K-5 who had difficulties in reading skills. The local university paired pre-service teachers with at-risk students to allow application of skills for university students in training. Elementary students were expected to make significant levels of growth in all areas of reading development. Having a mentor familiar with the necessary skills allowed elementary students to receive additional support after school to decrease the reading gaps existing in the elementary school data. The mentors met over a 10-week period for one hour, one day a week tutoring students with reading skill deficits. The quantitative results did not show statistical significance. However, the qualitative results did show improvement in relationships and social maturity, which was relative to one of the goals of the program (Leal, Johanson, Toth, & Huang, 2004).

King, Vidourek, Davis, and McClellan (2002) conducted a study identifying fourth grade students in one demographic area who needed assistance with social and academic skills and had
symptoms of depression and low self-esteem. Over the course of four months, community mentors ranging from high school age to senior citizens met with students one-on-one for an hour and a half, one day a week. Mentors and mentees shared a journal throughout the program. One week the mentor would write a question for the mentee, and the mentee would write his or her answer and a question for the mentor. This continued each time the pair met. At each meeting, all four goals of the program were addressed in equal time increments. Twenty out of 28 students progressed at least one letter grade in a subject from pre- to post-testing. The pre- and post-test surveys indicated positive changes in social and emotional areas, as well.

Frels and Onwuegbuzie (2012) conducted a study consisting of 11 mentors and students over a two-year period. Students in grades one through five were selected to participate based on at-risk criteria. Each student maintained the same mentor for both years of the mentoring program and met once a week. Commonalities among the interviews revealed similar themes in the mentoring relationships. The results of the study suggested that consistent mentoring between at-risk students and committed mentors was effective.

**Mentor Investments of Time and Relationship**

Haddock, Weiler, Krafchick, Zimmerman, McClure, and Rudisill (2013) discovered benefits through reflections of mentors. The mentors felt as if they were given a new sense of purpose, and the reflections showed that the mentors were more productive and optimistic in their professional workplaces. When mentors committed to diligently spending time on a regular basis with an at-risk child, the mentors developed a grounded sense of poverty, awareness of the community, and resilience of students through challenging situations (Shepard, 2009).

Broussard, Mosley-Howard, and Roychoudhury (2006) also recruited youth advocates in a low socioeconomic urban area to mentor students in grades 3-12 located in the same school
district over the course of one academic year. The results of the mentoring program revealed that students’ academic grades improved, behavioral challenges decreased, and participation in negative activities after school decreased. However, the most challenging factor that mentors, students, and parents voiced was the lack of consistent time spent during the mentoring program. The researchers concluded that the more consistent time at-risk students can spend with a positive adult mentor, the higher the growth and progress may occur in areas regarding the participants’ academics, behavior, and extra-curricular choices.

Anderson (2007) conducted a three-year study of African-American males with disabilities in grades K-8. The participants’ academic results after implementation of a mentoring program comprised of African-American male community mentors were compared to those without disabilities or participation in the mentoring program. The data from the first two years of mentoring relationships yielded similar results to their counterparts. However, during the third year of implementation, a specific focus of time spent in face-to-face mentoring was considered. Students with disabilities in the mentoring program showed higher academic levels and gains than students without disabilities.

**Outcomes for Students**

Interactions between community leaders and students fostered growth, provided outlets for learning experiences and opportunities to meet needs of others, and established a mutual trust (Hands, 2005). Partnerships enhance a focus on responsible character development among all types of students. Students are given long-lasting opportunities for success due to activities provided by partnerships with community members. Activities performed with a direct correlation to achievement demonstrate a connected relationship which has the potential to yield positive results for all (Garner, 2002).
Hands’ (2005) research states that students were able to use networking with community partners when jobs were being sought years later. This in turn shows that investing time and resources in the lives of children will allow these students to learn how to give back to the community as they grow into adulthood, reciprocating what was instilled at an early age. Fullan and Watson (2000) conclude that camaraderie between community partners and students promotes positive results in achievement.

Students receive opportunities that can only be successful with community willingness and participation. Service learning is an excellent example of meeting specific needs that tie directly to students’ academic achievement and school success (Smith, J. 2003). Service learning opportunities give students a better knowledge and understanding of the surrounding communities and its needs. They also help students become aware of personal and social responsibilities within the community (Obeidat & Al-Hassan, 2009).

Glomb, Buckley, Minskoff, and Rogers (2006) began a mentoring program for children with attention deficit hyperactive disorder (ADHD) and learning disabilities. Students who were at-risk were typically identified due to social factors in their family, challenging behaviors, limited resources, and struggling to meet academic expectations. Glomb et al. (2006) discussed a mentoring program that consisted of students aged 6 to 18. After a semester of mentoring sessions occurring for an hour once a week, students were interviewed to review perceptions at each age range. Students between the ages of 6 and 8 reported some improvements to their academic performance and in their overall outlook on school. The most significant improvements in academic achievements were from students between the ages of 9 and 12. The students in this age range described more confidence in academic challenges, social activities,
and individual abilities after participating in the mentoring program. The authors suggested that students aged 9-12 benefit the most from mentoring relationships.

Freeley and Hanzelka (2009) discuss a program opportunity given to high school students to help with individual student struggles in academics. This particular program consisted of a team for all identified students. This team included each student, coordinator, teacher, parent, counselor, and community partner. The team devised a plan for the student to follow, and the same team evaluated the student’s performance at the conclusion of the project or activity. Students went into the community to learn and create projects where their academics needed strengthening. Various entities within the community allowed students to work alongside employees to give further practice and depth for learning application and mastery. Students participating in this program continue to make significant growth in their academic needs.

Burbank and Hunter (2008) discuss a model plan for all stakeholders to utilize. This model had the goals of helping better educate students, enlighten parents about strategies to help children, and integrate more culture and diversity with community partners. Because of growing populations, communities are a mixture of many backgrounds, languages, and cultures. The researchers share a series of training sessions to aid parents in the education system, show resources available for use, and break down barriers between cultural differences in the community. Because of the involvement of all stakeholders, benefits of the training series were innumerable. When all members agree and work together, goals are accomplished, and everyone triumphs. Burbank and Hunter (2008) state that the training series will continue with deeper sessions of knowledge to best meet the needs of all in the community.

Bodilly, Chun, Ikemoto, and Stockly (2004) state that collaboration between school and community allows for coherence and brings a new level of stature to the community.
Collaborative efforts take time to develop and work efficiently (Bodilly, et al., 2004). Schools are one part of a community where all stakeholders should be aware of the growing need and share responsibility for growth and development (Gereluk, 2006). Schools and communities in collaboration show progress at different levels. The two most important goals are promoting collaboration and involving all stakeholders in collaboration (Bodilly, et al., 2004).

Bodilly, Chun, Ikemoto, and Stockly (2004) discuss three levels of working between organizations: networking, cooperative partnerships, and collaboration. Networking is only information being shared between school and community groups. Cooperative groups demonstrate application of shared beliefs and results. The third and highest level is known as collaboration. Collaboration implies working together with shared accountability. The responsibility is shared equally among all constituents instead of only in schools.

Networking, establishing mutual goals, sharing data, and joint decision-making must be present to have an effective partnership between schools and communities (Bodilly, Chun, Ikemoto, & Stockly, 2004). Key factors in determining successful partnerships are stability of relations and active involvement over time. The researchers share a four-step model to show progress within collaboration of schools and communities. Level one is strictly a planning phase. Initially, planning is done when partnerships are established and meeting during the early stages of collaboration. The second level is piloting. Parents, teachers, students, instructional leaders, and community leaders come together to form goals and an action plan to meet diverse needs of the school and community. The third level is implementing. All stakeholders implement each element in the action plan to measure success and growth status. The final stage is expanding. Districts adopt or make policies to support action plans and activities defined therein. Forming committees and councils to aid in decision-making for schools is extremely
important. Brosky, Jr., Wiegand, Bartlett, and Idlewine (2010) discuss how the public contributes to the schools, and the schools, in turn, contribute trained and successful students back to the public.

Brosky, Jr. et al. (2010) share findings of a partnership study involving physical therapy students at a local university and a public high school in the same town. Physical therapy students partnered with the local high school to review policies with school leaders on exercise and health activities offered to students. The university students participated in service-learning opportunities within the local high school to assist in policy review, program design and implementation, and mentoring of high school students regarding healthy lifestyle choices. All constituents involved participated in focus group interviews at the conclusion of the study. All information suggested that the partnership was beneficial in creating community involvement, service-learning, and opportunities to assist high school students with positive lifestyle choices prior to adulthood.

Lampley and Johnson (2010) conducted a study of middle school at-risk students based on attendance, discipline, and academic achievement. Each student’s post-testing data was compared to his or her own pre-testing data. Results revealed statistical significance in all three areas of the study. Among the participants, 49 of the 54 students showed statistically significant improvements in attendance, behavior, and academic achievement from the first year to the conclusion of the second year. The overall research findings suggested that consistent mentoring from a caring adult had profound effects on at-risk students.

