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### The Personality matching of mentors and mentees in a youth mentoring program

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Running head: MENTOR-MENTEE PERSONALITY MATCHING

The personality matching of mentors and mentees in a youth mentoring program

Graduate Thesis

Submitted to the Faculty

Of the School Psychology Program

College of Liberal Arts

ROCHESTER INSTITUTE OF TECHNOLOGY

By

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In Partial Fulfillment of the Requirements

for the Degree of

Master of Science and

Advanced Graduate Certificate

Rochester, New York

4/9/12

(date)

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## Abstract

This study examined the effectiveness of personality matching of high school mentors with elementary school mentees in an afterschool youth mentoring program. Study participants attended a Western New York school district including 20 mentors from grades 9 to 12, and 16 mentees from grades 4 to 6. Effectiveness was analyzed using three outcome measures: social connectedness, grade average, and school absences. Results showed evidence of iatrogenic effects for mentors. Mentors' performance declined in areas of social connectedness, school attendance, and grade average. Mentees did not have significant improvement in grade average and school attendance. Similar personality matched mentees displayed performance declines in all outcome measures over the length of the mentoring program. Dissimilar personality matched mentees had mixed results with improvements in grade average and school attendance, but declines in social connectedness. Results suggest that dissimilar personality matched mentees had better outcome improvements in grade average, school attendance, and social connectedness compared to similar personality matched mentees.

### Introduction

In the United States mentoring programs are a growing trend in psycho-socio-academic interventions (Guetzloe, 1997). These programs typically involve an older mentor assisting a younger mentee with improving in a wide variety of positive objectives (Dubois, Holloway, Valentine, & Cooper, 2002; Guetzloe, 1997; Karcher, 2005a, 2007). The aims of these programs are as varied and diverse as the programs are plentiful in numbers (Guetzloe, 1997).

Mentoring can happen between an adolescent and a child, an adult and an adolescent, a teacher and a student, and an experienced employee and a new employee (Guetzloe, 1997). Mentoring is used for various purposes including improving students' academic performance, improving school attendance, improving job performance, decreasing deviant behavior, and improving connectedness to social institutions (Campbell & Campbell, 2007; Guetzloe, 1997; Karcher 2005a; Stoltz, 2005).

Dubois, Holloway, Valentine, and Cooper (2002) conducted a meta-analysis that identified the "best practices" for mentoring programs. In their analyses across 55 studies, the most effective mentoring programs typically included designated setting for mentoring activities, monitored implementation of the program, ongoing training of mentors, screening willing mentors, matching mentors and mentees, mentor training before matching, and having supervision of mentors. Unfortunately this meta-analysis was unable to separate which practices contributed to better outcome effects; however, matching was one of several practices that was associated with an increased likelihood of positive outcomes.

In addition, several core components of mentoring programs have not been examined for effectiveness because many mentoring programs have been developed without specific goals and methods to analyze the effectiveness of specific goals (Dubois et al., 2002). There is limited

research published regarding the matching of mentors and mentees as a result. Studies have shown some support for matching based on ethnicity (Dubois et al., 2002; Santos & Reigadas, 2002; Thile & Matt, 1995,) and gender (Lockwood, 2006, for women), but there is still mixed support for the matching of individuals based on ethnicity (Atkinson, Neville, & Casas, 1991; Campbell & Campbell, 2007) and gender (Dubois et al., 2002; Lockwood, 2006, for men). Perhaps an underlying variable (personality) is responsible for the inconsistent findings of ethnic and gender matching.

Limited research has examined the role of personality in matching mentors and mentees. Garner, Byars, Greenwood, and Garner (2003) found that the 16PF personality test was not appropriate for selecting mentors; however they recommended that further investigation should be done regarding the role of personality factors in developing mentoring relationships. When examining a community mentoring program, Cox (2005) reported that personality matching using personality tests was not even a consideration for project coordinators. Instead, matches were made based on “hunches”. When coordinators were correct in their matches, it confirmed the belief that these coordinators were using unbiased criteria to make their match (Cox, 2005). When coordinators were incorrect in their matches, it was attributed to personality being an ineffective matching tool (Cox, 2005). When matches are made based on personality, bias should be a consideration. Hale (2000, as cited in Cox, 2005) described these matches as highly subjective. Using a personality test would reduce bias as matching consideration is based on set criteria.

A lack of published research has specifically compared the effects of similar and dissimilar personality matching. As a result, this researcher extrapolated group and dyad research to develop possible hypotheses. Watson, Kumar, and Michaelsen (1993) cited several sources

that explain that homogeneous groups typically lead to better relationships within the group (Anderson, 1971; Feldman, Sam, McDonald, & Bechtel, 1980; Steiner, 1972). Cuperman and Ickes (2009) also found similar personality dyads had better initial interactions compared to dissimilar personality dyads. The drawback of homogeneous grouping is that individuals may show less growth as compared to heterogeneous groupings. Conversely, heterogeneous groups and dyads lead to weaker relationships at the beginning of interactions (Cuperman & Ickes, 2009; Watson, Kumar, & Michaelson, 1993). These initial differences in interactions diminish over time as compared to homogeneous groups (Watson, Kumar, & Michaelson) and dyads (Turban, Dougherty, & Lee, 2002) and indicate greater growth as a result. Time may be an important consideration to the outcome of mentoring programs that are matched on homogeneous personality or dissimilar personality.

Due to the gap in the literature regarding mentor-mentee matching there is a need to compare mentor-mentee relationships that are matched on similar personality traits and dissimilar personality traits. In this study however, mentor-mentee matches were pre-determined without using a personality measure. As a result, mentors and mentees were analyzed based on outcome measures to gauge whether “similar” personality or “dissimilar” personality provided better results.

It was hypothesized that matching mentors and mentees based on personality is effective in the similar and dissimilar personality groups, as it was also hypothesized that all mentees would benefit from participation regardless of mentor-mentee personality match. It was also hypothesized that the matches that have similar personalities would be more effective than the matches that have dissimilar personalities based on mentee social connectedness responses. Another hypothesis was that the dissimilar personality match mentees would have greater



improvement in grades and school attendance compared to the similar personality match mentees. Lastly, it was hypothesized that the mentor group, will have a statistically significant level of improvement overall across social connectedness, grades, and attendance.

### *Definition of Terms*

*Mentoring*, is defined as a consistent meeting between a high school student and an elementary school student either individually or as a group, in pursuit of improving that student directly or indirectly in social connectedness and directly in academics. Mentoring also involves displaying positive role modeling through the use of activities with the younger student.

*Personality* is defined as the underlying characteristics that determine how an individual behaves. Personality is measured in this research based on the five-factor model of personality: extraversion, agreeableness, conscientiousness, neuroticism, and openness.

*Mentor* is defined as the student who is in high school, whose role is to help an assigned student.

*Mentee* is defined as the student who is in elementary school, and is primarily being helped by an assigned mentor.

*Mentoring program* is defined as an intervention that attempts to improve academic performance and social connectedness for mentees, as well as mentors. The mentoring program in this research has been occurring for 14 years and has shown prior effectiveness through average grade improvement.

*Similar personality matches* are defined as the mentor and mentee matches that have similar personality profiles based on results of the Five Factor Personality Inventory-Children.

*Dissimilar personality matches* are defined as the mentor and mentee matches that have dissimilar personality profiles based on results of the Five Factor Personality Inventory-Children.

## Literature Review

### *Introduction*

Mentoring programs are a growing phenomenon in psycho-socio-academic interventions across the United States (Guetzloe, 1997). These programs typically involve an older mentor assisting a younger mentee. The aims of these programs are as varied and diverse as they are plentiful in numbers. Whereas a wide range of mentoring programs exist, there are gaps in research that address the best practices of establishing and maintaining an effective mentoring program (Dubois, Holloway, Valentine, & Cooper, 2002). In comparison, all of the specific components of a mentor/mentee relationship have not been analyzed (Dubois et al., 2002) such as matching mentors and mentees on personality.

The following literature review will address the available research related to the personality matching of mentors and mentee in a mentoring program. Matching mentors with mentees based on personality has not had published research. Research on the impact of personality on the effectiveness of the mentor/mentee relationship may be beneficial to investigate (Garner, Byars, & Greenwood, 2003). No research to date has examined whether similarities or differences in personalities between mentors and mentees improve the relationship. Even so, there is much history of mentoring programs to be examined and accounted for.

### *Natural Mentors*

Before discussing mentoring programs, it is important to describe the rationale for using these methods of interventions through research literature. Holt, Buckley, and Whelan (2008) found that having a strong relationship with and attachment to a caring adult was a particular strong factor for creating resilience in children. This finding was also supported by Osofsky

(1999) and Zimmerman, Bingenheimer, and Notaro (2002). Zimmerman et al. (2002) described natural mentors as being an adult age 25 or older that the adolescent looked up to for support, guidance and inspiration (Zimmerman, Bingenheimer, & Notaro, 2002). These authors found that 52 percent of their sample had a natural mentor, making them less likely to smoke marijuana, be involved in nonviolent deviant behavior, and have negative school attitudes (Zimmerman, Bingenheimer, & Notaro, 2002). In addition, the authors found that having a natural mentor was unrelated to the adolescent having anxiety or depression (Zimmerman, Bingenheimer, & Notaro, 2002). In another study, adolescent mothers who had adult mentors were found to have less depressive and anxiety symptoms over time (Hurd & Zimmerman, 2010). Although natural mentoring and organized mentoring programs are two distinctly different areas of research, the knowledge gained through natural mentoring can be beneficial to guiding organized mentoring programs. The purpose behind many mentoring programs including the one used in this research is to provide a role model that may not have occurred naturally, but will still result in positive gains for the child.

### *Mentoring programs overview*

In an informative article on the general landscape of mentoring programs in schools and communities from their origins to their current level Guetzloe (1997) traced mentoring in the United States back to the late 19<sup>th</sup> century. “Friendly Visiting” was a program that had middle-class adults serve as role models for lower-class children (Freedman, 1993, as cited in Guetzloe, 1997). One of the most well-known mentoring programs, Big Brothers, was later formed in 1904 and eventually became Big Brothers/Big Sisters of America.

Over the last 30 years there has been a significant growth in mentoring programs in America (Guetzloe, 1997). These programs typically aim to improve a number of areas

including: academics, moral development, interpersonal skills, intrapersonal skills, and career search (Guetzloe, 1997).

All mentoring programs attempt to establish a positive relationship between a mentor, typically an older individual, and a younger person in need of modeling (Dubois, Holloway, Valentine, & Cooper, 2002; Guetzloe, 1997; Karcher, 2005a, 2007). There are five categories of mentoring programs: traditional, long-term focused activities program, short-term focused activities program, team mentoring, and group mentoring (Saito & Blyth, 1992). These types can also be categorized into different contexts including school, community, business-education partnerships, and higher education-sponsored programs (Crockett & Smink, 1991). The sources of funding that are available for mentoring programs include: national foundations, community-minded corporations, and local, state, and federal government (Guetzloe, 1997).

Dubois, Holloway, Valentine, and Cooper (2002) developed a quantitative analysis to identify standards on mentoring programs as described by Guetzloe.

Dubois et al. (2002) conducted a meta-analysis of 55 studies to objectively assess the overall effectiveness of mentoring programs. The authors were also interested in determining the specific components of mentoring programs that are particularly effective such as program design, youth characteristics, and mentor-mentee relationships (Dubois et al., 2002; Guetzloe, 1997). All of the mentoring programs described involved an older individual mentoring a younger individual (Dubois et al., 2002). Criteria for studies to be included in the analyses were: having a one-on-one relationship, examining the effectiveness of the mentoring program, and mentees with a mean age of less than 19 (Dubois et al., 2002).

Overall, Dubois et al. (2002) found that the mentored youth scored an average of one-eighth of a standard deviation ( $d=.14$ ) higher than the youth who did not participate in the

mentoring programs. This benefit was determined across various methodologies, types of program, and types of measurement. The authors identified components as either ‘empirically’ based best practices or ‘theoretically’ based best practices. Empirically-based best practices included those that designated a setting for mentoring activities, monitored implementation, used mentors having a helping background, gave mentors ongoing training, used structured activities for mentors/youth, included parent support/involvement, and set expectations for a set frequency of contact. ‘Theoretically’ based best practices included those that designated the screening of prospective mentors, the matching of mentors and mentees, mentor initial training, and the supervision of mentors. The overall findings found only a slight benefit to mentees in these mentoring programs; however, when “best practices” were used benefits were significantly larger.

There were numerous moderating variables as well. Moderators of outcomes included monitoring implementation, ongoing training of mentors, an expectation of frequent contact, and low socioeconomic status. Findings also indicated that having 6 or more ‘theoretically’ based best practices, or having 4 or more ‘Empirically’ based best practices significantly improved the effectiveness of mentoring programs. Unfortunately, individual components were unable to be analyzed separately to determine which components were most effective. Dubois et al. also found that relationships of greater intensity resulted in one quarter to one third of a standard deviation of greater effects than other relationships.

Dubois et al. concluded their article by recommending that future mentoring programs adhere to the ‘theoretically’ and ‘empirically’ based best practices as much as possible for beneficial results. The authors found support for the effectiveness of youth mentoring programs. However, Dubois et al. (2002) also noted the lack of evidence showing the benefits of mentoring

for youth who are at-risk due to personal characteristics (Dubois et al., 2002). Dubois et al. (2002) found limited emotional/psychological outcomes in short-term and long-term analyses of school-based mentoring programs. Although these authors found school-based mentoring programs to have minimal benefits, one school-based mentoring model, the Cross-Age Mentoring Program, has shown desirable outcomes (Karcher, 2005a; 2008).