Caldarella, Adams, Valentine, and Young (2009) implemented a mentoring program for elementary school students who were considered at-risk for emotional and behavioral disorders at their stages of development. The sessions occurred at least once a week from December
through May. Some mentors visited twice per week, but most came just once per week. Upon conclusion of the mentoring program, students, parents, teachers, and mentors gave positive feedback about the mentoring program. The data analysis revealed that statistical significance was found in academic improvements, school attendance, and emotional support services. Negative social behaviors decreased, and parental feedback of each child’s behavior showed that mentoring had positive effects on students’ emotional and behavioral challenges in the elementary grades.

**Benefits and Steps to Partnerships**

Any entity can be a partner in education. Price (2008) provides steps throughout the establishment and continuation of partnerships in the summarized list below:

- Be flexible.
- Provide clear objectives.
- Plan for short and long-term needs.
- Seek to enlist the local community.
- Establish and nurture relationships.
- Delegate to necessary committees.
- Involve students in decision-making.
- Reflect to ensure purpose is for children.
- Take risks when needed.

Partnerships bring a whole new element to the education of children of all ages. Society teaches the importance of children by becoming and staying actively involved in learning. When students feel encouraged and supported by others, motivation drastically increases, therefore leading to increased academic achievement (Checkley, 2006). “… [E]ach student is worth every
moment of anticipation, challenge, engagement, disillusionment, and rejuvenation” (Gruwell & Quindlen, 2009, p. 135).

Marzano, Pickering, and Pollock (2001) have come to some generalizations about students’ achievement: a) Not all students recognize the relevance in effort. b) Students can transform their beliefs to an emphasis on the satisfaction of hard work. Tucker and Stronge (2005) discuss one primary method of measuring and improving academic performance. This method is used in Tennessee, and it is called the Tennessee Value-Added Assessment System (TVAAS). Data provided in this method determines quality and effectiveness in instruction across the state. All schools and teachers are accountable for data through testing and growth gains or losses. These scores are used to follow students over multiple years of schooling. The scores also help instructional leaders make necessary changes in schools to advance improvements in learning and to aid in professional development and individual teacher growth plans (Tucker & Stronge, 2005).

Longitudinal data sheets are a compilation of all students’ assessment data each academic year. Examples of data included are standardized assessments, statewide projections for ACT scores, common assessments, benchmark assessments, any grade level where a student was retained or promoted, IEP plan in place, attendance, and discipline referrals. Teachers can also use longitudinal data sheets to target weak students. This will allow for more specific instruction to measure growth over the course of one academic year. Data also show patterns with instruction, forms of assessment, and accurate results on achievement. Recording and reflecting on students’ data will help all stakeholders better prepare to meet the instructional needs of today’s learners (Comer, 2004).
Morales, Ambrose-Roman, and Perez-Maldonado (2016) studied the impacts of a mentoring program for at-risk students in remedial Math classes at a university. Students identified as at-risk of dropping out of college were eligible to participate in a mentoring program. University students, faculty, and staff served as mentors and were provided thorough training and a stipend. The length of the mentoring program occurred over the course of three consecutive academic semesters. All mentees were enrolled in the same course and section of the course. Throughout the duration of the mentoring program, participants showed significant growth in the rates of academic promotion, self-confidence and involvement in campus activities. The interviews yielded positive feedback both from the mentors and mentees. The results suggested that mentoring relationships keep mentors and mentees accountable to the goals for academic success and personal support.

**Potential Effects of Not Having a Program**

What does a school look like that does not have an established school and community relations program? Most districts have some relations with the public, but with a small amount of resources, there are limited opportunities to impact students’ learning. When a school does not have an active mentoring program, instructional leaders and teachers have greater responsibilities when communicating with the public. People generally give to people they know and with whom they have a relationship (Comer, 2004).

The problem with all of these obstacles that all need to realize is the needs of children have not changed much from what they have always been (Comer, 2004). Children need a sense of security and sustained support to develop and prepare for successful participation in their societies. Many problems come from the support children need and what society can provide. “If an academic culture is truly to take hold and endure, it must be embedded in the hearts and
minds—and the belief systems and behaviors—of youngsters, their families, and the organizations that make up their communities” (Price, 2008, p. 45).

Intangible factors are just as vital to children as tangible factors in the overall idea encompassing education. Comer (2004) states that if society does not know the needs of children, the needs can never be met. Opportunities for mentoring, field trips, and service learning, along with a dearth of instructional resources fail to teach the whole child to develop and succeed as an active citizen in society. All stakeholders need to realize that community investment in the local education system is a powerful tool to turn the tide in students (Hill & Harvey, 2004). If students do not receive valuable skills and lessons during the child development years, they may become less likely to reach high levels of success. As children advance to new grade levels, outside factors affect the way they approach learning. Reigniting their passion for learning can be difficult, but it is relevant to the progression of academic improvements (Price, 2008).

Springer (2009) deliberates that school environments should reflect the ways of thinking and learning that educators model for their students. Most teachers come from an era with minimal technology usage while learning. Technology has become a powerful tool for students that requires an open mind to labor through complex problems. Even with the use of technology, educators are not always able to meet the needs of all students in an ever-changing world.

**Absenteeism**

Balfanz (2016) discusses students who display chronic absenteeism and the effects on students’ achievement. The more students are absent in the lower grades, the more they struggle in upper grades. According to the author, if students are not present in school, academic gaps will frequently occur and put students in at-risk categories early in the educational process.
Students struggling with absenteeism also showed regression in academics and had an increase in behavior outbursts. Balfanz (2016) discovered that a mentor program showed significant improvements among the at-risk students in the areas of attendance, behavior, and academic progress.

Nauer (2016) realized that chronic absenteeism was a problem in New York public schools. The schools consisted of large populations of at-risk youth. Children struggled academically as a result of absenteeism. Multiple agencies began meeting weekly to determine students who were missing multiple school days. The goal of these committees was to pilot student-centered incentives in hopes that attendance would increase in each of the targeted schools. In the early stages, students made minor improvements. The committee realized that assistance was needed from others, and community members who had served as previous mentors were assigned to students with chronic absenteeism. Each mentor contacted his or her assigned student to encourage attendance, coordinated transportation plans to and from school, and helped resolve issues keeping students from missing school. The mentoring program duration was approximately three years. By the end of the third year, 58 out of 100 schools with records of chronic absenteeism had significantly improved.

London, Sanchez, and Castrechini (2016) conducted a study of students in grades K-12 with chronic absenteeism over a three-year period. The researchers sought to determine if absenteeism had a significant impact on students’ standardized test scores. Results indicated that chronic absenteeism in elementary and middle school students showed significant impacts on students’ standardized test scores. Decreased scores were seen, especially when compared to students in the same grades with higher attendance records. Lower test scores were attributed to chronic absenteeism.
Parke and Kanyongo (2012) conducted a study among students in grades 1-12. Students’ standardized testing data was compared to their attendance data. The results unveiled that students with consistent absenteeism performed lower on academic assessments than those with higher attendance rates.

**Academic Achievement**

Espinoza (2012) discusses the impact of mentoring on low-income and minority students who struggle with academics. Mentoring impacted students by assisting in the acknowledgement of goals and aspirations of the identified at-risk students. Espinoza (2012) further describes specific methods that demonstrated significance on the lives of at-risk students. Her methods include mentoring relationships, educator investments of time, and programs that advise students on communication and planning for the future. In addition, Coller and Kuo (2014) discussed the impacts of a study for mentoring young Latino students considered at-risk. The research findings showed that the school-based mentoring program was the most effective in the study. Students who had a mentor throughout the academic school year showed more academic gains than his or her counterparts who did not participate in the mentoring program.

Hickman and Wright (2011) conducted a study over a 10-year period consisting of students across grades K-12 identified as at-risk. The goal of the study was to examine if there was any predictor of high school graduation rates when at-risk students participated in a mentoring program. As the mentoring program progressed during the 10-year period, identifiers were revealed showing at-risk students benefited from a positive mentor at each level of the K-12 spectrum.

Students who participated in the mentoring program in the elementary and middle school years had higher graduation rates than the students who began in the secondary grades (Hickman
& Wright, 2011). Students who had been retained in grades 5 and 6 displayed higher rates of dropout than those who had been retained in the elementary grades. Hickman and Wright (2011) also suggested that retaining students due to learning gaps was not an indicator of high school graduation rates. The highest indicators resulting from the study was that mentoring received at young ages provided support for academic success, higher attendance rates, lower discipline problems, and higher graduation rates.

A study led by Little, Kearney, and Britner (2010) examined high school students during a summer mentoring program. All participants took a pre-test before the program was implemented and a post-test at the conclusion. Results portrayed positive experiences and academic growth. Participants felt that stronger relationships occurred when mentors spent additional time discussing and getting to know them instead of the minimal time on the activity at hand.