The Cross-Age Mentoring Program (CAMP) is a mentoring program where high-school students mentor younger, typically middle school aged students (Karcher, 2008). Unlike many mentoring programs that require an adult as a mentor, this program attends to the developmental demands of the mentor as well as the mentee. In prior studies by Karcher (2005; 2007; as cited in 2008), the author recommended a highly structured mentoring program for cross-age peer mentoring. Karcher claimed that successful programs positively shift the school climate, improve interpersonal skills and create unity amongst the greater group of people (e.g. school).

Karcher described that his CAMP model can be conducted in two formats: the cross-campus model with students in the same school district (once a week afterschool) and the outreach model with students from different school districts (one Saturday a month). Both formats require a two-week camp in the summer along with appropriate curriculum. The CAMP model has several components including: connectedness-to-self activities, connectedness-to-others activities, connectedness-to-society activities, ongoing mentor training, structured matching of mentor and mentee, structured termination of the relationship either prematurely or at the end of the year, and developmental tiers of mentoring. Karcher also described that the best way to measure the effects of the CAMP program is using a similar comparison group that does not receive any intervention.

Karcher (2007) described that mentees of the mentoring program had improvements in connectedness to “school and peers, academic achievement, social skills, behavior problems, and conventional attitudes toward illicit and antisocial behavior” (as cited in Karcher, 2008). These effects are also more substantial when using high-school mentors rather than middle-school mentors with middle-school mentees (Karcher, 2007). The CAMP model has also improved the academic achievement and self-esteem of mentors (Karcher, 2008). CAMP appears to be more beneficial than other similar models because of its high level of structure and training, however, Karcher (2008) recommended more research to be done to replicate this study’s results.

Karcher (2005a) also examined the impact of mentor’s attendance to mentee’s outcomes six months after the conclusion of developmental mentoring. Karcher defined connectedness as “youths’ activity with and affection for the people, places, and activities within their life” (p.66). According to the author, connectedness has been shown to increase success in school and decrease involvement in risky behavior.

Karcher explained the purpose of his study as being a result of criticisms that adolescent mentors are not mature enough to effectively mentor. Immature mentoring can be easily measured by recording absences and premature terminations. Several studies have found that frequency of contact predicted better outcomes than just the length of the mentoring program’s involvement possibly due to the amount of attention the mentee is gaining (Karcher, 2005a). Furthermore, Karcher surmised that interpersonal skills like empathy, genuineness, and consistency may be more important than the actual content of the structured mentoring program.

Karcher (2005a) used a pre/post randomized experimental design with high and low risk youth. A comparison group of similar risk was also used. There were originally 33 mentees who were in the fourth and fifth grades, with 24 youth completing all data requirements. Thirty-three

mentors from grade eight to twelve were involved in the program. These mentors received eight hours of training and most had two hours of monthly supervision. Risk identification was determined based on teacher ratings of a checklist that was developed to gauge risk based on family, academic, school/peer, and behavioral risks. Karcher also used the following measures: the Hemingway: Measure of PRE-adolescent Connectedness (to measure connectedness to parents, friends, school, and reading), Harter Self-Perception Scale for Children (to measure self-esteem), Primary Mental Health Project Child Rating Scale (to measure social and school competence) and attendance. The mentoring program itself began with a six-hour Saturday orientation where mentors and mentees self-selected each other. Mentoring was done one-on-one, twice a week, but through a group format. There was also a monthly Saturday event that involved the mentee's parents.

Results showed that mentor attendance was related to changes in social skills, self-management, self-esteem, and changes in total connectedness in mentees. Mentor attendance did not relate to mentee connectedness to parents and school. Karcher found positive gains in mentees' connectedness to parents and school, regardless of mentor's attendance. The author also described that there are iatrogenic effects of developmental mentoring when mentors were inconsistent. Specifically, when mentors were not consistently meeting with mentees, there was an increased likelihood of negative effects in mentees' perceived unattractiveness and self-esteem. Karcher concluded that cross-age peer mentoring could be effective, with the quality of the mentoring relationship appearing to be more important than program curricula.

Mathews, Fawcett, and Sheldon (2009) conducted a mentoring program focused on three children with a history of maltreatment. The authors explained that a mentoring program is needed for children who suffer maltreatment because they tend to have poor relationships with



peers, struggle in dealing with peer acceptance, and withdraw socially. Mathews, Fawcett, and Sheldon aimed to examine the effects of peer mentoring along with social skills training in the socialization of three children with histories of maltreatment. Mathews, Fawcett, and Sheldon hypothesized that social skills training and peer mentoring would increase positive social interactions, social and communication skills, and social competence.

Mathews, Fawcett, and Sheldon (2009) held an after-school program in a Midwestern city for three mentees and three mentors. The mentees were all African-American and two were monozygotic twins. The peer mentors were children with a history of pro-social behaviors. The program took place for over one year and data was collected using direct observation, pre- and post-intervention rating scales, and a social-validity assessment. Direct observation was used to measure positive oral interaction, positive social activity, and positive interaction with an adult. Pre- and post-data was gained using the Achenbach Child Behavior Checklist-Parent version and the Social Skills Rating Scale.

Mathews, Fawcett, and Sheldon (2009) found that their peer engagement intervention increased the mentees amount of verbal interactions and social activities with peers. Benefits were also seen when data was collected four to six weeks after the end of the intervention by continuing to demonstrate pro-social behaviors and eliminating socially withdrawn behavior. There were several limitations to the study. The authors used a convenience sample which limits the ability to generalize the findings. Another limitation was that all children involved in the study were of the same gender and same ethnicity, affecting the generalization of this study's results. The sample was very small as well, further affecting potential generalization.

Mathews, Fawcett, and Sheldon's study followed a multiple baseline single-subject study design, which allowed for a clear analysis of the individual changes made from the intervention

that was applied. This study was also able to use peers in a way (mentoring) to help other children's social competence. The authors suggested that future research look into volunteer peer-mentoring programs for youth, as well as the screening of mentors.

The previous studies have shown positive benefits for mentees (Dubois et al., 2002, Mathews, Fawcett, & Sheldon, 2009, Karcher, 2005a, 2007) and mentors (Karcher, 2008). DuBois et al. (2002) used a meta-analysis to find that mentoring programs give a slight benefit to mentees. Mathews, Fawcett, and Sheldon (2009) found benefits for mentees in their mentoring program whereas Karcher's CAMP model also has shown benefits for mentees as well as mentors. These benefits are enhanced when using "best practices" such as matching mentors and mentees (DuBois et al., 2002). This research was unable to identify which components best benefitted mentees, but was able to establish a set of criteria that mentoring programs should use to increase their probability of being a beneficial mentoring program for mentees (DuBois et al., 2002).

#### *Deviant peer interaction*

Group interventions such as mentoring programs generally have good intentions; however, possible negative effects from deviant peers are a serious concern. Dishion, McCord, and Poulin (1999) reviewed the available research regarding the negative (iatrogenic) effects of peer-group interventions. According to Lipsey (1992), approximately 29 percent of all controlled, adolescent intervention studies have had negative effects. The authors hypothesized that high-risk young adolescents will increase their problem behavior during the peer-group intervention session. The authors tested this hypothesis by reviewing prior studies.

Overall, Dishion, McCord, and Poulin found several common findings across studies. The authors found that random assignment of peer groups led to a higher likelihood of increased

problem behavior. Also, older, more deviant children were more likely to have negative effects from peer grouping. Other risk factors included having poor relationships and high delinquency prior to intervention (Poulin, Dishion, & Haas, 1999). Finally, the authors described the benefits of involving parents and family members in the peer-group intervention. Dishion, McCord, and Poulin (1999) suggested that future research align treatment outcome goals that can be applied to the participant's environments. The authors concluded their article by calling for researchers to become more educated on the potential negative effects of peer-group interventions (Dishion, McCord, & Poulin, 1999). Since peer-group interactions are essential components of this research project, potential negative effects will be controlled by using a structured mentoring program during periods of group interaction.

Burt, McGue, and Iacono (2009) examined the association between externalizing behavior and deviant friends in monozygotic twins. Burt, McGue, and Iacono hypothesized that a nonshared environment of peers would cause one twin to be more deviant than the other. The authors had 454 pairs of monozygotic twins that were measured at age 14 and 17 using a cross-lagged twin differences design. Burt, McGue, and Iacono analyzed rates of externalizing behaviors using the Delinquent Behavior Index and deviant peer affiliation using the Friends Inventory.

Results of this study found that a nonshared peer affiliation between twins did not cause the development of bad behaviors, however it did support the hypothesis that a twin with externalizing behavior are more apt to select an environment of deviant peers. The twin with more externalizing behavior at age 14 consistently had more deviant peers at age 17 than the other twin. The authors reasoned that adolescents with higher levels of externalizing behaviors shape their environment to increase the chances of being involved with deviant peers, stating that

it was more likely that deviant peer affiliations were truly different peers and not just the same peers that the twins perceived differently. Burt, McGue, and Iacono also found that deviant peer affiliation did not predict externalizing behavior three years later, whereas externalizing behavior did predict future externalizing behavior and deviant peer affiliations. This finding supports the notion that peer influence is not a critical cause of poor outcomes for adolescents. It is important to consider peer influence within a mentoring program as it may even protect participants from harm.

Burt, McGue, and Iacono (2009) described the limitations of the study. One limitation was using only adolescent self-reports making it still uncertain whether peer affiliation results would be different. Along these lines, it is unclear whether deviant peer affiliation is a result of truly different friends between the twins, or a difference in perception of peers between the twins. Another limitation is the possible overlap of externalizing behavior in both assessment periods (age 14 and 17). Although deviant peer affiliation was shown to not contribute to future problem behavior, positive peer relationships may reduce externalizing behavior and future problems. Students who prefer deviant environments may benefit from exposure to non-deviant environments such as mentoring programs and learn to enjoy the benefits of these settings.

Deviant youth should not be in a group intervention with other deviant youth because of the iatrogenic effects of these interactions (Dishion, McCord, & Poulin, 1999, Poulin, Dishion, & Haas, 1999, Lipsey, 1992, Burt, McGue, & Iacono, 2009). Lipsey (1992) reported that 29 percent of published adolescent interventions had negative effects. Older deviant youth particularly displayed more negative effects than younger deviant youth (Dishion, McCord, & Poulin, 1999). In addition, random assignment of deviant youth led to negative outcomes (Dishion, McCord, & Poulin, 1999). Mentoring programs should aim to avoid these circumstances. While Dishion,

McCord, and Poulin's (1999) research implies that social interactions lead to negative effects among youth, Burt, McGue, and Iacono's (2009) research found that interacting with deviant youth was less of an indicator of deviance than externalizing behavior exhibited. Specifically, children who display externalizing behavior are more likely to select deviant peer groups and deviant interactions, although it is not the actual interactions that cause the deviance as much as prior externalizing behavior. Using this information, it can be surmised that a youth mentoring program can be used within a structured environment, especially when conditions emphasize one-on-one interactions with prosocial youth.

#### *Matching mentors with mentees*

One proactive strategy for controlling the negative effects of deviant peer interaction is the matching of mentors and mentees based on specific criteria. There is research of varying results specifically analyzing the effects of mentor-mentee matching (Cox, 2005, Campbell & Campbell, 2007, Dubois et al., 2002). An article by Cox (2005) used qualitative evidence from a community-mentoring project, as well as selected information from 52 mentoring dyads to examine the effectiveness of the matching process involved in mentoring programs. During Cox's community mentoring project, she considered five factors to match dyads: age, geographical location and time restrictions, gender, age of mentees' children, and career aims, interests, cultural background, or current educational attainment. Participants also filled out a matching questionnaire. There was no consideration of matching based on personality.

Some authors such as Kram (1988) described the process of mentees self-selecting mentors as a conscious and unconscious process where the mentor is selected based on the mentee's identification of the mentor's desirable attributes. Conversely, the author described how critics point out that "spontaneous" role modeling might cause the modeling of behaviors,

values, and attitudes that should not be learned by the mentee (Monaghan & Lunt, 1992).

Whereas proponents of matching argued that the quality of match between the two parties affects the benefits of mentoring (Bush et al., 1996), others claimed that forced matching restricts relationships, especially in regards to the spontaneity and knowledge gained from learning about another person.

Cox (2005) explained that there is ongoing debate regarding whether there needs to be an age difference as well as a gender similarity between mentor and mentee. Cox (2005) also described that none of the mentoring programs researched had considered using personality tests, instead relying on clinical judgment. Interestingly, when personality was matched using “hunches,” similar personalities between mentors and mentees appeared to be less effective than different personalities (Clutterbuck, 1998). Clutterbuck (1998) was cited describing a theoretical belief that more learning occurs where there is a minimum similarity of experience and minimum similarity of personality. In general, the author found that matching was based on judgments of program coordinators and only after the relationships were established did coordinators satisfactorily justify the matching.

Cox concluded her article by emphasizing the importance of certain elements of training mentors. Because typical matching practices do not improve the ability for the mentoring relationship to have spontaneity, mentors should be trained to maximize this area of relationship building as well as capitalizing on coincidences. Cox noted that of the variables to be matched on, personality is the most intriguing, particularly with the use of personality tests (as cited from Hale, 2000). Specifically, Hale (2000) was interested in the different learning styles of mentors and mentees. Along these lines, using objective personality tests with strong psychometric properties could also justify the use of matching in the mentor process.

Although Cox's article was against the use of matching mentors and mentees, some specific areas of matching (gender and ethnicity) have evidence of being related to a successful mentoring relationship (The Ohio State University, 1988, as cited in Crockett & Smink, 1991).

Campbell and Campbell investigated the academic impacts of mentoring as well as the matching of mentors. Three hundred thirty nine undergraduate students were mentored by faculty members. Three hundred thirty-nine other undergraduate student records served as controls based on similar gender, ethnicity, class level, and entering grade point average. The authors posited that many studies assume that similar backgrounds in gender and ethnicity result in better mentor-mentee relations. Whereas some studies show support for gender and ethnic matching (Dubois, Holloway, Valentine, & Cooper, 2002; Santos & Reigadas, 2002), other studies have found matching on gender or ethnic background to be unrelated to outcome, either in relations or mentor effectiveness (Atkinson et al., 1991; Campbell & Campbell, 1997; Hickson, 2002). The authors also wrote that few studies have investigated the impact of mentoring on academics. Campbell and Campbell had two primary hypotheses: 1) That the students in the mentoring program will complete more class credits and achieve a higher GPA than students not in the mentoring program and 2) Students in the mentoring program will be more likely to remain in school and graduate than the control group. The authors also explored two other hypotheses regarding matching: 1) Academic retention and grade point average will be greater when there is a gender match between mentor and student and 2) Academic retention and grade point average will be greater when there is a match in ethnicity between mentor and student.

Mentors were inquired to participate through a letter with specific information regarding the goals and potential benefits of mentoring relationships. Faculty mentored one to four students

for one academic year, matched based on academic interest. Interestingly and perhaps related to the results was that less than 1 percent of the participants involved (mentors and protégés) stated a preference for a gender or ethnic match.

At the end of an academic school year (two semesters), the mentees completed 0.84 more class credits per semester and had 0.16 of a grade point higher than their control. After eight years, the mentees had completed 7.7 more units compared to the control. These results supported the first primary hypothesis. After one year, the dropout rate for mentees was 14.5%, lower than the 26.3% controls group dropout rate. Although the mentees dropped out of school at a lower rate, the differences at one year and at eight years were not statistically significant.

Matching based on gender yielded no significant results. The authors' first hypothesis regarding matching was not supported due to the overrepresentation of women. Regarding ethnic matching, there was no significant difference between overall GPA for the first year mentees and control students; however, students who were involved in ethnic pairing were more likely to enter a graduate program on campus. This finding indicated some support for long-term positive effects of ethnic matching. Campbell and Campbell concluded that matching mentors and mentees when "feasible and convenient" (p.145) is helpful. The authors also suggested for future research to use more goal-based outcomes, and match according to similar academic background. Although studies have shown some support for matching based on ethnicity and gender (Dubois et al., 2002), there is still mixed support for the matching of individuals based on these factors (Campbell & Campbell, 2007). There is also no published research regarding information on the effects of matching mentors and mentees on dissimilar ethnicity and/or gender. Perhaps an underlying variable (personality) is responsible for the inconsistent findings of ethnic and gender matching.



Matching mentors and mentees has had mixed results in research. Most matching has been made based on gender or ethnicity similarity. Campbell and Campbell (2007) did not find support for matching based on gender, whereas other studies did find support for gender matching (DuBois et al., 2002). Similarly, some studies have found support for ethnic matching (Campbell & Campbell, 2007; Santos & Reigadas, 2002) although it is limited. Cox (2005) analyzed a mentoring program that allowed mentees to select mentors. Cox (2005) described how this type of matching may naturally build a positive relationship, however it may also cause the selection of mentors that are poor role models and exhibit characteristics that are popular but risky. Selection criteria based on similar or dissimilar personality types has yet to be conducted within the available mentoring research.

*The role of personality in matching*

Although matching in the mentoring process has had mixed to unfavorable recommendations, very little matching has been based on objectively assessing and matching mentors and mentees based on personality. Personality has been used in mentoring programs before: to analyze mentor effectiveness and as a screening tool for eliminating inappropriate mentors (Garner et al., 2003). Notably missing is the use of personality factors as a matching tool.

Garner et al. (2003) examined the appropriateness of using the 16 PF (personality factors) personality test in selecting mentors. The authors noted several studies that examined personality and mentor effectiveness (Herman & Usita, 1994; Rubin & Thorelli, 1984; Sptiz & MacKinnon, 1993); however, only one study (Herman & Usita, 1994) used a personality test to identify beneficial characteristics of personality. This study aimed to investigate the appropriateness of the 16 PF, and potentially other personality measures, to select good mentors.

Participants were randomly selected from mentors who were involved in the Big Brothers Big Sisters program in the same city. Participants had completed the 16PF as a mentor and results were compared with independent caseworkers' ratings of effectiveness. Results found that two of the 16 personality factors had a statistically significant relationship to mentor effectiveness: vigilance and tension. Moderate levels of vigilance and tension predicted good mentors while having high and low scores in vigilance and/or tension predicted less effective mentors. Due to the low number of personality factors that indicated effective mentoring, these authors felt that the 16PF personality test was not appropriate for selecting mentors. However, Garner et al. (2003) recommended that further investigation be done regarding the role of personality factors in developing mentoring relationships.

Due to the lack of personality research in regards to mentoring programs, areas of research similar to mentoring are investigated. Findings can be extrapolated from other relationships similar to mentor/mentee relationships such as heterogeneous and homogeneous groups, therapist-client relationships, and other dyads.

In Watson, Kumar, and Michaelson's (1993) study, 173 undergraduates were assigned to one of 36 work groups. Groups had four or five members each. Participants remained in the same group over 17 weeks and were asked to engage in several activities as well as four problem-solving tasks. Participants were randomly assigned within their respective cultural group (white American, black American, Hispanic, or foreign national). Groups were also measured four times in regards to group interaction process using Watson and Michaelson's (1988) Group Style Description, a self-report measure.

Results of the study found that homogeneous groups reported better interactions than the heterogeneous groups in the early task periods. After nine weeks, both group types were similar

in their group interaction effectiveness, however, homogeneous groups still outperformed in overall task performance. The authors described how prior research has found that diverse groups excel over homogeneous groups in complex problem-solving tasks (Shaw, 1983). After seventeen weeks, results were similar in interactions and task performance in heterogeneous and homogeneous groups. The authors noted that there was more rapid improvement for the culturally diverse group in both interactions within the group and actual task performance. The authors concluded that there is a stark difference between newly formed group effectiveness and longer-term group effectiveness. Homogeneous groups tend to do better in the short-term, however when heterogeneous groups are given time to learn and grow together, performance is equal across groups and rate of growth is greater due to the initial struggles/deficit of the heterogeneous group.

Similar findings were found in a study that examined dyadic relationships between doctoral student and faculty advisor matches regarding age, gender, and perceived similarity (Ruban, Dougherty, & Lee, 2002). Duration of relationship was found to impact the effects of gender similarity and perceived similarity. In long-term relationships, gender-dissimilar dyads felt they received more mentoring than dyads that had the same gender. Gender dissimilarity was seen as detrimental early in the dyad but was seen as beneficial in long-term relationships. Interestingly, Ruban et al. (2003) did not find any effects of mentoring when analyzed by race-similar dyads and race-dissimilar dyads. One important consideration mentioned by Ruban et al. (2003) was that short-term dyads that were not successful early on may have been terminated. Some dyads that had different genders may have gotten along better early on and produced positive effects. Other dyads that had different genders may have struggled early on and

terminated their relationship. If these dyads stayed together, it may have lowered overall mentoring effects.

Examining group interaction, Cuperman and Ickes (2009) examined college students' categorical types of behavior, self-perception responses, and the Big Five personality factors in initial one-on-one interactions. One hundred seventy four undergraduate participants completed the Big Five Inventory personality measure. After completing the measure participants were brought into a room with one other participant. For six minutes, the two participants were alone in the room. Participants were videotaped during this time and analyzed based on verbal and nonverbal behavior. Similar dyads were determined by similarity on one of the big five personality factors. Dissimilar dyads were determined by differences on one of the big five personality factors.

Cuperman and Ickes (2009) found that the Big Five Inventory predicted behaviors in initial dyadic conversations. The authors found that dyads that had two extraverts or two introverts resulted in good initial interactions when compared to dyads that had one introvert and one extravert. Introverts tended to enjoy the initial interactions of another introvert, and likewise for extroverts. The least rewarding interactions were between two people who were low on Agreeableness. They did not enjoy their interactions and did not disclose very much information. However, having one member who was agreeable made the interaction more pleasant and involving. Agreeableness was also associated with increased talking. In initial interactions, personality similarity generally was beneficial across the five broad areas of personality with the exception of when two individuals scored high on being disagreeable. Cuperman and Ickes concluded that the BFI has behavioral validity and can be used to predict how personality affects

our one-on-one interactions with others. Similar personality measures using the five-factor personality model may also be used to predict interactions between people.

The therapist-client relationship also shares valuable similarities to the mentor-mentee relationship. Even though the therapist and client relationship is a more formal relationship, it has a similar hierarchy of caring as the mentor and mentee (Goldner & Mayseless, 2008). Both types of relationship are aimed at improving the client's development and involve similar techniques (Goldner & Mayseless, 2008). Coleman (2006) examined the effects of relationships between therapists and their clients with respect to similarity in therapist and client personalities.

Participant information was collected through a self-report questionnaire and client records. The questionnaire included the Brief Symptom Inventory, Working Alliance Inventory, and Trait Descriptive Adjectives (measuring five-factor personality). Thirty nine clients who were with 15 therapists were selected for the study based on similar responses to the Trait Descriptive Adjectives personality measure. The author hypothesized that there will be an association between global personality similarity and a better therapist-client alliance as well as symptom lessening in the client.

Coleman (2006) found that client gender, age, ethnicity and client SES had no association with having a better relationship or an improvement in symptoms. However, similar global personality matches were strongly negatively correlated with symptoms in severity but were not related to better therapist-client relationship alliance. This provides evidence that general personality similarity can produce positive outcomes in helping relationships. Interestingly, similar global personality matches were related to better alliances in female clients. In addition, client extraversion was correlated with better relationships for female clients. Coleman also

found statistical support that showed that client personality is a better predictor of positive outcomes than personality similarity between therapist and client.

Client (or mentee) personality may be a better predictor of positive outcomes, however, little can be done about the personality of a mentee. Matching mentors and mentees based on personality may be a way to produce better outcomes in a mentoring program. Coleman (2006) mentioned that the improvement of outcomes in their study may be attributed to the increase of personality similarity over time as the relationship developed. This contention has some merit; however, personality is generally viewed as a stable trait that increases over the course of a lifetime (Ferguson, 2010; Neppl et al., 2010). Researchers have found a high rate of personality stability across the lifespan of adulthood with only slight differentiation in childhood (Ferguson, 2010; Roberts & Delvecchio, 2000). Even with the above mentioned malleability, consistency has been found in three broad dimensions of temperament and personality (positive emotionality, negative emotionality, and constraint) from toddlerhood to middle childhood (Neppl et al., 2010). A meta-analysis from 152 studies found that correlations of personality consistency increased from .31 in childhood to .54 in young adulthood to .64 in adulthood (Roberts & Delvecchio, 2000). Personality consistency reached its peak from ages 50 to 70 with a correlation of .74 (Roberts & Delvecchio, 2000). If personality similarity/dissimilarity can be shown to lead to positive outcomes, personality matching can be viewed as an important consideration because personality will not significantly conform to whoever is matched. Due to the developmental nature of this research project, people with differing personalities who are matched together may serve a more beneficial outcome of growth (as indicated in Watson, Kumar, Michaelsen, 1993). However, it may also be likely that matches of similar personality may predict better social connectedness. The developmental perspective on temperament and

personality explains that personality tendencies that initially were genetic in nature become more consistent over the life span as experiences increase and impact the development of personality (Caspi et al., 2005; Neppl et al., 2010).

When examining the role of the therapist's personality on the "psychotherapy working alliance" Chapman, Talbot, Tatman and Britton (2009) found that higher client ratings on the Working Alliance Inventory, Short Form (WAI-S) were associated with therapists who scored higher in Neuroticism. The authors defined psychotherapy working alliance based on three criteria: the level of agreement between therapist and client on therapeutic goals, the level of agreement between therapist and client on the activities involved in therapy, and the strength of relationship between therapist and client. Chapman et al. used the "Big Five" personality traits (Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness) for this study.

All therapists completed the NEO-Five Factor Inventory (NEO-FFI) and Working Alliance Inventory, Short Form (WAI-S), both reliable and valid measures. Therapists were also asked to have as many of their clients as possible complete the WAI-S between the third and seventh counseling session of their relationship.