Rosenthal and Shinbarger (2010) analyzed academic data regarding first-year college students after one semester of enrollment. Participants were eligible if they had received academic probation at the conclusion of the fall semester. Fifteen out of 29 students participated in a mentoring program provided by the college. By the end of the spring semester, 14 of the participants improved academically by nearly one letter-grade in final averages. Students who did not participate resulted in few who showed improvement, and some who did not enroll for the following semester.

Mentoring can be used as a predictor for success in elementary and middle school students. A study was conducted by Fruith and Wray-Lake (2012) examining the effects of specific groups of mentors and various points in a child’s educational development. Results unveiled that community members were the most effective for younger students in elementary
and middle school. Family members of similar age and coaches were regarded as the most influential mentors for high school students. At the collegiate level, teachers and professionals were more frequently chosen as mentors. Mentoring showed positive results in each age of students in the area of academic achievement, self-confidence, and resilience in various struggles.
CHAPTER 3

METHODOLOGY

Research Design

This study was a quantitative methods design to discover if there were significant impacts from a mentoring program on students’ attendance, iReady scores and behavior referrals. The mentoring program began in February 2017 and ended in May 2017. In order to obtain substantial data, time for mentor/mentee relationships was the most critical factor. Quantitative measures were used to compare students’ growth from the pre-testing data to the post-testing data. The pre-test for attendance was in Spring 2016, while the post-test was Spring 2017. The pre-tests for iReady math and reading were from Fall 2015, Winter 2016, Spring 2016, and Fall 2016. The post-test for the iReady assessments was in Spring 2017. The pre-test for discipline referrals was in Fall 2016, while the post-test was in Spring 2017. The results compared students’ data to determine if the program showed significance in students’ attendance, reading and math scores, and discipline referrals.

Purpose of the Study

The purpose of this study was to determine if mentoring relationships had a positive impact on at-risk students based on the criteria of attendance, iReady math and reading assessments, and discipline referrals. “At-risk” students, for the purposes of this study, were those performing one or more grade levels below their current grade level in reading and math. The students categorized as severely at-risk were the first paired with mentors, followed by the moderately at-risk, and the slightly at-risk. Specific areas of interest within this study were to measure whether the mentoring relationships increased attendance in school, increased standardized test scores, and decreased discipline referrals.
Research Questions and Hypotheses

1) Is there a significant difference in the attendance rate of the students who participated in the mentoring program from the spring semester of the previous year to the spring semester of the current year?

2) Is there a significant difference in the iReady standardized testing data in reading and math from the students’ pre-test scores to post-test scores after participating in the mentoring program?

3) Is there a significant difference in the number of discipline referrals as the mentoring relationships strengthened from the first semester to the second semester?

The null hypothesis was that a mentoring program had no effect on achievement, attendance, or behavior. The researcher alternately hypothesized that the relationship between mentors and mentees has positive effects on attendance, standardized test scores, and behavior as relationships strengthened.

Participant Selection Process and Procedures

The researcher contacted the local chamber of commerce and the local university to recruit mentors. Specific information in an email and flyer was distributed electronically to all leadership personnel in each company detailing goals of the program, expectations, and school board policy (Appendix A and B). Leaders offered the information to employees who met all criteria or who had a supervising professor at the university overseeing his or her performance. Each interested mentor completed a Google form survey (Appendix C) asking his or her name, place of employment or attending university, job title or academic major, and if he or she had any interests or hobbies. A total of 28 mentors were selected out of 35 based on availability and commitment to meeting every other week for 30 minutes. One mentor was a member of the
chamber of commerce and was interviewed by phone by the researcher. One mentor was a
retired professor from the university. All other mentors were employees or students at the
university with approval given to the researcher by the university’s vice president of student
affairs. Any mentor who was a university basketball player was given approval by the coaches
to serve in this capacity. A total of 7 university students received credit for community service
for a class in his or her major with the professor as the overseer of the requirements. The
documentation kept by the school secretary was used as the school’s records of time spent for
each university student receiving credit in a course.

The researcher received a discipline report from the school’s assistant principal, an
attendance record from the attendance personnel, and the iReady test scores from the Fall 2016
testing window. Any students directly taught by the researcher were excluded from
participation. Students who were identified at the lowest levels of the Reading and Math iReady
tests and had more than five absences were the first to be invited to participate in the program
(Appendix D). Only 11 students out of 30 returned the parental consent form. The researcher
then identified students as moderately at-risk based on the iReady tests, had at least two absences
on the attendance record, and two or more behavior referrals were eligible to participate.
Students who returned the parental consent form totaled 46. The majority did not have any
behavior referrals on record. The researcher then met with all of these students to discuss the
mentoring program goals and expectations. Students signed the assent form (Appendix E) and
completed a survey (Appendix F) asking for their name, grade, gender, race, activities/hobbies of
interest, and college or career interests.

The researcher met with the 28 selected mentors face-to-face at the school to discuss
detailed information about the expectations of the program, rules and regulations of the school,
and suggestions on mentoring students through conversation and activities. The 27 selected mentors were asked to complete an additional Google form survey providing availability between the hours of 8:00 a.m. and 3:00 p.m., the day(s) of the week available to meet with students, and whether he or she could come every week or every other week (Appendix G). The researcher then paired students with mentors based on availability and interests. Mentors available every week were assigned two students. The mentor alternated weeks to spend equal time with both students. Each mentor met one-on-one with students for 30 minutes. All other mentors were assigned one student and met every other week for 30 minutes.

When a mentor was unable to meet at the scheduled time, the mentor emailed the researcher to re-schedule the session, and the researcher notified students to communicate that the session was rescheduled. The researcher forwarded the email to the school secretary, and the secretary contacted the students. Consistency was an important factor, and the researcher wanted participants to know that he or she was not forgotten on the regular meeting day with his or her mentor. Communication of any schedule changes prevented social barriers between participants and mentors. The school was dismissed one day for inclement weather and two days for sickness throughout the district. The researcher notified all mentors by email to make other arrangements. Several mentors played basketball for the university and had to adjust their schedules due to tournaments, out-of-town games, and practice sessions during the basketball season. Mentors communicated this information to their participants in advance or corresponded as soon as possible with the researcher. The researcher forwarded the information to the secretary at the front desk who then contacted the individual to relay the information and the reason for the change. Mentors were allowed to reschedule with a participant on another day the same week or the following week, but the meeting had to occur at the specific time of day listed
on the schedule. Participants were not allowed to leave a class during core instruction; therefore, all meetings occurred during each participant’s lunch or activity periods.

A note was sent home with each participant with the name of the mentor, place of employment/attending university, job title/university major, and the day and time the mentoring would occur during the school day. Parents then had the opportunity to object or request changes to the scheduling and mentor. The researcher did not receive any parental objections.

The population served were fourth and fifth grade students in a rural school who were considered at-risk. The identified students had consistently struggled academically, behaviorally, and with attendance. Regardless of the curriculum, teachers, and instructional strategies, many students were not progressing at a substantial rate, causing them to fall behind in academic measures. The iReady adaptive, diagnostic assessment developed by Curriculum Associates assessed students’ levels in reading and math. The assessment was given in the school’s computer lab and library with a certified teacher who was not the content teacher proctoring. The content teacher for each assessment was not in the room during the time of assessment. No assistance or additional tools other than pencils and blank paper were distributed to students. The assessments were not timed because each test adapts to accurately calculate performance.

When all students completed both parts of the testing, results were reviewed. The assessment provided detailed results of the exact grade levels at which students were performing in both subject areas. The assessment provided a detailed report of the performance score in the subcategories within each subject. The parents, students, and assigned teachers were able to determine areas of reinforcement as well as refinement per subcategory to best meet the students
at their performance level. The areas of refinement specified students’ weak reading and math skills and explained steps needed to show academic growth.

All data was kept confidential. School administrators, teachers, parents and students received copies of appropriate individual achievement results. Throughout the study and upon data analysis, no personal identification was revealed to keep all participants’ information confidential.

**Description of Research Instrumentation**

The students who were selected, obtained parental consent, and gave personal assent participated. Students who were identified by the iReady assessment results as one grade level below the current grade were considered slightly at-risk. Students identified as two grade levels below were considered moderately at-risk. Students identified as three or more grade levels below were considered severely at-risk.

The iReady assessment was used for this study because the school, parents, and participants were already familiar with the rigor, the purpose, and the type of detailed reports. This assessment also had clearly defined cut score ranges showing exact grade level performance. This test was used for the district, school, and teacher levels of effectiveness as approved by the state of Tennessee in place of the TN Ready assessments. The company that had a contract with the Tennessee Board of Education did not fulfill the commitment to create a standardized state-wide assessment for grades K-8. In the absence of a state assessment, the state allowed each school district to select the most accurate measure that reflected the state’s requirements and goals for achievement. The iReady assessment was granted approval for the school district in grades K-8.
Community mentors completed a survey asking for their name, email, job title or academic major, place of employment or attending university, gender, race, and favorite sport or activities of interest. Mentors spent time with students to build positive relationships. Short-term goal-setting was a focus during their scheduled meeting times that aligned with the goals of the study. Mentors also helped their students with long-term goal-setting related to college and career interests.