The authors found that higher client ratings on the WAI-S were associated with therapists who scored higher in Neuroticism. Chapman et al. (2009) explained that since there were relatively low levels of Neuroticism across therapists, therapists with relatively high Neuroticism displayed typically average levels of Neuroticism. The authors found no significant correlation between therapist and client based on Extraversion, Agreeableness, and Conscientiousness in therapists. Chapman et al. also found that average levels of Openness in therapists were linked to better client ratings as compared to high levels of Openness in therapists. Chapman et al.

suggested conducting future research in this area as this study appeared to reveal that both very high and very low levels of Neuroticism and Openness, among other personality traits restrict the therapist-client relationship.

It has yet to be shown whether similar findings are displayed in the mentor-mentee relationship; however studies like this one would be beneficial to the current state of mentoring research.

The use of personality assessment as a way to match mentors and mentees has been minimally described with available research. Garner et al. (2003) examined the 16PF personality assessment as a potential screening tool of mentors and found significant findings for two of the total 16 personality factors. The authors reasoned that the 16PF was not an effective screening tool and personality assessments should be investigated further for this purpose (Garner et al., 2003). Similarly, Chapman, Talbot, Tatman and Britton (2009) found evidence that two areas of personality (within the therapist), Neuroticism and Openness, influenced the relationships between therapist and client. One possible reason for these minimal findings were because mentors (or even therapists) should have a wide range of personality profiles that need to be matched with the varying personality profiles of mentees. No research to date has examined this potential explanation.

To further investigate the potential effectiveness of personality matching, group and dyad research was investigated. In general homogeneous groups typically lead to better initial relationships within the group (Watson, Kumar, & Michaelson, 1993). The drawback of homogeneous grouping however is that individuals may not learn, grow and become more socially connected to others compared to more diverse groups. Conversely, typically dissimilar relationships based on personality (Cuperman & Ickes, 2009), ethnicity (Watson, Kumar, &



Michaelson, 1993), and gender (Ruban, Dougherty, & Lee, 2002) have weaker initial interactions. These initial differences in interactions generally diminish over time as compared to homogeneous groups (Cuperman & Ickes, 2009; Watson, Kumar, & Michaelson, 1993; Ruban, Dougherty, & Lee, 2002). Coleman (2006) also found support that global personality similarity led to better outcomes in symptom improvement as compared to age, gender, SES and ethnicity similarity. Conversely, Crockett and Smink (1991) cautioned that personality similarity may not lead to a successful match between mentor and mentee.

Individuals based on personality may learn more, grow and become more socially connected to self, others, and the community. Time may be an important consideration to the outcome of mentoring programs that are matched on similar personality or dissimilar personality. Without prior research specifically analyzing personality matching in a mentoring context, there is little predictability of the knowledge that could be gathered. This may serve as a reason that personality matching has not been used in prior mentoring programs. In addition to these problems, Furr (2008) described in his article the statistical issues of analyzing personality profiles in research.

### *Personality Profiling*

Chapman et al.'s (2009) article among others described the problems of participant inequality skewing results and restricting their generalizability. Similarly, Furr (2008) described a statistical phenomenon stated as the “normativeness problem” that is a common impediment in personality profiling. Furr (2008) defined profile normativeness as the “degree to which a profile reflects an average profile—the similarity between an individual’s profile of scores and a group’s normative profile of scores” (p.1270). Because personality is normative, personality profiles generally tend to be somewhat similar. As a result, it can be particularly difficult to identify

especially similar personalities as well as truly distinct personalities. This is the normativeness problem. The author described how research concerning the similarities of personalities need to evaluate statistics along the elements of normativeness and distinctiveness. Without considering the normativeness problem, profiles will appear to be more similar between profiles and could also cloud meaningful effects of research intervention (Furr, 2008, Klimstra et al., 2010).

Klimstra et al. (2010) tested Furr's normativeness problem hypothesis using college students who repeatedly took personality measures as well as measures in depression, self-esteem, and delinquency. Klimstra et al. (2010) found support for Furr's hypothesis that personality profiles did tend to become normative over several personality assessments and needs to be analyzed based on deviance from the mean score. This occurrence does not represent an actual change in personality, but a statistical occurrence that needs to be considered.

In addition, Furr (2008) presented recommendations for avoiding the normativeness problem. Furr proposed two strategies in analyzing personality profiles. The first strategy is a sample-level strategy, in which personality profiles are compared to the normative average across the entire sample. Once a researcher has these required pieces of information, similarity/differences in personality can be examined based on the profiles' deviation from the normative sample. Also, pairs made based on similarity are compared with random pairings of personality profiles. The second strategy is a pair-level strategy, in which each set of profiles is accounted for on levels of normativeness and distinctiveness. The sample-level strategy may be best for my research because the data collected may not be representative of the greater population of students and it may be easier to analyze.

Furr (2008) concluded his article by describing the necessity of addressing the normative problem so that it can be reduced or eliminated as a potential confound. Furr also wrote that

addressing normativeness would reveal findings that would not otherwise be discovered. Furr described that the suggested recommendations can be applicable for nearly any area of research that examines profile similarity. Furr concluded that profile similarity has conceptual and statistical problems; however, using his recommendations can reduce these obstacles and help identify profile pairings. Research regarding personality matching should strongly adhere to addressing the normativeness problem. Applying a sample-level strategy can improve the distinctiveness of each type of match, whether it is made based on similarity or differences. This will ultimately give a greater level of analysis to measure the effectiveness of matching.

Another consideration addressed by Furr (2010) concerned popular statistical methods conducted in analyzing personality profiles. After six decades of psychologists' attempts to quantify personality similarity (Catell, 1949; McCrae, 1993, 2008), the double-entry intraclass correlation is becoming the popular method for analyzing personality profiles (Furr, 2010; McCrae, 2008). This method calculates personality similarity based on three components: Elevation (or global mean), Scatter, and Shape. Despite its popularity, Furr (2010) established many weaknesses with the double-entry intraclass correlation. Furr (2010) described that because the double-entry intraclass correlation involves a combination of three separate aspects of personality profiles, deriving meaning from one correlation and understanding why one of the components of personality profiles are weighted more than the others presents confusion and problems with interpretation. One confound in the correlation is that when profiles have dissimilar shapes, having dissimilar scatter actually increases the double-entry intraclass correlation (Furr, 2010). Furr (2010) stated, "...by blending elevation, shape, and scatter into a single "omnibus" index, researchers cannot know whether any observed effect, correlation, or difference is due to one or more of the elements or whether a lack of effect masks meaningful

differences among the elements” (p.7). Confusion and interpretation problems from using the double-entry intraclass correlation leads to validity issues as the statistical method may not explain researchers intended definition of personality similarity (Furr, 2010). Alternatives to the double-entry intraclass correlation includes using a Pearson correlation that analyzes personality based on shape similarity, or analyzing each aspect (elevation, scatter, and shape) separately in comparison to a dependent variable. Ultimately, theoretical underpinnings should be used to select a statistical method. This will result in a more effective and valid explanation of data results.

For this research, a combination of the recommendations of both Furr articles (normativeness and statistical method) is necessary to provide the best possible interpretation of data collection. The best approach for personality similarity between profiles should involve a Pearson correlation examining the shape of the personality profiles (Furr, 2010). In addition, data should be viewed in terms of deviation from the normative mean (Furr, 2008). A Pearson correlation using mean deviation would explain a relationship that has one personality similar to another but that also shows similarity with norms in consideration as well.

The following study examined the effectiveness of matching mentors and mentees with similar personalities or dissimilar personalities within a school-based youth mentoring program. Using outcomes in adolescent connectedness, grade point average, and school attendance, this study investigated the following questions.

- 1) Is matching based on personality effective in mentoring programs?
- 2) Is similar or dissimilar personality matching more effective in mentoring programs?
- 3) How effective was the mentoring program?

### Methods

#### *Participants*

Participants for this study were 20 mentors and 16 mentees from a Western New York, suburban school district who attended fourth through sixth grades, and ninth through twelfth grades. After completing an application, potential mentors were screened by the program supervisor. Screening included review of answers to questions on the application, past participation in the program, and perception of the potential mentor by the program supervisor. The program supervisor was a middle school counselor of this small school district and felt knowledgeable of the students in the school district. Once selected by the program supervisor, the potential mentors attended an orientation session. After this orientation process, new mentors decided whether they wanted to participate. Once mentors agreed to participate, they were paid for their mentoring.

Mentees were recommended to the program based on poor academic performance. Mentor-mentee matches were made based on program supervisor judgments. Fifty percent (50%) of mentees were girls, and 50 percent were boys. The average age for mentees was 11 years. In addition, 44 percent of mentees attended fourth grade, 31 percent attended fifth grade, and 25 percent attended sixth grade. The majority (95%) of mentors were female, whereas five percent were male. The average age of mentors was 16 years. Mentors were represented throughout the high school grades with 30 percent in ninth grade, 20 percent in tenth grade, 15 percent in eleventh grade, and 35 percent in twelfth grade. Demographic information on age, sex, grade level, and ethnicity were collected and summarized in Table 1.

*Instruments or Measures*

Five-Factor Personality Inventory-Children (FFPI-C): The Five Factor Personality Inventory - Children (FFPI-C) by McGee, Ehrier, and Buckhalt (2007) (see Appendix A), is a self-report inventory designed to measure the Big Five areas of personality. This multidimensional personality inventory (75 items total) consists of two opposing statements for each item. This personality measure was selected because of its brevity, age range (9 years, 0 months to 18 years, 11 months), and good psychometric characteristics. The FFPI-C has coefficient alphas ranging from .74 to .86 in mean content reliability across the five areas of personality (Klingbeil, 2008). The FFPI-C also has time-sampling reliability ranging from .84 to .88 across the five areas (Klingbeil, 2008). According to Klingbeil (2008), content validity for the FFPI-C was developed through an extensive literature review, as well as a review from a panel of experts in assessment, personality theory, education, and child development. After 100 items were formed, a Pearson correlation was conducted with norms to identify items that discriminated from others. Scores were also compared across ethnicities, leading to a final selection of 75 items. Convergent validity was established by comparing the FFPI-C to several other personality measures: NEO Five Factor Inventory (Costa & McCrae, 1991), the Junior Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975), the Behavioral and Emotional Rating Scale-Second Edition (Epstein, 2004), the Behavior Dimensions Rating Scale (Bullock & Wilson, 1989), and the Hammill Multiability Intelligence Test (Hammill, Bryant, & Pearson, 2001). Correlations in these studies ranged from .47 to .62 (as cited in Klingbeil, 2008). Construct validity was supported in analyses that found that individuals with emotional disorders had different scores from individuals without (Klingbeil, 2008). A factor analysis also found that the FFPI-C aligns closely with the five factor model of personality. Permission for this measure

was given by the publisher through purchase of the test manual and 50 administration and scoring forms. Further information can be found on their publisher's website, <http://www.proedinc.com/customer/content.aspx?redid=8>. For this study, Item 7 (see Appendix A) was omitted because the program supervisor felt it was not appropriate for the program's mentees. Item 7 is calculated into the Extraversion category of personality. For this research, the 14 remaining Extraversion items were averaged to determine a number to use to replace Item 7. The 14 items along with the averaged item were summed together and normed based on the FFPI-C norms by gender.

Hemingway: Measure of Adolescent Connectedness: The Hemingway: Measure of Adolescent Connectedness by Karcher (2005b) (see Appendix B) is a measure of an adolescent's level of social connectedness, the degree of involvement in specific relationships, contexts, and activities. This scale consists of 78 (5-point Likert) items and is designed for adolescents in grades 6-12. Social connectedness can be separated in a variety of ways but for the purposes of this research, social connectedness will be separated into 13 areas: Connectedness-to-Self, Connectedness-to-Others, Connectedness-to-Society, Neighborhood, Parents, Friends, Self-in-the-present, Siblings, School, Peers, Teachers, Future-Self, and Reading.

This measure was selected because prior research by Karcher (2008; 2005) analyzed the effectiveness of his mentoring program (CAMP) model by this measure. This measure also provides an indirect method of gauging effectiveness of personality matching and has good psychometric characteristics. Test-retest reliabilities among subscales ranged from  $r = .68$  to  $r = .94$  (Karcher & Sass, 2010). Alpha reliability across 15 subscales ranged from .71 to .94 (Karcher, 2005b). Inter-item reliability ranged from .70 to .90 in a sample of 327 participants (Karcher, 2001). Convergent validity was also established across composites and subscales (see

appendix in Karcher, 2001). Discriminant validity was shown through gender differences that were similar in the Hemingway measure responses between adolescent and adult samples (Karcher, 2001). This measure was accessed through the Hemingway: Measure of Adolescent Connectedness website, <http://adolescentconnectedness.com/>. Karcher states on his website, “These scales are free for use”. He adds that users acknowledge their use of the measure and provide him their data in order to refine the instrument (Karcher, 2011).

Hemingway: Measure of PRE-Adolescent Connectedness: The Hemingway: Measure of PRE-Adolescent Connectedness by Karcher (2005b) (see Appendix C) is a measure of pre-adolescent’s level of social connectedness, the degree of involvement in specific relationships, contexts, and activities. The scale consists of 40 (4-point Likert) items and is designed for pre-adolescents grades 3-6. For the purposes of this research, social connectedness will be analyzed in 13 areas: Connectedness-to-Self, Connectedness-to-Others, Connectedness-to-Society, Neighborhood, Parents, School, Peers, Reading, Friends, Siblings, Teachers, Self-esteem, and Self-management. Karcher (2005b) found alpha reliability across areas ranging from .56 to .86 from 3 samples. Convergent and Discriminant validity was also consistent with the Adolescent version in U.S. and non-U.S. samples (Karcher 2001; Karcher 2005a). The measure was accessed through the Hemingway: Measure of Adolescent Connectedness website, <http://adolescentconnectedness.com/>. Permission of this measure is given as stated for the Hemingway: Measure of Adolescent Connectedness.

Demographic Survey: A demographic survey (see Appendix D) was developed to collect relevant demographic information. Information was also collected on sports and hobbies that participants take part in.



*Procedure*

The procedure for this research entailed the following steps: 1) recruitment of participants, 2) initial data collection session, 3) final data collection session, 4) further data collection.

1) **Recruitment of participants**-Participants of the mentoring program were recruited in a group informational meeting that explained the research study and the requirements necessary for participation by mentors and mentees. In addition, all 95 participants of the mentoring program were mailed the same cover letter, assent, and parent consent forms in April, 2011. Guidelines of the program, benefits of participation, and time commitment were described as detailed in the cover letter (see Appendix E, F, and G). Mentors and mentees returned the assent and parent consent forms to the mentoring program supervisor. One week after the first mailing, 17 mentors and 10 mentees had turned in their assent and consent forms. A second mailing was conducted in April 2011 to increase the number of participants. One week after the second mailing, 20 mentors and 16 mentees had returned their assent and parent consent forms.

2) **Initial data collection**-Initial data collection occurred four months after the beginning of the mentoring program. The mentoring program began in December, 2010 and initial data collection began in April, 2011. Mentors completed the FFPI-C, Hemingway: Measure of Adolescent Connectedness and demographic survey at home or in their leisure time over a three week span in late April and early May, 2011.

Mentees completed the Hemingway: Measure of PRE-Adolescent Connectedness and demographic survey over the course of two weeks within the same span of time as the mentors. Mentees completed the survey material during free time in their afterschool mentoring program. Mentees were in their work rooms and had the assistance of their mentors in understanding items

of the surveys. The measures required 30-45 minutes to complete. Participants were instructed to ask questions if they were unsure of any items or words. No questions were asked for clarification.

3) **Final data collection session**-Mentees completed survey information during school in June, 2011 in classrooms grouped by grade level. Mentees were supervised by the mentoring program supervisor. Mentees who needed reading assistance were also given one-to-one attention by older students. All mentees were read the directions by the program supervisor, and were instructed to answer items as they felt that day. All mentees completed the Fiver Factor Personality Inventory-Children and the Hemingway: Measure of PRE-Adolescent Connectedness. These measures were completed over a two week period. This was at least four weeks after the conclusion of the mentoring program. These measures took approximately 45 minutes to complete. All mentees were told by their program supervisor to ask questions if they were unsure of any items or words.

Mentors completed the Hemingway: Measure of Adolescent Connectedness at home or at school four weeks after the conclusion of the mentoring program in June 2011. Mentors were also directed to answer items in regards to their feelings on the present day. Mentors were also encouraged to ask questions in regards to the items.

4) **Further data collection**-The lead researcher was given access to academic grade information and school attendance information from the program supervisor. This data was coded and de-identified by the lead researcher so that the participants' names were not attached to the given information.

After pre- and post- measures were completed, mentor and mentee responses to various measures were analyzed. Mentees were categorized into similar personality matched mentees

and dissimilar personality matched mentee as well for additional analysis. Similar personality matches were based on the deviation from normative means of each of the five factors based on participant gender. Once deviations were calculated, a Pearson correlation was conducted to analyze the relationship between mentor and mentee based on personality profile shape similarity. Pearson correlation of personality profile shape similarity has been described as an adequate measure of personality similarity (Furr, 2010). A significant positive correlation ( $r_{xy} \geq +.10$ ) indicated a match that was similar. A significant negative correlation ( $r_{xy} \leq -.10$ ) indicated a match that was dissimilar. All other matches were considered mixed personality matches. Mean (elevations) and Variance (scatter) were also taken into consideration as recommended by Furr (2010).

No participant decided that he/she wanted to withdraw from the study at any time. One participant failed to complete the second administration of the Hemingway: Measure of Adolescent Connectedness due to personal circumstances.

Similar and dissimilar personality matches were analyzed based on the statistical significance and effect sizes of outcome differences in social connectedness areas, academic grade average, and school attendance. All participants were also analyzed based on these outcomes to determine if there is a statistically significant improvement from the mentoring program starting before the intervention to post-intervention.

### *Research Design*

This research investigated whether similar personality matching or dissimilar personality matching was effective for mentees in a school-based mentoring program. This research used a quasi-experimental pre-/post-design. The dependent variables are grade average, school

attendance, and social connectedness. The independent variables are mentors, mentees, similar personality matched mentees and dissimilar personality matched mentees.

### Results

The purpose of this study was to examine the effectiveness of mentor-mentee personality matches. Mentor's and mentee's grades, attendance, and responses to a social connectedness measure (during and after the mentoring program) were analyzed.

#### *Mentors' social connectedness*

To examine whether mentors improved from the mentoring program in the area of social connectedness; 13 dependent t-tests were conducted based on the first and second administrations of the Hemingway: Measure of Adolescent Connectedness. This measure is composed of three broad measures of social connectedness (i.e. Self-Connectedness, Connectedness-to-Others, and Connectedness-to-Society) and 10 specific measures of connectedness (i.e. present self-connectedness, future self-connectedness, friend connectedness, parent connectedness, peer connectedness, teacher connectedness, and sibling connectedness).

For the Self-Connectedness broad score and the two specific Self-Connectedness subtest scores the three t-tests were not significant. For example, for Self- Connectedness the t-test was not significant ( $t_{(18)}=.974$ ,  $p=.343$ ). For present-self connectedness, the t-test was also not significant ( $t_{(18)}=.927$ ,  $p=.366$ ). The t-test on future self-connectedness was also not significant ( $t_{(18)}=.301$ ,  $p=.767$ ). Although none of the t-tests in these areas were significant, analysis of the means revealed a high mean rating in each area, regardless of whether it was the first or second administration (See Table 2).

Mentors were also compared on their ratings of Connectedness-to-Others and the five subtests that fall under Connectedness to Others. These six t-tests were not significant. For example, the t-tests were as follows: Connectedness to Others ( $t_{(18)}=.599$ ,  $p=.557$ ), connectedness to friends ( $t_{(18)}=.441$ ,  $p=.665$ ), to parents ( $t_{(18)}=-.204$ ,  $p=.841$ ), to siblings ( $t_{(18)}=-1.19$ ,  $p=.252$ ),

and to peers ( $t_{(18)}=-.953$ ,  $p=.353$ ). These t-tests were not significantly different between administrations.

Mentors were also asked to rate their feelings on Connectedness-to-Society and the three subtests that compose this broad measure. The four t-tests were not significant. The t-tests were as follows: Connectedness-to-Society ( $t_{(18)}=-.885$ ,  $p=.388$ ), reading connectedness ( $t_{(18)}=.174$ ,  $p=.864$ ), school connectedness ( $t_{(18)}=.030$ ,  $p=.976$ ), and neighborhood connectedness ( $t_{(18)}=-2.04$ ,  $p=.056$ ).

#### *Mentees' social connectedness*

Dependent t-tests were also conducted for mentees who completed the first and second administrations of the Hemingway: Measure of PRE-Adolescent Connectedness to determine if mentees improved in social connectedness due to their participation in the mentoring program (See Table 2). Similar to the Hemingway: Measure of Adolescent Connectedness, the PRE-Adolescent version is composed of the same three broad measures as well as several specific measures. Within Self-Connectedness, self-esteem and self-management are the specific measures that calculate into the broad measure. The Connectedness-to-Others and Connectedness-to-Society broad measures have the same specific measures as in the Adolescent version of this instrument.

Mentees were hypothesized to benefit from the mentoring program by having higher ratings in social connectedness variables in the second administration of the instrument compared to the first administration. Dependent t-tests (13) were conducted on each broad and specific measure. In the area of Self-Connectedness, results in Self-Connectedness ( $t_{(15)}=-.908$ ,  $p=.378$ ), self-esteem ( $t_{(15)}=-.607$ ,  $p=.553$ ), and self-management ( $t_{(15)}=-.899$ ,  $p=.383$ ) were not significant.

In the area of Connectedness to Others' all six t-tests were not significant. Dependent t-test results were ( $t_{(15)}=1.54$ ,  $p=.145$ ) for Connectedness-to-Others, ( $t_{(15)}=1.54$ ,  $p=.145$ ) for friend connectedness, ( $t_{(15)}=.770$ ,  $p=.453$ ) for parent connectedness, ( $t_{(12)}=-1.14$ ,  $p=.287$ ) for sibling connectedness, ( $t_{(15)}=.829$ ,  $p=.420$ ) for teacher connectedness, and ( $t_{(15)}=1.31$ ,  $p=.210$ ) for peer connectedness. Mentees reported high mean ratings of their connectedness to friends, parents, siblings, and teachers during both administrations.

The t-tests regarding Connectedness-to-Society ( $t_{(15)}=1.98$ ,  $p=.067$ ) and the three subtests were not significant. Although reading connectedness was not significant ( $t_{(15)}=1.84$ ,  $p=.086$ ), mentees declined in by .27 standard deviations during the mentoring program compared to after the mentoring program. This small-sized effect may be reasonable given that the second administration was given close to final school exams and the end of the school year when school work and reading are expected to be at their hardest. Other results included school connectedness ( $t_{(15)}=.614$ ,  $p=.548$ ) and neighborhood connectedness ( $t_{(15)}=1.01$ ,  $p=.327$ ).

#### *Similar personality matched mentees' social connectedness*

Dependent t-tests (13) were also conducted on mentees' social connectedness that were matched with mentors that had a similar personality to their own to examine if these mentees benefited from the mentoring program. (See Table 3) Mentees were hypothesized to benefit from a similar personality match based on the areas measured from the Hemingway: Measure of PRE-Adolescent Connectedness. The t-test conducted to analyze this group's Self-Connectedness ( $t_{(3)}=1.97$ ,  $p=.143$ ) and two subtests, self-esteem ( $t_{(3)}=2.83$ ,  $p=.066$ ) and self-management ( $t_{(3)}=.075$ ,  $p=.945$ ), were not significant. Even so, mentees with similar personality matches declined in Self-Connectedness by .79 standard deviations, a medium sized effect. In addition, a decline of .54 standard deviations in self-esteem from first to second administration was also a

medium sized effect. This decrease in self-esteem may have resulted from the stoppage of interacting with an older, pro-social peer from the end of the mentoring program until the second administration of the social connectedness measure, which was approximately four weeks after the end of the mentoring program.

The t-test for this group's Connectedness-to-Others ( $t_{(3)}=2.70$ ,  $p=.074$ ) and five subtests were not significant including friend connectedness ( $t_{(3)}=3.06$ ,  $p=.055$ ). These mentees declined in Connectedness-to-Others and friend connectedness by .53 standard deviations and .96 standard deviations, respectively. Both are considered a medium-sized effect.

The t-test conducted for this group's Connectedness-to-Society ( $t_{(3)}=1.92$ ,  $p=.151$ ) and two subtests were not significant. One subtest, neighborhood connectedness ( $t_{(3)}=3.22$ ,  $p=.049$ ), had a t-test that was statistically significant. Mentees with similar personality matches declined 1.58 standard deviations in Connectedness-to-Society during the mentoring program compared to after the mentoring program, which is a large effect despite a non-statistically significant finding. In neighborhood connectedness, mentees reported scores 1.13 standard deviations lower after the mentoring program compared to during the mentoring program. This finding can be interpreted as a large effect.

#### *Dissimilar personality matched mentees' social connectedness*

Mentees with dissimilar personality matches were also hypothesized to benefit from their match. Dependent t-tests (13) were conducted to test whether dissimilar personality matched mentees improved in social connectedness from the mentoring program. This was examined based on responses to the Hemingway: Measure of PRE-Adolescent Connectedness. (See Table 4) These mentees' Self-Connectedness was not significant ( $t_{(7)}=-.815$ ,  $p=.442$ ).



The t-test conducted for the broad measure, Connectedness-to-Others, was not significant ( $t_{(7)}=.680$ ,  $p=.519$ ). Mentees with dissimilar personality matches responses resulted in a statistically significant t-test in parents connectedness ( $t_{(7)}=2.50$ ,  $p=.041$ ), responding .45 standard deviations lower after the mentoring program than during the mentoring program. This is a small sized effect.

The t-test for this group's Connectedness-to-Society was also not significant ( $t_{(7)}=1.07$ ,  $p=.319$ ). Table 5 has summarized information on the significance levels of all analyzed groups in social connectedness.

#### *Mentors grade average*

Dependent t-tests were also conducted to examine whether mentors improved in grade average over the length of the mentoring program (See Table 6). The mentoring program did not begin until midway into the second quarter of classes and finished midway into the fourth quarter of classes. Therefore, the best analyses available for the mentoring program would use either the first quarter-fourth quarter analysis or second quarter-fourth quarter analysis.

Mentors had a statistically significant decrease from first quarter to fourth quarter ( $t_{(19)}=2.20$ ,  $p=.041$ ) whereas the t-test of second quarter grade average and fourth quarter grade average ( $t_{(19)}=.181$ ,  $p=.858$ ) was not statistically significant. These t-tests note a decline for mentors in grade average from before the mentoring program to during and after the mentoring program.