Mentors reported to the front desk at the school, signed in as a visitor and told the secretary the name of their mentee. The secretary verified the information with the schedule provided by the researcher and documented in a Google calendar the mentor’s name, mentee’s name, and time. The Google calendar provided detailed records for the school and the researcher to know the frequency of mentoring per participant and mentor, especially since several mentors were assigned two students.

Mentors were allowed to meet with students anywhere on school premises under camera surveillance. This guaranteed safety and exact whereabouts and recorded supervision during each meeting in its entirety. Areas under camera surveillance were: outdoor picnic area, gymnasium, cafeteria, lobby of the auditorium, hallways, and the main lobby of the building. Mentors gave the students preference as to where they would feel comfortable and the activity they wanted to do that day. The majority of the activities led by the mentors were in the form of games. Several mentors took students to the gymnasium to play basketball or participate in another sport. Some mentors read books to students and vice versa. Other mentors brought board games or card games. All mentors, regardless of the activity, focused conversation on short and long-term goal-setting and discussion of the students’ personal educational interests. All mentors walked their participants back to class at the end of the mentoring session. Mentors
escorting students back to class helped alleviate students returning late to class because of a bathroom break or water break. This also ensured that students were under the supervision of an adult at all times.

**Variables in the Study**

The independent variable in the study was the implementation of the mentoring program. The dependent variables were the students’ iReady reading and math scores from the three testing windows from the 2015-2016 year and the first testing window from the 2016-2017 year. These four scores served as the pre-test before the mentoring program began. The third testing window of the current school year served as the post-test upon the implementation of the mentoring program. This occurred in April 2017. Attendance records from the Spring 2016 semester were compared to the records at the conclusion of the mentoring program in April of 2017 semester. The number of discipline referrals was compared from Fall 2016 to Spring 2017, which is the current academic year.

**Procedures for Data Analysis**

The researcher coded each student with a number on the data set. The Wilcoxon Signed-Ranks Test was used because it calculated and ranked the differences of the same participants’ scores on pre- and post-tests. The test was used to evaluate the means of the achievement data from the pre-tests and the post-tests of the iReady math and reading assessments and reveal if any data had statistical significance after implementation of the mentoring program. The Wilcoxon Signed-Ranks Test was used to show if there were any significance when comparing the previous year’s spring semester data of absences compared to the current year’s spring semester data of absences. The same test was used to compare behavior referrals from the fall semester to the spring semester of the current academic year to determine if there were any
significance. The results indicated effects from the mentoring program in attendance, math and reading achievement, and behavior.

The researcher sought to add validity to the study by comparing the experimental groups’ data to the control groups’ data. The control group consisted of 80 fourth and fifth grade students who met eligibility requirements but did not participate. The Wilcoxon Signed-Ranks Test compared experimental groups’ attendance from the Spring 2016 semester to the Spring 2017 semester. The same test was used for the control groups’ data. The mean scores from the experimental group suggested that students’ absences significantly decreased after implementation of the mentoring program. The Mann-Whitney Nonparametric Test was used to look for differences between two independent samples. The Mann-Whitney was used to compare the means of the control group attendance to the experimental group attendance.

Paired Samples T-Tests were used on the iReady math and reading test scores for the experimental and control groups because all tests for skewness and kurtosis were within normal limits. Pearson correlations were also compared between the iReady math scores in both groups and the reading scores in both groups.

The Wilcoxon Signed-Ranks Test was performed to determine means and significance in the experimental and control groups. The Mann-Whitney U-Test was also conducted to compare the means of the control group behavior to the experimental group behavior.
CHAPTER 4

FINDINGS AND ANALYSIS

Purpose

The purpose of the study was to examine the attendance, academic, and behavioral impact of mentoring on at-risk students in grades four and five in a middle school in North-Central Tennessee that primarily serves low to middle income families. The three areas of focus (the dependent variables) were school attendance, standardized reading and math scores from the iReady group administered test, and the number of discipline referrals to administration. The researcher sought to determine whether mentoring (the independent variable) had a statistically significant influence on the dependent variables. A control group of fourth and fifth graders from the same school who did not receive mentoring was employed as well. The study did not have a control group because the researcher felt it was unethical to provide a service that was helpful to all participants. A t-test was used to compare math and reading test scores. Due to some of the skewness and kurtosis calculations, the attendance and referrals data did not meet the criteria to run a parametric t-test; therefore, the researcher used the Wilcoxon Signed-Ranks Test since it is the non-parametric equivalent. The Wilcoxon Signed-Ranks tests compared discipline variables from Fall 2016 and Spring 2017. A subsequent test compared attendance variables from Spring 2016 to Spring 2017. The $p$ value used to determine significance was .01. The Wilcoxon Signed-Ranks Test compared data prior to the treatment and after the administered treatment with the same participants. The researcher examined Pearson’s correlations among all available semesters to determine if any changes were represented in the expected correlation coefficient.
Participants

In the experimental group there were 27 fourth graders and 19 fifth graders in the experimental group. The percentage of male participants was 54%, and 46% were female. The percentage of students receiving free and reduced lunch (an index of socioeconomic status) in the school under study was 32%. IRB approval was obtained followed by permission from the principal and director of schools to begin the study. Students for the experimental group were invited to participate. Student participants for the experimental group were recruited because they were considered at-risk for attendance, learning, and behavior problems. At-risk, for the purpose of this study, were students with low attendance rates, academic problems (one or more grade levels below their current grade level in reading or math), and office discipline referrals.

The only data used were from the students who gave assent and had parental consent to participate. The researcher defined severely at-risk as students scoring two or more grade levels below current grade level on the iReady math and reading tests. Moderately at-risk was defined as students scoring one grade level below current grade on the iReady tests. Slightly at-risk was defined as students scoring one level below current grade level on one of the iReady tests. The researcher defined the groups to align with teachers’ categorization of students based on iReady performance. Teachers identified students from math and reading results who were one level below grade level and two or more grade levels below. Teachers wrote student information on index cards (yellow for one level below and pink for two or more levels below), and placed the cards on the school’s data boards. The mentors participated in a one hour training conducted by the researcher defining goals, expectations, school rules, safety regulations, and school personnel. The students categorized as severely at-risk were the first paired with mentors, followed by the moderately at-risk, and the slightly at-risk.
For the control group, there were 40 fourth graders and 42 fifth graders. The percentage of males was 52%, and females, 48%. The control group was selected using archived data, and no personal identifiable information was obtained. The control group was comparable to the at-risk levels of the experimental group. The control group data used were attendance, academic scores, and discipline records. The control group was a group of convenience and not a matched sample.

Participants’ posttest data was compared to their pre-test data. To strengthen the validity of the study, it was beneficial to compare the experimental group’s data to a control group’s data. All students were eligible with the same set of criteria. Data was used to determine if any differences existed between the groups’ results.

**Research Questions and Hypotheses**

Three primary research questions were explored for this study. First, is there a significant difference in the attendance rate of the students who participated in the mentoring program from the semester before intervention to the semester following the intervention? This is a within-group comparison. Additionally, is there a significant difference in the attendance rate post-intervention between the experimental and control groups? This is a between group comparison. Second, is there a significant difference in the iReady test scores in reading or math between the experimental and control groups post-intervention? This is a between group comparison. Third, is there a significant difference in the number of discipline referrals within the experimental group (pre- and post-intervention)? This is a within-group comparison. Additionally, is there a significant difference in the number of discipline referrals between the experimental and control groups post-intervention? This is a between group comparison. The null hypotheses are that there are statistically significant differences within and between the groups following the intervention.
Analyses

To answer the research questions, several different nonparametric and parametric tests were conducted using SPSS, a computer-driven statistics program. First, the nonparametric Wilcoxon Signed-Ranks test was used to compare attendance rates pre- and post-intervention for the experimental group. Specifically, attendance rates within the experimental group were compared between the Spring 2016 and Spring 2017 semesters. For contrast, the same test was applied to the control group. The Wilcoxon Signed-Ranks test is appropriate when comparisons are made within-group and when there are problems with skewness and disproportionate standard deviations within the group. Next, the attendance rates between the experimental and control groups at post-intervention (Spring 2017) were compared using the Mann-Whitney test. Like the Wilcoxon Signed-Ranks test, the Mann-Whitney nonparametric test is used when two independent groups are compared (that is, the experimental and control groups) and when there are problems with skewness and unequal variances.

For the second research question, independent samples T-Tests were used to compare iReady reading and math scores across each of the five semesters for which data were available. Independent samples T-tests are appropriate when comparing the difference between the means of two groups to determine if the means are statistically significant. Additional non-statistical comparisons were made by examining the means and standard deviations for both groups for reading and math and by examining the correlations between each pre-intervention semester and the post-intervention semester. This was conducted to determine if any deviations in expected correlations could be identified. Similarly, paired-samples T-tests were used to examine any significant differences for each group from each pre-intervention semester and the post-
intervention semester. Paired-samples T-tests are appropriate when comparing the difference between the means of one group of participants’ data pre- and post- intervention.