A Repeated Measures Analysis of Variance was also conducted to note any significant differences on grade averages across several points in time. The Repeated Measures ANOVA was conducted to examine changes over the four collected data points of the school year. Mentors' grade average was not statistically significant ( $F_{(1,19)}=2.43$ ,  $p=.055$ ). A Partial- $\eta^2$  effect

size was calculated and determined a .18 standard deviation decrease in grade average over the school year that included the mentoring program intervention. This was a medium-sized effect.

#### *Mentees' grade average*

Mentees were also analyzed based on grade average using two dependent t-tests to examine whether this group improved during the mentoring program. A dependent t-test of mean differences between first quarter grade average and fourth quarter grade average ( $t_{(15)}=-.995$ ,  $p=.336$ ) and second quarter to fourth quarter ( $t_{(15)}=-.554$ ,  $p=.588$ ) were not significant. Although these differences were not found to be significant, both t-tests did show an increase in grade average over the school year.

The Repeated Measures ANOVA of mentees' grade average was also not statistically significant ( $F_{(1,15)}=1.42$ ,  $p=.251$ ), however, mentees' grade average improved by .09 standard deviations over the course of the mentoring program which is considered a medium sized effect.

#### *Similar personality matched mentees' grade average*

Mentees with similar matches t-tests based on first-fourth quarter grades ( $t_{(3)}=1.22$ ,  $p=.309$ ) and second-fourth quarter grades ( $t_{(3)}=1.16$ ,  $p=.329$ ) were not statistically significant. Also noted was a small-sized ( $d=.46$ ) decrease in grade average from first to fourth quarter grade averages.

#### *Dissimilar personality matched mentees' grade average*

Mentees with dissimilar personality matches from first quarter to fourth quarter ( $t_{(7)}=-1.89$ ,  $p=.101$ ) and second quarter to fourth quarter ( $t_{(7)}=-1.245$ ,  $p=.253$ ) were not statistically significant in grade average differences. Additional analysis revealed an effect size that had a medium sized increase ( $d=.51$ ) from first quarter grade average to fourth quarter grade average.

*Mentors' school absences*

Analysis also was conducted based on a third outcome measure: school absences. (See Table 7) Similar to grade average, these outcomes were collected by quarter and therefore were analyzed based on first-fourth quarter differences and second-fourth quarter differences. Mentors were hypothesized to have decreases in school absences during the mentoring program. Two dependent t-tests of mentors on first-fourth quarter school absences ( $t_{(19)}=-1.29$ ,  $p=.211$ ) and second-fourth quarter school absences ( $t_{(19)}=-1.47$ ,  $p=.158$ ) were not statistically significant. Although dependent t-tests were not found statistically significant, mean school absences increased in both comparisons.

Mentors' school absences were also examined using a Repeated Measures ANOVA. Mentors' school absences were not found to be statistically significant ( $F_{(1,19)}=2.17$ ,  $p=.157$ ). A partial- $\eta^2$  effect size was calculated and determined a .10 standard deviation increase in school absences. This is a medium-sized effect.

*Mentees' school absences*

Mentees' school absences were examined to see if there were any decreases during the mentoring program. Dependent t-tests of mentees based on first-fourth quarter school absences ( $t_{(15)}=-.689$ ,  $p=.502$ ) and second-fourth quarter school absences ( $t_{(15)}=1.67$ ,  $p=.115$ ) were not significant. Analysis of the second quarter school absences compared to the fourth quarter school absences of mentees showed a decrease by .50 standard deviations, which is considered a medium sized effect.

A Repeated Measures ANOVA examining mentees' school attendance was not statistically significantly ( $F_{(1,15)}=.217$ ,  $p=.648$ ) as well. Partial- $\eta^2$  calculated a small effect (.014) increase.

*Similar personality matched mentees' school absences*

This group was analyzed based on school absences to examine whether they improved their school attendance due to the mentoring program. Dependent t-tests (2) of mentees with similar matches in school absences from first to fourth quarter ( $t_{(3)}=-1.10$ ,  $p=.353$ ) and second to fourth quarter ( $t_{(3)}=.485$ ,  $p=.661$ ) were not significant.

*Dissimilar personality matched mentees' school absences*

Dissimilar personality matched mentees were also hypothesized to decrease in school absences. T-tests of dissimilar personality matched mentees' school absences from first to fourth quarter ( $t_{(7)}=-.683$ ,  $p=.516$ ) and second to fourth quarter ( $t_{(7)}=1.36$ ,  $p=.217$ ) were not significant. This set of mentees did decrease school absences from second quarter to fourth quarter by .49 standard deviations, which is considered a small-sized effect.

*Interaction between similar and dissimilar personality matched mentees in social connectedness*

Dissimilar and similar match mentees were analyzed to see if there was an interaction based on personality compatibility. This was done to investigate whether dissimilar match or similar match was more effective in this mentoring program. In terms of social connectedness, all Repeated Measures ANOVA (13) results can be found in Table 8. This researcher's hypothesis predicted that similar personality match mentees would have better social connectedness growth than the dissimilar personality match mentees. The Repeated Measures ANOVA of Neighborhood Connectedness was statistically significant ( $F_{(1,10)}=7.44$ ,  $p=.021$ ), with dissimilar matched mentees reporting greater growth in Neighborhood Connectedness than similar matched mentees. Mean averages also indicated that dissimilar match mentees were initially not as connected to their neighborhood as the similar match mentees, however, by the end of the mentoring program the dissimilar match mentees felt more connected to their

neighborhood than the similar match mentees. All 12 remaining areas of social connectedness were not statistically significant.

*Interaction between similar and dissimilar personality matched mentees in grade average*

It was hypothesized that dissimilar personality matched mentees would benefit more in grade average than similar personality matched mentees. Dissimilar match mentees had greater improvement ( $F_{(1,10)}=5.135$ ,  $p=.047$ ) than similar match mentees and was statistically significant. (See Table 9).

*Interaction between similar and dissimilar personality matched mentees in school absences*

A Repeated Measures ANOVA examined school attendance differences between dissimilar match mentees and similar match mentees. This was conducted because it was hypothesized that dissimilar personality matched mentees would decrease school absences more than similar personality match mentees. The result was not significant ( $F_{(1,10)}=.036$ ,  $.854$ ). Table 9 has further information on school absences for each mentee group, as well as statistical significance and effect sizes.

### Discussion

The purpose of this study was to examine the effectiveness of matching mentors and mentees based on similar personality or dissimilar personality profiles. Mentors and mentees were participants in an afterschool youth mentoring program, and effectiveness of personality matches were compared with overall program effectiveness. Program effectiveness was examined using measures of social connectedness, grade average, and school attendance.

Despite a lack of research examining similar/dissimilar personality mentoring matches, the hypotheses were developed based on available research related to personality interactions in small group settings as well as available research on mentoring programs. Regarding the effectiveness of the mentoring program, it was hypothesized that participants in the mentoring program would display significant improvement in social connectedness, grade average, and school attendance regardless of personality match. The findings did not support this prediction; findings suggested iatrogenic effects for mentors.

For example, mentors' social connectedness and school attendance showed no statistically significant areas of improvement. In contrast, mentors' grade average significantly decreased from pre to post participation. One potential explanation for these findings could be that all of the students from this high school tend to decrease their grade average over the course of the year. Unfortunately, data comparing mentors' grade average to all high school students' grade average was unavailable. Another explanation of these findings may be based on the amount of time mentors were required to participate in the program. The mentoring program required approximately five hours a week of time. The amount of time required may have decreased the time spent on studying, homework assignments, and other factors that contribute to grade average. Most research has described the benefits that adolescent mentors receive in

academic achievement and self-esteem (Karcher, 2008), while criticisms about maturity have also arisen (Rhodes, 2002). Based on this data, it seems that more safeguards need to be put into place to ensure that high school students who are involved in this mentoring program understand the risks of being a mentor, and have access to supports to maintain their academic achievement, school attendance, and social connectedness. Mentors in this mentoring program did receive monetary compensation for their service; however, as youth they should still be protected from the negative effects of intervention.

Due to the lack of statistically significant data, it is difficult to report on the outcomes of mentees within this program. It appears that at best, minor benefits were gained for all mentees based on social connectedness, grade average, and school attendance. For example, findings were not statistically significant for mentees' grade average; however, mentees did increase school attendance during the intervention. Within the social connectedness domain, there were no areas that resulted in statistically significant findings. These findings may have been a result of not administering outcome measures strictly before and after the mentoring program intervention. In addition, mentees may not have had a significant increase in grade average as mentees may have focused on specific classes of difficulty (i.e. English, Math) and lost focus in maintaining grades for other classes such as Physical Education or Music. Also, social connectedness was not a main priority of the mentoring program as most of the time in the mentoring program was devoted to academic improvement. Another potential explanation may be due to the mentees who volunteered for this research. Perhaps certain types of mentees that may have already had a high level of social connectedness, grade average, or school attendance volunteered for the research project and represented findings that did not justly represent the entire population of mentees in the mentoring program. Even so, this finding supports Dubois et

al. (2002) meta-analysis that found only minimal benefits for mentoring programs when not using “best practices”. Although this research utilized some best practices as described by Dubois et al. (2002), other best practices could have been implemented such as having parent involvement, ongoing mentor training, and a mentor support group, which could potentially result in better outcomes.

The second hypothesis predicted that similar personality matches of mentors with mentees would result in improvement for mentees across outcome measures. There was evidence contrary to this hypothesis. For instance, similar personality matching resulted in mentees with a statistically significant decrease in neighborhood connectedness. This was the only statistically significant finding regarding social connectedness. In addition, there were no statistically significant data regarding grade average, or school attendance. The lack of findings are most likely due to the small size of the similar personality mentee group. Additional complications to the findings may be due to not administering the outcome measures shortly before the start of the mentoring program and shortly after the end of the program.

The third hypothesis was that mentees in dissimilar personality matches would also benefit from the mentoring program across all outcome measures. Overall, mentees with dissimilar personality matches had limited evidence supporting improvement from the mentoring program. Although effect sizes were noted, the only statistically significant finding was a decrease in dissimilar personality match mentees’ connectedness to parents. No significant findings were discovered in other areas of social connectedness, grade average, or school attendance. However, compared to mentors, mentees, and similar personality match mentees, this group had greater support for positive outcomes based on effect sizes.



Regarding personality matching, it was hypothesized that similar personality matching of the mentor with a mentee would result in more improvement in mentee perception of social connectedness compared to dissimilar personality matched mentees and mentors. However, dissimilar personality match mentees showed statistically significantly higher growth in neighborhood connectedness than similar personality match mentees. Other areas of social connectedness were not statistically significant. Given this information, there was no evidence to support personality matching based on similar personality profiles. Since outcome measures were not collected immediately before and immediately after the mentoring program intervention, data may have failed to notice benefits of similar personality matching, particularly in the beginning weeks of the mentoring program. In addition, the number of participants that were found to have a similar personality to their matched mentor/mentee was small; making any findings based on this group difficult to support. Even with these explanations, this research supported the belief that long term relationships display less growth in homogeneous matches as compared to heterogeneous matches (Cuperman & Ickes, 2009; Watson, Kumar, & Michaelson, 1993).

In addition, dissimilar personality matched mentees were predicted to have better improvement in grade average and school attendance than similar personality matched mentees because these outcomes were collected over a longer period of time. This research did support dissimilar personality matches within a mentoring program, although the findings were complex.

For example, dissimilar personality match mentees had statistically significantly greater growth than similar match mentees in grade average. There were no significant findings regarding school attendance. Explanations for these findings may be due to the grade average fluctuations as compared to other middle school students. The small number of participants in

the similar personality mentee group may have also affected grade average and school attendance findings. Given these findings, further support was found for dissimilar personality groups and dyads as described in the available research (Cuperman & Ickes, 2009; Watson, Kumar, & Michaelson, 1993). The findings against similar personality matches and for dissimilar personality matches refute prior research that supports time as a factor in the benefit of dissimilar personality relationships. For example, Watson, Kumar, and Michaelson (1993) found that nine weeks decided whether homogeneous relationships or heterogeneous relationships were more beneficial. Before nine weeks, homogeneous relationships are superior whereas after nine weeks, heterogeneous relationships are more beneficial to outcomes. In this research, social connectedness data was collected five weeks apart, which should have resulted in more favorable outcomes for similar personality mentees. One possible explanation for this research's current finding was that since the mentoring program had already been established before the first administration of the social connectedness measure, the advantage of similar personality relationships had diminished by the time the first administration of the measure was given. As a result, the administrations of the social connectedness measures reflected the growth period of dissimilar personality relationships, in which it surpasses the advantages of using similar personality matches.

### *Limitations*

Despite the efforts of the lead researcher and several other helpful sources, there were numerous limitations to this research study. Selection was a threat to internal validity as the 36 participants were only approximately one-third of the total number of participants in the mentoring program. Since some participants of the mentoring program may have been more likely to volunteer for this research than others, this research's findings may not necessarily be

representative of the entire mentoring program's population. Unequal experimental groups may have also affected the results of this study since the similar personality match mentee group included only four participants, allowing for the potential of large individual variability affecting the results. Another limitation to the study was the short amount of time given (five weeks) between the first and second administration of the social connectedness measures. This allowed for participants to potentially remember their responses from the first administration of the measure. The short amount of time also minimized the opportunity for greater growth to be analyzed based on the mentoring program intervention which may have affected the results of this research. Another limitation concerning the social connectedness measures was that the first administration was given approximately four months after the beginning of the mentoring program. In addition, the second administration was given three weeks after the conclusion of the mentoring program. As a result, the social connectedness data best reflects the participants' level of connectedness during the intervention and well after the intervention was completed instead of analyzing directly before and after the intervention. These measures were also administered differently from the first administration to the second administration. In addition, the administrations were varied from mentor to mentee, and even between mentors and mentees. Mentors were given the freedom to complete the social connectedness measures during their free time, independently. Mentees were initially given the social connectedness measures in their smaller, mentoring program workrooms with assistance from their mentors; however, upon second administration they were completed in a large room setting by grade level, receiving assistance from older students they may not have been comfortable with.

Limitations were also found to the external validity of this study. The small sample size makes it difficult to effectively apply findings to other mentoring programs of any kind. In

addition, the sample taken was very homogeneous in ethnicity. The school used for research was in a small, suburban town where the grades involved in the study (4-6, 9-12) are in the same building. Generalizability to urban, rural, and large school districts that have several buildings for these grade levels may be limited. Results may have also been affected by the overwhelming percentage of mentors that are female.

One important consideration that may have also limited the results of this study is based on why mentees joined the mentoring program. The similar personality match mentee group was composed of 75 percent of participants that responded that their parents forced them to join the mentoring program. Conversely, the dissimilar personality match mentee group was composed of 25 percent of the participants who felt that their parents forced them to join the mentoring program. The perception of being forced into joining the mentoring program may have as much to do with the lack of growth exhibited by the similar match mentees as actually having a mentor with a similar personality. Conversely, feeling unforced to join the mentoring program may significantly benefit the outcomes of a mentee.

#### *Future Recommendations*

Due to the many limitations of this study, future recommendations should look to perform similar research that minimizes the previously stated limitations. Optimally, a large experimental study is necessary with a structured mentoring program that has all experimental participants complete a personality test. The study should have an experimental group where mentors and mentees are matched based on the scores to the personality test where participants can be matched as either by similar personality or dissimilar personality. A comparison group of participants will be randomly matched. In addition, a second comparison group will not receive any participation in the mentoring program. Analyzed outcomes of social connectedness, grades,

and school attendance should happen before and after the mentoring program. Procedures to administer personality and social connectedness rating scales should also remain consistent across all participants as much as possible.

In addition, research should control for whether mentees feel forced or want to participate in the mentoring program.

Despite the limitations of this research, a great deal of information has been gained regarding personality matches within a mentoring program. Evidence supports dissimilar personality matches within a mentoring program. Along with best practices outlined by Dubois et al. (2002), researching dissimilar personality matching from personality tests now has serious merit for future research. Further investigations in this area are adequate and necessary to understand how to best mentor the diverse youth of today.

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Table 1

*Demographics*

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Characteristic	Mentors (n=20)	Mentees (n=16)	Similar Match Mentee (n=4)	Dissimilar Match Mentee (n=8)
Age (years)	16.25	10.69	11.00	10.38
Sex (percentage)	Male: 5.0 Female: 95.0	Male: 50.0 Female: 50.0	Male: 75.0 Female: 25.0	Male: 50.0 Female: 50.0
Grade Level (percentage)	9 <sup>th</sup> : 30.0 10 <sup>th</sup> : 20.0 11 <sup>th</sup> : 15.0 12 <sup>th</sup> : 35.0	4 <sup>th</sup> : 43.8 5 <sup>th</sup> : 31.3 6 <sup>th</sup> : 25.0	5 <sup>th</sup> : 75.0 6 <sup>th</sup> : 25.0	4 <sup>th</sup> : 50.0 5 <sup>th</sup> : 25.0 6 <sup>th</sup> : 25.0
Ethnicity (Percentage)				
European-American	85.0	68.8	75.0	62.5
Hispanic	0.0	18.8	25.0	12.5
Other	15.0	12.5	0.0	25.0

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Table 2

*Dependent t-test Means and Standard Deviations of Mentors and Mentees in Social Connectedness\**

Variable	Mentors				Mentees			
	M <sub>1</sub>	SD <sub>1</sub>	M <sub>2</sub>	SD <sub>2</sub>	M <sub>1</sub>	SD <sub>1</sub>	M <sub>2</sub>	SD <sub>2</sub>
<b>Connectedness-to-Self</b>	4.23	.34	4.16	.51	2.82	.70	2.93	.68
Present Self	4.20	.41	4.08	.60				
Future Self	4.26	.49	4.24	.57				
Self-Esteem					2.96	.75	3.05	.80
Self-Management					2.68	.86	2.82	.77
<b>Connectedness-to-Others</b>	4.10	.42	4.06	.49	3.19	.52	3.10	.45
Friends	4.43	.40	4.39	.47	3.31	.64	3.15	.55
Parents	4.12	.73	4.14	.67	3.43	.65	3.33	.60
Siblings	3.97	.93	3.89	.80	3.03	.92	3.18	.63
Teachers	4.31	.45	4.18	.49	3.15	.95	3.03	.77
Peers	3.66	.74	3.72	.79	2.96	.77	2.79	.79
<b>Connectedness-to-Society</b>	3.39	.69	3.49	.62	2.95	.65	2.79	.66
Reading	3.37	1.16	3.34	1.27	2.92	.84	2.68	.91
School	3.73	.60	3.73	.51	2.88	.89	2.79	.76
Neighborhood	3.21	.80	3.39	.76	3.05	.87	2.91	.93

Note: Variables in Bold=Broad measures of Connectedness; M<sub>1</sub>= mean of first administration of measure, SD<sub>1</sub>= standard deviation of first administration of measure, M<sub>2</sub>= mean of second administration of measure, SD<sub>2</sub>= standard deviation of second administration of measure; \*= Mentors responded to items based on a 5-point Likert scale, Mentees responded to items based on a 4-point Likert scale

Table 3

*Dependent t-test results for Similar Personality Match Mentees in Social Connectedness*

Variable	M <sub>1</sub>	SD <sub>1</sub>	M <sub>2</sub>	SD <sub>2</sub>	t	p
<b>Connectedness-to-Self</b>	2.96	.22	2.69	.49	1.97	.143
Self-Esteem	3.19	.83	2.69	1.01	2.83	.066
Self-Management	2.73	.46	2.70	.77	.075	.945
<b>Connectedness-to-Others</b>	3.12	.33	2.94	.34	2.70	.074
Friends	3.56	.43	3.08	.56	3.06	.055
Parents	3.33	.47	3.25	.50	.500	.652
Siblings	3.11	.38	3.00	.33	1.00	.423
Teachers	2.83	1.11	2.67	.39	.380	.730
Peers	2.85	.60	2.80	.54	.397	.718
<b>Connectedness-to-Society</b>	2.89	.32	2.51	.11	1.92	.151
Reading	2.75	.35	2.31	.43	1.58	.213
School	2.80	.40	2.78	.21	.088	.935
Neighborhood	3.13	.66	2.44	.55	3.22	.049*

Note: Variables in Bold=Broad measures of Connectedness; M<sub>1</sub>= mean of first administration of measure, SD<sub>1</sub>= standard deviation of first administration of measure, M<sub>2</sub>= mean of second administration of measure, SD<sub>2</sub>= standard deviation of second administration of measure; \*= significant at  $p \leq .05$

Table 4

*Dependent t-test results for Dissimilar Personality Match Mentees in Social Connectedness*

Variable	M <sub>1</sub>	SD <sub>1</sub>	M <sub>2</sub>	SD <sub>2</sub>	t	p
<b>Connectedness-to-Self</b>	2.81	.78	2.98	.78	-.815	.442
Self-Esteem	2.92	.78	3.13	.83	-.995	.353
Self-Management	2.70	.93	2.83	.76	-.476	.648
<b>Connectedness-to-Others</b>	3.19	.58	3.13	.48	.680	.519
Friends	3.03	.75	3.03	.51	.000	1.00
Parents	3.58	.53	3.29	.75	2.50	.041*
Siblings	2.81	1.18	3.14	.74	-1.45	.196
Teachers	3.33	.93	3.31	.59	.111	.914
Peers	3.09	.57	2.80	.70	1.17	.280
<b>Connectedness-to-Society</b>	2.76	.81	2.67	.82	1.07	.319
Reading	2.72	1.03	2.49	1.03	1.16	.285
School	2.78	1.13	2.70	.89	.355	.733
Neighborhood	2.78	1.05	2.81	1.13	-.205	.844

Note: Variables in Bold=Broad measures of Connectedness; M<sub>1</sub>= mean of first administration of measure, SD<sub>1</sub>= standard deviation of first administration of measure, M<sub>2</sub>= mean of second administration of measure, SD<sub>2</sub>= standard deviation of second administration of measure; \*= significant at  $p \leq .05$



Table 5

*Dependent t-test Statistical Significance for Analyzed Groups*

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Variable	Mentors	Mentees	Similar Personality Mentee	Dissimilar Personality Mentee
<b>Connectedness</b>	.343	.378	.143	.442
<b>to Self</b>				
<b>Connectedness</b>	.557	.145	.074	.519
<b>to Others</b>				
Parent	.841	.453	.652	.041*
<b>Connectedness</b>	.388	.067	.151	.319
<b>to Society</b>				
Neighborhood	.056	.327	.049*	.844

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Note: Variables in Bold=Broad measures of Connectedness; \*= significant at  $p \leq .05$

Table 6

*Dependent t-test results for all analyzed groups based on Grade Average*

Analyzed Group											
M <sub>1</sub>	SD <sub>1</sub>	M <sub>4</sub>	SD <sub>4</sub>	t	p	M <sub>2</sub>	SD <sub>2</sub>	M <sub>4</sub>	SD <sub>4</sub>	t	p
<b>Mentors</b>											
88.78	4.28	86.37	6.28	2.20	.041*	86.57	6.37	86.37	6.28	.181	.858
<b>Mentees</b>											
79.95	5.00	81.23	5.38	-0.995	.336	80.47	6.96	81.23	5.38	-0.554	.588
<b>Similar Personality Match Mentees</b>											
82.50	6.95	79.68	5.07	1.22	.309	81.70	6.93	79.68	5.07	1.16	.329
<b>Dissimilar Personality Match Mentees</b>											
78.29	4.99	81.01	5.57	-1.89	.101	78.28	6.63	81.81	5.57	-1.25	.253

Note: M<sub>1</sub>= Group mean of first quarter grade average, SD<sub>1</sub>=Standard deviation of first quarter grade average, M<sub>2</sub>=Group mean of second quarter grade average, SD<sub>2</sub>=Standard deviation of second quarter grade average, M<sub>4</sub>=Group mean of fourth quarter grade average, SD<sub>4</sub>=Standard deviation of fourth quarter grade average; \*= significant at  $p \leq .05$

Table 7

*Dependent t-test results for all analyzed groups based on School Absences*

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Analyzed Group											
M <sub>1</sub>	SD <sub>1</sub>	M <sub>4</sub>	SD <sub>4</sub>	t	p	M <sub>2</sub>	SD <sub>2</sub>	M <sub>4</sub>	SD <sub>4</sub>	t	p
Mentors											
1.35	2.11	2.10	3.04	-1.29	.211	1.40	1.96	2.10	3.04	-1.47	.158
Mentees											
1.25	1.69	1.56	2.00	-.689	.502	2.63	2.28	1.56	2.00	1.67	.115
Similar Personality Match Mentees											
.50	1.00	1.50	1.29	-1.10	.353	2.25	2.50	1.50	1.29	.485	.661
Dissimilar Personality Match Mentees											
1.13	1.36	1.63	2.50	-.683	.516	2.88	2.59	1.63	2.50	1.36	.217

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Note: M<sub>1</sub>= Group mean of first quarter absences average, SD<sub>1</sub>=Standard deviation of first quarter absences average, M<sub>2</sub>=Group mean of second quarter absences average, SD<sub>2</sub>=Standard deviation of second quarter absences average, M<sub>4</sub>=Group mean of fourth quarter absences average, SD<sub>4</sub>=Standard deviation of fourth quarter absences average; \*= significant at  $p \leq .05$

Table 8

*Repeated Measures ANOVA Interaction between Similar and Dissimilar Personality Match*

*Mentees on Social Connectedness*

Variable	<u>Sim. Mentees</u>		<u>Dis. Mentees</u>		F	p	Partial- $\eta^2$
	M <sub>1</sub>	M <sub>2</sub>	M <sub>1</sub>	M <sub>2</sub>			
<b>Connectedness to Self</b>	2.96	2.69	2.81	2.98	1.97	.191	.16
Self-Esteem	3.19	2.69	2.92	3.13	4.72	.055	.32
Self-Management	2.73	2.70	2.70	2.83	.116	.741	.01
<b>Connectedness to Others</b>	3.12	2.94	3.19	3.13	.799	.392	.07
Friend	3.56	3.08	3.03	3.03	3.42	.094	.26
Parent	3.33	3.25	3.58	3.29	1.12	.314	.10
Sibling	3.11	3.00	2.81	3.14	1.45	.263	.15
Teacher	2.83	2.67	3.33	3.31	.140	.716	.01
Peer	2.85	2.80	3.09	2.80	.421	.531	.04
<b>Connectedness to Society</b>	2.89	2.51	2.76	2.67	2.59	.139	.21
Reading	2.75	2.31	2.72	2.49	.373	.555	.04
School	2.80	2.78	2.78	2.70	.022	.886	.00
Neighborhood	3.13	2.44	2.78	2.81	7.44	.021*	.43