Lastly, to answer the third research question, Wilcoxon Signed-Ranks tests were used to determine any differences in discipline referrals within each group from the Fall 2016 semester to the Spring 2017. Although the control group did not receive the intervention, this statistical comparison was conducted for contrast purposes. Finally, the Mann-Whitney test was used to compare the discipline referrals between the experimental and control groups from the Spring 2017 semester. Unless otherwise noted, the .01 level of significance was used to determine the presence of any statistical difference between and within groups. The .01 level was chosen to control for alpha slippage.

**Attendance Results**

The purpose of studying attendance was to determine if mentoring impacted students’ motivation to attend school. At-risk participants had absences ranging from 0 to 34 days in Spring 2016. The participants’ absences were compared to determine if significance was discovered. The Wilcoxon Signed-Ranks Test was nonparametric and was selected because of unequal variances and non-normal distribution. The Wilcoxon Signed-Ranks Test compared experimental groups’ attendance from the Spring 2016 semester to the Spring 2017 semester. The mean scores suggested that students’ absences significantly decreased after implementation of the mentoring program (Appendix H1). Based on positive ranks, $z = -4.585$, and $p = .000$. The results indicated a strong significant decrease in absences. The control groups’ attendance was displayed in Appendix H2, $Z = 1.917$, and $p = .055$. No difference in attendance for the control group was indicated.
The Mann-Whitney Nonparametric Test was used to look for differences between two independent samples. The Mann-Whitney, similar to a t-test, examined ordinal samples. The Mann-Whitney test was used to compare the means of the control group attendance to the experimental group attendance, $U = 1681.5$, and $p = .412$. No statistical difference was found in the control and experimental group comparisons between Spring 2016 and Spring 2017. The results indicated that there was no statistical significance.

**iReady Results**

The researcher’s purpose for comparing test scores was to determine if mentoring had statistical significance in students’ math and reading iReady standardized test scores. The iReady tests were given three times a year: fall, winter, and spring. The previous year’s testing data was used in addition to the fall of the current year’s testing data to show the trends of each student in math and reading. Curriculum Associates, the company that designed the iReady tests, provided scale score ranges for each grade level that determined the students’ performance levels. If a student did not score within the range for his or her grade level, the results specified the grade level at which the student performed when the test was administered. Out of four math pre-test scores and four reading pre-test scores, participants had at least one score indicating performance was one or more grade levels below and the pattern of students’ performance comparing the past year to the present year.

All tests for skewness and kurtosis were within normal limits; therefore, Paired Samples T-Tests were performed for math and reading in the control and experimental groups. The descriptive statistics were derived from the Paired Samples T-Tests in math (see Appendix H3). Each mean score from the Fall 2015, Winter 2015, and Spring 2016 pre-tests showed progression. There was a decrease between Spring 2016 and Fall 2016.
Paired Samples T-Tests were used for the experimental group because all tests for skewness and kurtosis were within normal limits. Paired Samples T-Tests for math within the experimental group revealed strong positive correlations with minimal changes (see Appendix H4).

Pearson correlations were compared and showed strong positive correlations with minimal changes in math (see Appendix H5). The Wilcoxon Signed-Ranks had $Z = .577$ and $p = .564$. Pearson correlations were also compared and showed strong positive correlations with minimal changes in reading (see Appendix H6). The Wilcoxon Signed-Ranks had $Z = 1.508$ and $p = .132$.

Paired Samples T-Tests were performed because all tests for skewness and kurtosis were within normal limits. The control group descriptive statistics for math displayed increasing mean scores until the Spring 2016 assessment and Fall 2016 assessment. A decrease in the mean scores were noted (see Appendix H7). The correlations and paired samples’ T-tests for math revealed strong positive correlations with minimal changes (see Appendix H8). No statistical significance was found.

Descriptive statistics for reading for the experimental group showed progression from the Fall 2015, Winter 2015, and Spring 2016 pre-tests. There was a decrease between Spring 2016 and Fall 2016 (see Appendix H9). Paired Samples T-Tests results for reading within the experimental group showed strong positive correlations with minimal changes (see Appendix H10).

Descriptive statistics for Reading for the secondary control group revealed progression among the mean scores from the Fall 2015, Winter 2015, and Spring 2016 pre-tests. There was a decrease between Spring 2016 and Fall 2016 (see Appendix H11). Correlations and Paired
Samples T-Tests for reading for the secondary control group revealed positive correlations (see Appendix H12). The results indicated strong correlations between the semesters, but a statistically significant difference between the pairings was not found.

The researcher used Independent Samples T-Tests for math and reading for the secondary control and experimental groups to compare data from both groups. Math data comparisons between control and experimental groups revealed no significant differences between the groups (see Appendix H13). Reading data comparisons between both groups also revealed no significant differences between the groups (see Appendix H14).

No significant differences between the control and experimental groups for any semester were present. To further explore possible effects of the intervention on math and reading scores, the researcher divided the sample into three groups based on Fall 2016 scores. Students who had scores one standard deviation unit below the mean was Group 1. Students who had scores within one standard deviation unit of the mean was Group 2. Group 3 was made up of students who scored one standard deviation unit above the mean. After dividing students into three groups, the Wilcoxon Signed-Ranks test was used to determine movement of students either increasing or decreasing in math scores and reading scores. The results for the experimental group were $Z = 1.427$, and $p = .154$. Results from the Wilcoxon Signed-Ranks Tests for the control group were $Z = .172$, and $p = .854$. The results from both groups indicated no improvement in test scores.

**Behavior Results**

The purpose for studying students’ discipline referrals was to determine if mentoring had statistical significance from pre-test to post-test. The fall and spring semesters of the current school year were used in the Wilcoxon Signed-Ranks Test. The means of each data were compared to the same participants after mentoring was implemented during the spring semester
Thirty-four out of 46 participants had zero referrals in Fall 2016 and maintained zero referrals in Spring 2017. The researcher noted that out of the remaining 12 participants, eight improved by decreasing the number of behavior referrals in the spring semester compared to the four who increased the amount of referrals. A slight improvement was seen in the decrease of referrals from the fall to the spring semester, but the decrease was not statistically significant. The control group data showed no difference in mean scores (see Appendix H17).

Both the experimental and control groups’ data were compared. The researcher used the Mann-Whitney Nonparametric test comparisons for Spring 2017 discipline data, $U = .1721$, and $p = .361$. The results indicated no statistical significance between the groups comparing Spring 2016 and Spring 2017 discipline referrals.
CHAPTER 5

CONCLUSIONS AND DISCUSSION

Summary

Mentoring has been studied in many disciplines with the intent that results would show improvement in individuals and groups. Many studies have shown significant effects of mentoring among students in the following groups: lower elementary, secondary, and post-secondary (Grineski, 2003; de Anda, 2001; Burbank & Hunter, 2008). However, limited research has been conducted on mentoring impacts among students in grades four and five.

Three research questions were developed to conduct this study:

1) Is there a significant difference in the attendance rate of the students who participated in the mentoring program from the spring semester of the previous year to the spring semester of the current year?

2) Is there a significant difference in the iReady standardized testing data in reading and math from the students’ pre-test scores to post-test scores after participating in the mentoring program?

3) Is there a significant difference in the number of discipline referrals as the mentoring relationships strengthened from the first semester to the second semester?

The null hypothesis was that a mentoring program had no effect on achievement, attendance, or behavior. The researcher alternately hypothesized that the relationship between mentors and mentees had positive effects on attendance, standardized test scores, and behavior as relationships strengthened.
Conclusions

Mentoring had a strong, positive impact on students’ attendance. However, mentoring did not show significance in increasing test scores or decreasing the number of behavior referrals. One possibility was the lack of a substantial number of participants who had referrals on record. The researcher conducted Pearson correlations among all available semesters with the math and reading iReady scores. After the intervention, the correlations remained similar across the semesters. A possible conclusion was the length of time mentoring was administered. Participants met with mentors an average of six or seven sessions.

After students were divided into three groups, below, within, and above standard deviation units of the mean, the results for math showed four students increased their scores moving the students into a higher group; however, five students decreased their scores in Math placing the students in a lower group after the intervention. In reading eight students increased their scores moving students into a higher group; however, three students decreased their scores and moved into a lower group after intervention.

After analysis of the data, both the experimental and control groups showed one major similarity. When both groups’ iReady math and reading data were compared, each mean score increased from the Fall 2015 pre-test until the Fall 2016 pre-test. A decrease in both groups’ data was seen in both subject areas. The researcher inferred that students were not retaining learning from spring benchmark tests to fall benchmark tests due to the summer break. One recommendation was to implement a mentoring program during the summer months.

Relationship to Past Research

The results regarding academic improvements from this study were consistent with the study conducted by Chambers, Hylen, and Schreiber (2006). Three levels of at-risk students
were represented, and the more frequent and consistent mentoring occurred, the more academic gains resulted. Broussard, Mosley-Howard, and Roychoudhury (2006) had similar results showing significant improvements in students’ attendance. The results were also similar to the study conducted by Converse and Lignugaris-Kraft (2009) revealing significant gains in students’ attendance.

The results of the researcher’s study supported a study conducted by Lampley and Johnson (2010). Their research concerned at-risk middle school students, and the goals of their research were to improve behavior, attendance, and achievement. The mentors were employees at the school who met with their assigned student twice a week for 30 minutes. The study was conducted for two years to determine if significance was found in the data. With a similar number of participants, the results of the researcher’s study are similar in nature to the results of the study conducted by Lampley and Johnson (2010). Both studies showed significant gains in attendance. The main difference, however, was that behavior results for the researcher’s study were not as significant as the results from Lampley and Johnson (2010). The researcher concluded that the main factor differentiating these studies was that Lampley and Johnson’s (2010) study was conducted over a two-year period with sessions occurring twice a week with school personnel. The researcher’s study was conducted for a three-month period with all mentors solicited from the community and the local university.

The researcher’s study supports the type of mentors for elementary and middle school students as found in a study conducted by Fruiht and Wray-Lake (2012). Both studies consisted of community mentors working with at-risk students, and positive results from both studies support the idea that mentoring has direct correlations to student progress in attendance. Their
study also resulted in improvement of academic test scores. The researcher inferred that the reason for the difference was due to the length of time for mentoring sessions.

Carswell, et al. (2009) conducted a study of at-risk African American students at an alternative school. The students met in groups with mentors five days a week for three hours each session. This design did not yield positive results due to the disruptive behavior during the sessions. The researcher’s study also did not show statistically significant results, but a small amount of improvement was made. A possible reason for this is due to the mentors meeting one-on-one with students every other week. The researcher did not have any behavior problems reported; therefore, one-on-one meetings were viewed as more effective.

Hudson (2013) conducted a study consisting of adolescent youth in foster care. The mentors were leaders in the community. Students met one-on-one with mentors, and the focus of each meeting was setting goals and exploring college and career options. Students who met consistently with mentors showed more improvement than the students who did not. In comparison to the researcher’s study, the participants’ ages were different, but the goal-setting focus was the same. The researcher’s study demonstrated positive results, which could have been the result of intervention at an earlier age.

Converse and Lignugaris-Kraft (2009) conducted a study with students in grades sixth through eighth. The study yielded statistically significant results that showed increase in attendance and decrease in behavior referrals. The researcher inferred that the mentoring program’s design with one-on-one meetings occurring once a week for 18 weeks was the reason they discovered more positive results. The amount of time spent with mentors had significant impact on at-risk students. The researcher’s mentoring program did not show significant effects in test scores or behavior. Both programs targeted at-risk students at different grade levels;
however, the researcher’s program only yielded statistically significant results in attendance. The study conducted by Converse and Lignugaris-Kraft (2009) yielded statistically significant results in attendance and behavior due to the frequency and duration of the mentoring program.

Dawes and Dawes (2005) conducted a study of adolescents in the criminal justice system. The students met with mentors to discuss opportunities after high school. The students who consistently participated showed significant improvement in behavior referrals. The results of this study were different from the researcher’s study because of the high amount of discipline referrals at the initial start of the program. The researcher’s participants did not begin with a significant amount of discipline referrals; therefore, statistical significance was unable to occur.

La Valle (2015) studied five mentoring programs focusing on student behavior. Students who met with a group of up to 8 students and led by 2-5 mentors showed more positive growth than the students who met one-on-one with a mentor. The results of La Valle’s (2015) study compared to the researcher’s study are different because the researcher’s study only had mentors to meet with students one-on-one. One reason that La Valle’s (2015) study showed more growth could be that small group mentoring yields more improvements in students’ behavior.

Weiler, et al. (2015) conducted a study of at-risk students ages 11-18. The study was implemented during two terms: a fall and spring. Students improved by decreasing substance abuse and behavior referrals. The study by Weiler, et al. (2015) was similar to the researcher’s study because of the lower age of participants (11-12). The researcher’s study consisted of students ages 10-12 and focused on behavior improvement as one of the goals. Weiler et al. (2015) participants showed improvement over a two semester period. The researcher concluded that the results were more positive in the Weiler et al. (2015) study because students were able to
participate in mentoring for twice the amount of time. Time spent in mentoring seemed to be a defining factor to the participants’ improvement level.

**Discussion**

The purpose of the study was to determine the impact of mentoring on at-risk fourth and fifth grade students. The students spent an average of six sessions lasting 30 minutes every other week. Results from this study indicated that mentoring had a strong impact on students’ attendance. The researcher concluded that mentoring increased students’ motivation to attend school because of the one-on-one relationship with the mentors and the activities completed during mentoring.

Some of the mentors were basketball players from the local university who played basketball with the students. A few mentors brought games to play with the students as they discussed goals. One mentor was a business owner and race car driver who brought his race car to the school and allowed the student to sit in the car. Another mentor was paired with a student who was interested in Paris and loved to read. The mentor bought a journal, and both took turns writing portions of a fictional story in between sessions. At the next session, the one who made additions would read them and pass the journal to the other. Some of the sessions consisted of a mentor helping a student study for upcoming classroom assessments. The researcher suggested that the significant increase in attendance was due to the engaging activities that piqued students’ interests, as well as the positive conversations that occurred during the activities. Participants had gained a consistent adult who set aside time and effort to assist them goal-setting and future plans.

Mentoring showed little impact on students’ math and reading iReady standardized test scores. The focus as described to the mentors was to assist students in short- and long-term goal-
setting. Mentors were encouraged to learn students’ aspirations regarding colleges and careers and to assist in goal-setting and the process needed to reach their goals. Students sought approval from their mentors and wanted affirmation for their accomplishments. The researcher suggested that mentoring did not significantly increase students’ math and reading scores because of differentiated activities per interest of each student and the length of the program duration.

Mentoring did not reveal a significant impact on students’ behavior referrals. The researcher concluded that this occurred because the majority of the students had zero referrals in the pre-test and post-test phases. Students cannot improve from having zero referrals, so the remaining students’ referrals were analyzed. The data indicated that eight of the students showed improvement in contrast to the four who did not show improvement. The researcher suggested that mentoring had a positive impact, but the significance was not represented due to the number of referrals in the sample size during the pre-testing phase.

The researcher received seven detailed reflections from university students who received credit for serving as a mentor. The mentors shared personal growth experiences by overcoming individual challenges, developing relationships with at-risk students, gaining experience prior to entering the Education field, and testing their personal strengths and weaknesses. The mentors shared positive experiences and expressed desire to participate if the program was implemented in the future.

One male participant had a strong interest in race cars and racing events. He had never personally interacted with racing other than reading books. The assigned mentor was a male community business owner and a race car driver. The mentor brought his personal race car to the school one day and allowed the student to sit in the car. The mentor later received
permission from the student’s mother to attend a race with the mentor and his son. The mother consented, and the student attended the race. The mentor introduced the student to multiple race car drivers and allowed him to ride in a race car around the track. The student showed positive changes and was happier when at school following these activities.

**Limitations to the Study**

One limitation to the study was the amount of time to implement the mentoring program. The program began the first week of February 2017 and concluded the first week of May 2017. Mentors and students met once a week, every other week, for approximately six sessions during the three months. If the study had begun in the fall semester, the timeline of the program would have had six months to impact students, and more mentors could have been involved. Due to the late start of the program, eight adults were unable to serve as a mentor or showed decreased interest in the program.

The length of intervention was implemented for only a few months, and mentors did not have additional time to build strong relationships with the students. If the program could have begun earlier in the school year, the results could have yielded significant results in the iReady scores and the number of discipline referrals. The intensity of the intervention was low due to the amount of time spent mentoring. The relationships did not have sufficient time to develop deep personal connections; therefore, goal-setting was directed to short-term goals instead of long-term college and career goals.

Another limitation was the eligible sample size. Any student who received direct instruction from the researcher was not eligible for participation after review from the university’s IRB. The IRB’s reasoning for the exclusion of students was an issue of autonomy and removing any potential biases from the researcher. This excluded more than 25 students
from participation in the mentoring program. The researcher was unable to have a matched sample control group to compare with the experimental group; therefore, participants were compared to their own pre- and post-test scores. The lack of a matched sample control group hindered comparison of data that could have shown effects and levels of significance between control and experimental groups.

Two students’ data were not represented in the post-testing data or the overall results. One student was experiencing mental health issues and needed treatment; consequently, the student withdrew enrollment from the school system. The other student experienced multiple forms of family trauma. The student’s experiences caused inappropriate behaviors disrupting the learning environment. The student was sent to the school system’s alternative school during the second month of mentoring. The student’s mentor continued sessions at the alternative school after receiving approval from the researcher and administrators from both schools; however, the student did not have access to the iReady math and reading post-test assessments at the alternative school.

**Recommendations for Future Research**

A similar study on impacts of mentoring on mentors could be conducted for an academic year. The researcher could take a randomized sample of mentors and provide a pre-test survey and post-test survey. The researcher could compare the data after mentoring was implemented to determine if positive significance was reflected in the results and the perception of mentors and mentees.

This particular study used iReady testing to measure students’ growth. If a school does not use the iReady assessments, state standardized testing, such as the TN Ready TCAP Test, could be used from the previous year. The first year for the new standardized test was 2016-17.
Data from students’ performance on each subject’s assessment could determine at-risk levels of students.

A longitudinal study could be conducted to determine impacts of mentoring on the same group of participants over a period of time. The researcher could pair a mentor with a student for the study to determine long-term impacts of mentoring, especially as students transition to middle and high schools. The results of the program might identify which grade levels indicate the most growth after mentoring was implemented.

If iReady assessments are used in future studies, detailed training would be recommended for mentors consisting of reports and next steps providing instructional support. Instructional needs are different for every student; therefore, the training would be most beneficial if a mentor met with the student’s teacher to discuss tutoring prior to sessions with the student and after benchmark assessments are administered.

Other general recommendations for implementing a mentoring program would be to have mentors and students meet at the same time of day and on the same day of the week. For example, each mentor would meet with his or her assigned mentee during the students’ lunch period. Simultaneous sessions would control the number and frequency of visitors throughout the day and week. It would also be beneficial to provide mentors with items that could be used during mentoring sessions, such as athletic equipment, journals, art supplies, and games. The researcher recommends mentoring sessions to occur for one hour a week. This could be divided into two 30 minute sessions.

A mentoring program for at-risk students could be conducted with mentors consisting of community members, parents, and school employees. A quantitative study could reveal which groups of students based on the type of mentor show statistical significance. A qualitative study
could be conducted examining perceptions of students based on the mentor with the mentors divided into three groups: community members, parents, and school employees. This type of study would also lend the opportunity to determine teacher and mentor perceptions regarding effectiveness of the mentoring program.
REFERENCES


Fruht, V. V., & Wray-Lake, L. (2012). The role of mentor type and timing in predicting educational attainment. *Journal of Youth and Adolescence, 42*(9), 1459-1472.
Doi: 10.1007/s10964-012-9817-0


Doi:10.3200/PSFL.50.4.31-35


Doi:10.1080/13611267.2015.1073565


Doi:10.1080/10888691.2015.1014484


Association for Supervision and Curriculum Development.
Appendix A

To Whom It May Concern:

I am beginning a mentoring program for students at Chester County Middle School this year. I am in need of at least 50 adult volunteers, retired and/or currently employed, to spend 30 minutes every other week from January through May with a student that I will pair with them. Mentors will provide students with encouragement, assistance in goal-setting, and guidance in college and career research and interests. There is no cost involved other than a little bit of time. The deadline for people to respond is December 1, 2016. All entities with participating employees will be recognized at every parent involvement activity during the school year, in the local newspaper under our school information, and on our school website. We will do our very best to promote participating organizations to the families we serve at every opportunity. All participants must be drug-free and adhere to Chester County School Board policy throughout the duration of the program. All subjects are free to discontinue participation at any time without prejudice from the researcher. All data will be kept in a locked filing cabinet with student records within a locked office at the school. All student data will be kept confidential. I am attaching a flyer with more information about the program. If anyone has questions, they can contact me.

Sincerely,

Melissa M. Judd

Melissa.judd@chestercountyschools.org

731-435-0187
Consider committing 30 minutes every other week with a student in need of encouragement and goal-setting. Select a time that works for you, even if it’s on your lunch break. Be the change agent and the support system that a child needs to become a leader. Set goals with students, challenge their thinking about the future, and help them explore college and/or career options.

Contact Melissa Judd for more details and questions. Melissa.judd@chestercountyschools.org or 731-435-0187
Appendix C

2016-17 Mentor Information

This is the basic information needed for mentors to participate in the mentoring program at Chester County Middle School.

Name: ______________________________________

Email: ______________________________________

Phone Number: ______________________________________

Place of Employment: ______________________________________

Job Title/Position: ______________________________________

Gender:

☐ Male
☐ Female

Race:

☐ African American
☐ White
☐ Hispanic
☐ Native American
☐ Asian/Pacific Islander
☐ Other
  ☐ If other, please list___________________________

List any specific College or Career experience(s) that you could help a student research more information for long-term goal-setting purposes:

________________________________________________________________________
Appendix D

Mentoring Program Consent Form

MSU Student Researcher: Melissa Judd

MSU Faculty Sponsor: Dr. Teresa Clark, Assistant Professor, Murray State University, 3233 Alexander Hall, Murray, KY 42071. (270) 809-6956.

Date: February 2017 - May 2017

Study Title: Impacts of Mentoring Program on At-risk Students

The following information is provided to inform you about a research project and your child’s participation in it. Please read this form carefully and feel free to ask any questions you may have about this study and the information given below. You will be given an opportunity to ask questions, and your questions will be answered. Also, you will be given a copy of this consent form.

1. PURPOSE OF THE STUDY:

The purpose of this study is to determine if mentoring relationships have a significant impact on at-risk students. Specific areas of interest within this study are to measure if the mentoring relationships increase student attendance in school, increase student standardized test scores, and decrease student discipline referrals.

2. WHAT WE WILL ASK THE STUDENT TO DO:

Students will be asked to provide their name, grade level, gender, race, homeroom teacher’s name, their favorite sport or activity, and if they have interests in certain colleges or careers in a survey for Mrs. Judd. This information will be used for Mrs. Judd to pair your child with a community mentor. You will be notified of the mentor paired with your child prior to the start of the program. If there are no objections from you or your child within a week’s notice of receiving the selected mentor information, then the mentor will be contacted and officially assigned to work with your child. These mentors have been carefully selected by Mrs. Judd and their employers and will be monitored in the school building at all times. No names or personal identifiers will be disclosed during the study or in the sharing of results at the conclusion of the study. Students will meet with a community leader/mentor who will help them with studying and goal-setting. Students will use a school laptop to show the mentor new ways they are learning in the classroom, and they will also have the opportunity to have the mentor help them research information related to the student’s future college and/or career interests. If you and/or your child choose to change the selected mentor, please contact Melissa Judd by phone or email.

3. EXPECTED COSTS:

There are no expected costs in this study.

4. RISKS OF PARTICIPATION:
Minimal risk is involved for participants. None of the information shared from student participants during the mentoring program will affect their grades for the current school year.

5. BENEFITS OF PARTICIPATION:

Benefits for participating include your child having a community leader encourage and help them at school every other week for 30 minutes. We have people who would like to serve students and be a positive role model in students’ lives in our community.

6. COMPENSATION:

No compensation will be given for participation in this study.

7. VOLUNTARY PARTICIPATION:

All research participation in this study is voluntary, and you and your child have the right to withdraw at any time, without prejudice or penalty, should you object to the nature of the research. You are entitled to ask questions and to receive an explanation at any time during participation.

8. CONFIDENTIALITY:

No names or personal identifiers will be used.

9. WHOM TO CONTACT:

Murray State University
Dr. Teresa Clark tclark24@murraystate.edu 270-809-6956

Chester County Schools
Dr. Jill Hodum jill.hodum@chestercountyschools.org 731-989-8110

Chester County Schools
Mrs. Melissa Judd melissa.judd@chestercountyschools.org 731-989-8110

STATEMENT BY PERSON AGREETING TO PARTICIPATE IN THIS STUDY

I have read this informed consent document. I have the authority to approve research involving students at this school. I freely and voluntarily choose to allow the researcher to conduct this study under the conditions outlined above. I also acknowledge that I will receive a copy of this form.

*Signature of Student: Date:

*Signature of Parent/Guardian: Date:
Dear Student,

The school is starting a mentoring program where community leaders want to come work with students at our school. You have been selected from your Math and Reading iReady scores to participate in this program. Mrs. Judd and Dr. Hodum will pair you with a mentor who will help you study, play games with you, and help you set college and/or career goals. You will be able to use a school computer to show the mentor what you are learning in class, and they will help you use the computer to research any college or career interests you have. The mentor will come to the school every other week for 30 minutes each time during the school year.

Mrs. Judd is starting this program for a research project. The goals for the mentoring program are to show growth in the iReady scores, increase school attendance, and reduce behavior referrals. Please sign on the line below to participate in the program. A letter and permission form will be sent home for you and your parent/guardian to sign for you to be a part of this program. You and/or your parent/guardian can choose to stop your participation or request to change mentors at any time.

WHOM TO CONTACT:

Murray State University
Dr. Teresa Clark  tclark24@murraystate.edu  270-809-6956

Chester County Schools
Dr. Jill Hodum  jill.hodum@chestercountyschools.org  731-989-8110

Chester County Schools
Mrs. Melissa Judd  Melissa.judd@chestercountyschools.org  731-989-8110

STATEMENT BY PERSON AGREEING TO PARTICIPATE IN THIS STUDY

I have read this informed consent document. I have the authority to approve research involving students at this school. I freely and voluntarily choose to allow the researcher to conduct this study under the conditions outlined above. I also acknowledge that I will receive a copy of this form.

WHOM TO CONTACT:

Murray State University
Dr. Teresa Clark  tclark24@murraystate.edu  270-809-6956

Chester County Schools
Dr. Jill Hodum  jill.hodum@chestercountyschools.org  731-989-8110

Chester County Schools

Appendix E
STATEMENT BY PERSON AGREEING TO PARTICIPATE IN THIS STUDY

I understand and agree to participate in the mentoring program for the 2016-17 school year.

________________________________________  ___________________
Student Signature  Date

THE DATED APPROVAL STAMP ON THIS CONSENT FORM INDICATES THAT THIS PROJECT HAS BEEN REVIEWED AND APPROVED BY THE MURRAY STATE UNIVERSITY INSTITUTIONAL REVIEW BOARD (IRB) FOR THE PROTECTION OF HUMAN SUBJECTS. ANY QUESTIONS PERTAINING TO YOUR RIGHTS AS A PARTICIPANT SHOULD BE BROUGHT TO THE ATTENTION OF THE IRB COORDINATOR AT (270) 809-2916 OR msu.irb@murraystate.edu. ANY QUESTIONS ABOUT THE CONDUCT OF THIS RESEARCH PROJECT SHOULD BE BROUGHT TO THE ATTENTION OF DR. TERA CLARK: tclark24@murraystate.edu OR (270) 809-6956.
Appendix F

2016-17 Student Information

This is the basic information needed for students to participate in the mentoring program at Chester County Middle School.

Name:

____________________________________

Student Email:

____________________________________

Grade Level:

☐ 4th grade
☐ 5th grade

Homeroom Teacher:

____________________________________

Gender:

☐ Male
☐ Female

Race:

☐ African American
☐ White
☐ Hispanic
☐ Native American
☐ Asian/Pacific Islander
☐ Other
  o If other, please list____________________________________

Favorite Sport or Activity:

____________________________________

List any specific College or Career interests that you would like a mentor to help you research for long-term goal-setting:

____________________________________
Appendix G

Mentor Availability for Mentoring Program

This form will allow the researcher to use the mentor availability information to pair all mentors with a student at an appropriate time for both parties.

1. Name:

________________________________________

2. Email:

________________________________________

3. How often are you able to meet with a student? (Mark only one).
   ○ Every week
   ○ Every other week

4. Select the day(s) of the week you are able to meet with a student (select all that apply).
   ○ Monday
   ○ Tuesday
   ○ Wednesday
   ○ Thursday
   ○ Friday

5. Please list available times you are able to meet with a student on specific weekdays.
   (Example: Tuesdays 9:00-9:30, Thursdays 1:05-1:50)

________________________________________

________________________________________

________________________________________

________________________________________

________________________________________
### Appendix H

Table H1

<table>
<thead>
<tr>
<th></th>
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<th>Max.</th>
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Notes. N = number, M = mean, SD = standard deviation, Min. = minimum, Max. = maximum.
Table H2

<table>
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<th>SD</th>
<th>Min</th>
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Notes. N = number, M = mean, SD = standard deviation, Min. = minimum, Max. = maximum.
Table H3

*Paired Samples T-test Descriptives for Math in Experimental Group*

<table>
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<th>Semester</th>
<th>Mean</th>
<th>SD</th>
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<tbody>
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<td>Spring 2016</td>
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<td>24.63</td>
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<tr>
<td>Fall 2016</td>
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<td>23.10</td>
</tr>
<tr>
<td>Spring 2017</td>
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<td>24.44</td>
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</table>

Notes. SD = standard deviation
### Table H4

**Paired Samples T-Tests for Math in Experimental Group**

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<tr>
<th>Semester</th>
<th>N</th>
<th>r</th>
<th>p</th>
<th>t</th>
<th>df</th>
<th>p</th>
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<td>.000</td>
<td>12.005</td>
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<td>.000</td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>W 2015 vs.</td>
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<td>.000</td>
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<td>37</td>
<td>.000</td>
</tr>
<tr>
<td>Sp 2017</td>
<td></td>
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<td></td>
<td></td>
</tr>
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<td>Sp 16 vs.</td>
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<td>.000</td>
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<td>.006</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Fa 2016 vs.</td>
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<td>.000</td>
</tr>
<tr>
<td>Sp 2017</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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*Notes. N = number, r = variable strength, p = significance, t = measures difference between means, df = degrees of freedom.*
Table H5

Pearson Correlations for Math

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<th>Fall 2016</th>
<th>Spring 2017</th>
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<tbody>
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Table H6

*Pearson Correlations for Reading*

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<td>Fall 2016</td>
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<td>.846</td>
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### Table H7

**Paired Samples T-test Descriptives for Math for Control Group**

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<th>Semester</th>
<th>Mean</th>
<th>SD</th>
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</thead>
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<td>Fa 2015</td>
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<tr>
<td>W 2015</td>
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<td>Sp 2016</td>
<td>463.27</td>
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<tr>
<td>Fa 2016</td>
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<td>Sp 2017</td>
<td>478.44</td>
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</table>

Note. SD = standard deviation
### Table H8

*Correlations and Paired Samples T-Tests for Math Control Group*

<table>
<thead>
<tr>
<th>Semester</th>
<th>N</th>
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<th>p</th>
<th>t</th>
<th>df</th>
<th>p</th>
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</thead>
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<tr>
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</tr>
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<td>Sp 2017</td>
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<td></td>
<td></td>
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<tr>
<td>W 2015 vs.</td>
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<tr>
<td>Sp 2017</td>
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</tbody>
</table>

*Notes. N = number, r. = variable strength, p = significance, t = measures difference between means, df = degrees of freedom.*
<table>
<thead>
<tr>
<th>Semester</th>
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</thead>
<tbody>
<tr>
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<td>Sp 2017</td>
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</table>

Note. SD = standard deviation
Table H10

Paired Samples T-Tests for Reading for Experimental Group

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<tr>
<th>Semester</th>
<th>N</th>
<th>r.</th>
<th>p.</th>
<th>t</th>
<th>df</th>
<th>p.</th>
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</thead>
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<tr>
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<td>.000</td>
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Notes. N = number, r. = variable strength, p = significance, t = measures difference between means, df = degrees of freedom.
Table H11

Paired Samples T-test Descriptives for Reading for Control Group

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</tr>
<tr>
<td>Sp 2017</td>
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<td>39.82</td>
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</table>

Note. SD = standard deviation
Table H12

<table>
<thead>
<tr>
<th>Semester</th>
<th>N</th>
<th>r.</th>
<th>p.</th>
<th>t</th>
<th>d</th>
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<td>Fa 2015 vs. Sp 2017</td>
<td>67</td>
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<td>12.25</td>
<td>66</td>
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<td>W 2015 vs. Sp 2017</td>
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<td>.000</td>
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<td>66</td>
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<tr>
<td>Sp 2016 vs. Sp 2017</td>
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<td>.642</td>
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<td>6.08</td>
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<tr>
<td>Fa 2016 vs. Sp 2017</td>
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<td>.000</td>
<td>13.08</td>
<td>79</td>
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Notes. N = number, r. = variable strength, p = significance, t = measures difference between means, df = degrees of freedom.
Table H13

*Independent Samples T-Tests for Math for Control and Experimental Groups*

<table>
<thead>
<tr>
<th>Semester</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p</th>
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</table>

Notes: n = number, m = mean, SD = standard deviation, t = distance between the means, df = degrees of freedom, p = significance. Levene’s test for equality of variances was insignificant.
### Table H14

*Independent Samples T-Tests for Reading for Control and Experimental Groups*

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<th>M</th>
<th>SD</th>
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<tbody>
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</tbody>
</table>

Notes: n = number, m = mean, SD = standard deviation, t = distance between the means, df = degrees of freedom, p = significance. Levene’s test for equality of variances was insignificant.
### Table H15

*Wilcoxon Signed-Ranks Test Descriptives for Experimental Group Discipline Referrals*

<table>
<thead>
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<th>Semester</th>
<th>$N$</th>
<th>Means</th>
<th>$SD$</th>
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<tbody>
<tr>
<td>Fall 2016</td>
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<td>46</td>
<td>.413</td>
<td>1.05</td>
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</table>

Notes. $N =$ participants. $SD =$ standard deviation.
Table H16

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Min.</th>
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<tbody>
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<td>1.05</td>
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<td>5</td>
</tr>
</tbody>
</table>

Notes. N = number, M = mean, SD = standard deviation, Min. = minimum, Max. = maximum
### Table H17

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Min.</th>
<th>Max.</th>
</tr>
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Notes. N = number, M = mean, SD = standard deviation, Min. = minimum, Max. = maximum