Note: Sim. Mentees = Similar Personality Match Mentees; Dis. Mentees = Dissimilar Personality

Match Mentees; Variables in Bold=Broad measures of Connectedness; \* = significant at  $p \leq .05$ ;

Effect size (partial- $\eta^2$ ), small = .01, medium = .09, large = .25

Table 9

*Repeated Measures ANOVA Interaction between Similar and Dissimilar Personality Match*

*Mentees on Grade Average and School Absences*

Variable	<u>Similar. Mentees</u>				<u>Dissimilar Mentees</u>				F	p	Partial- $\eta^2$
	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	M <sub>4</sub>	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	M <sub>4</sub>			
<b>Grade Ave.<sub>1</sub></b>	82.50	81.70	80.92	79.68	78.29	78.28	80.63	81.00	5.14	.047*	.34
<b>School Abs.<sub>2</sub></b>	0.50	2.25	1.50	1.50	1.13	2.88	2.75	1.63	.036	.854	.00

Note: Hom. Mentees = Similar Personality Match Mentees; Het. Mentees = Dissimilar

Personality Match Mentees; <sub>1</sub> = Grade Average; <sub>2</sub> = School Absences; M<sub>1-4</sub>= Mean Grades per quarter of the school year; \* = significant at  $p \leq .05$ ; Effect size (partial- $\eta^2$ ), small = .01, medium = .09, large = .25

Appendix A

Five Factor Personality Inventory-Children



**Section 4. Administration**

**Instructions:** Each line has two sentences that tell how people feel and think about things. Five circles are between each sentence. Read the sentences and mark how much you agree with them. If you agree with a sentence, color in the circle closest to that sentence. If you somewhat agree with a sentence, color in the second closest circle to that sentence. Look at the example below. If you somewhat think that dogs are nice, you color in the second closest circle to that sentence.

Example: I think dogs are nice. ○ ● ○ ○ ○ I think dogs are scary.

Sometimes, it may be hard to choose one statement over the other. If this happens, color in the middle circle ("in between"). Use the "in between" choice as little as possible. If you do not understand a sentence, please ask for help. Remember, there are no right or wrong answers. Your answers show how you feel and think about things from day to day.

1.	I help people even if I have other things I need to do.	○ ○ ○ ○ ○	I won't help people if I have other things I need to do.
2.	I like to work on my own.	○ ○ ○ ○ ○	I like to work in groups.
3.	I would like to write poetry.	○ ○ ○ ○ ○	I wouldn't like to write poetry.
4.	I'm not good at remembering things.	○ ○ ○ ○ ○	I am good at remembering things.
5.	People talk about me behind my back.	○ ○ ○ ○ ○	People don't talk about me behind my back.
6.	I don't care if people are mad at me.	○ ○ ○ ○ ○	I care if people are mad at me.
7.	I will have a lot of parties when I get older.	○ ○ ○ ○ ○	I won't have a lot of parties when I get older.
8.	I am good at listening to classmates talk about their problems.	○ ○ ○ ○ ○	I am not good at listening to classmates talk about their problems.
9.	I work hard in class.	○ ○ ○ ○ ○	I don't work hard in class.
10.	People treat me nicely.	○ ○ ○ ○ ○	People pick on me.
11.	I laugh when someone makes a mistake.	○ ○ ○ ○ ○	I don't laugh when someone makes a mistake.
12.	I walk up and talk to strangers easily.	○ ○ ○ ○ ○	I don't walk up and talk to strangers easily.
13.	I want to learn about outer space.	○ ○ ○ ○ ○	I don't want to learn about outer space.
14.	I'm good at organizing.	○ ○ ○ ○ ○	I'm not good at organizing.
15.	I get confused when I'm mad.	○ ○ ○ ○ ○	I think clearly when I am mad.
16.	My way is the best way.	○ ○ ○ ○ ○	My way is not always the best way.
17.	I speak softly.	○ ○ ○ ○ ○	I speak loudly.
18.	I want to know why people do things.	○ ○ ○ ○ ○	I don't want to know why people do things.
19.	I double-check my work before handing it in.	○ ○ ○ ○ ○	I don't double-check my work before handing it in.
20.	I don't feel good about myself.	○ ○ ○ ○ ○	I feel good about myself.
21.	Most rules are not important to follow.	○ ○ ○ ○ ○	Following rules is important.
22.	I would like to go skydiving.	○ ○ ○ ○ ○	I wouldn't like to go skydiving.
23.	I like to think about fantastic or wild adventures.	○ ○ ○ ○ ○	I don't like to think about fantastic or wild adventures.
24.	I always do my best.	○ ○ ○ ○ ○	I do just enough.
25.	I feel happy most of the time.	○ ○ ○ ○ ○	I feel sad most of the time.
26.	I speak up when someone cuts in front of me.	○ ○ ○ ○ ○	I don't say anything when someone cuts in front of me.
27.	I'd like to work in a library for a day.	○ ○ ○ ○ ○	I wouldn't like to work in a library for a day.
28.	I like to play make-believe.	○ ○ ○ ○ ○	I don't like to play make-believe.
29.	I turn in my work late.	○ ○ ○ ○ ○	I have my work done on time.
30.	I usually feel afraid.	○ ○ ○ ○ ○	I don't usually feel afraid.
31.	I would never hit another person on purpose.	○ ○ ○ ○ ○	I would hit another person on purpose if I had to.
32.	I like working with others.	○ ○ ○ ○ ○	I like working by myself.
33.	I like eating new or different foods.	○ ○ ○ ○ ○	I only eat foods I like.

34.	I keep my clothes folded neatly.	○ ○ ○ ○ ○	I don't keep my clothes folded neatly.
35.	People care about me.	○ ○ ○ ○ ○	No one cares if I'm alive.
36.	I think people usually tell the truth.	○ ○ ○ ○ ○	I don't think people usually tell the truth.
37.	I'd like fighting fires for a day.	○ ○ ○ ○ ○	I wouldn't like fighting fires for a day.
38.	I only like one kind of music.	○ ○ ○ ○ ○	I like many kinds of music.
39.	I have trouble finishing my work on time.	○ ○ ○ ○ ○	I easily finish my work on time.
40.	When things go wrong, I try harder.	○ ○ ○ ○ ○	When things go wrong, I give up.
41.	I will work with someone I don't like.	○ ○ ○ ○ ○	I won't work with someone I don't like.
42.	I go to another room when new people come to my house.	○ ○ ○ ○ ○	I stay and talk to new people who come to my house.
43.	I'd like to play a musical instrument.	○ ○ ○ ○ ○	I'm not interested in playing a musical instrument.
44.	I stop working when I'm left alone.	○ ○ ○ ○ ○	I continue working when I'm left alone.
45.	I am slow to get angry.	○ ○ ○ ○ ○	I get angry quickly.
46.	I try to be nice to everyone.	○ ○ ○ ○ ○	I don't go out of my way to be nice to everyone.
47.	I like to spend my free time with friends.	○ ○ ○ ○ ○	I like to spend my free time by myself.
48.	I only like to play games I already know.	○ ○ ○ ○ ○	I like learning new games.
49.	I keep working on something until it is perfect.	○ ○ ○ ○ ○	I stop working on something when it is good enough.
50.	I feel like I fit in.	○ ○ ○ ○ ○	I feel like I don't fit in.
51.	When I'm mad at people, I keep it to myself.	○ ○ ○ ○ ○	When I'm mad at people, I tell them.
52.	I prefer to stay home and rest after school.	○ ○ ○ ○ ○	I prefer to go outside and be active after school.
53.	I like to think about what I'll do when I get older.	○ ○ ○ ○ ○	I don't spend time thinking about what I'll do when I get older.
54.	I want to do my part on group projects.	○ ○ ○ ○ ○	I want others to do the work on group projects.
55.	I get embarrassed easily.	○ ○ ○ ○ ○	I don't get embarrassed easily.
56.	I will fight for a good reason.	○ ○ ○ ○ ○	I will avoid a fight at all costs.
57.	I like being the center of attention.	○ ○ ○ ○ ○	I don't like being the center of attention.
58.	I would like to visit a different country.	○ ○ ○ ○ ○	I wouldn't like to visit a different country.
59.	I'm not good at planning ahead.	○ ○ ○ ○ ○	I'm good at planning ahead.
60.	I stay upset for a very long time.	○ ○ ○ ○ ○	I calm down quickly.
61.	Not thinking before I act gets me in trouble.	○ ○ ○ ○ ○	I stay out of trouble because I think before I act.
62.	I like to show off in front of class.	○ ○ ○ ○ ○	I don't like to show off in front of class.
63.	I have an active imagination.	○ ○ ○ ○ ○	I don't have an active imagination.
64.	I make sure everyone is following the rules.	○ ○ ○ ○ ○	I don't worry about whether everyone is following the rules.
65.	I get headaches when I'm in trouble.	○ ○ ○ ○ ○	I don't get headaches when I'm in trouble.
66.	I often share.	○ ○ ○ ○ ○	I don't usually share.
67.	I make sure I only do safe things.	○ ○ ○ ○ ○	I like to do dangerous things.
68.	I don't waste my time thinking about problems.	○ ○ ○ ○ ○	I like to think through problems.
69.	I don't need to have the highest grade.	○ ○ ○ ○ ○	I only want to have the highest grade.
70.	I like being surprised.	○ ○ ○ ○ ○	I don't like being surprised.
71.	Sometimes you have to be tough.	○ ○ ○ ○ ○	Sometimes you have to be gentle.
72.	I need time to relax.	○ ○ ○ ○ ○	I am always on the go.
73.	I like knowing how things work.	○ ○ ○ ○ ○	I am not interested in how things work.
74.	I am very careful not to make mistakes.	○ ○ ○ ○ ○	I don't worry too much about making mistakes.
75.	I like the way I look in the mirror.	○ ○ ○ ○ ○	I don't like the way I look in the mirror.

*Hemingway: Measure of Adolescent Connectedness*



**The Hemingway Measure of Adolescent Connectedness<sup>®</sup>**

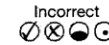
(MAC 5 Adolescent, grades 6-12)

M. J. Karcher, Ed.D., Ph.D., University of Texas at San Antonio

Adolescent Version A

**MARKING INSTRUCTIONS**

- Use number 2 pencil only.
- Make dark marks that fill the circle completely.
- Erase cleanly any mark you wish to change.
- Make no stray marks.



Name:  Number:  Date:

Sex:  Male  Female Grade:  6  7  8  9  10  11  12 Age:

Race/Ethnicity:  White  Black  Hispanic  Asian  Bi-racial  Other:

Who do you live with?  Mother  Father  Both  Other:

Please use this survey to tell us about yourself. Read each statement. MARK the number that best describes how true that statement is for you or how much you agree with it. If a statement is unclear to you, ask for an explanation. If it is still unclear, mark the "?".

"How TRUE about you is each sentence?"

	Not at all true	Not really true	Sort of true	True	Very true	? Unclear
(1) I like hanging out around where I live (like in my neighborhood).	1	2	3	4	5	?
(2) Spending time with friends is not so important to me.	1	2	3	4	5	?
(3) I can name 5 things that others like about me.	1	2	3	4	5	?
(4) My family has fun together.	1	2	3	4	5	?
(5) I have a lot of fun with my brother(s) or sister(s). (leave blank if you have none)	1	2	3	4	5	?
(6) I work hard at school.	1	2	3	4	5	?
(7) My classmates often bother me.	1	2	3	4	5	?
(8) I care what my teachers think of me.	1	2	3	4	5	?
(9) I will have a good future.	1	2	3	4	5	?
(10) I enjoy spending time by myself reading.	1	2	3	4	5	?
(11) I spend a lot of time with kids around where I live.	1	2	3	4	5	?
(12) I have friends I'm really close to and trust completely.	1	2	3	4	5	?
(13) There is not much that is unique or special about me.	1	2	3	4	5	?
(14) It is important that my parents trust me.	1	2	3	4	5	?
(15) I feel close to my brother(s) or sister(s). (leave blank if you have none)	1	2	3	4	5	?

PLEASE DO NOT WRITE IN THIS AREA



SERIAL #





	Not at all true	Not really true	Sort of true	True	Very true	? Unclear
(16) I enjoy being at school.	1	2	3	4	5	?
(17) I like pretty much all of the other kids in my grade.	1	2	3	4	5	?
(18) I do not get along with some of my teachers.	1	2	3	4	5	?
(19) Doing well in school will help me in the future.	1	2	3	4	5	?
(20) I like to read.	1	2	3	4	5	?
(21) I get along with the kids in my neighborhood.	1	2	3	4	5	?
(22) Spending time with my friends is a big part of my life.	1	2	3	4	5	?
(23) I can name 3 things that other kids like about me.	1	2	3	4	5	?
(24) I enjoy spending time with my parents.	1	2	3	4	5	?
(25) I enjoy spending time with my brothers/sisters. (leave blank if you have none)	1	2	3	4	5	?
(26) I get bored in school a lot.	1	2	3	4	5	?
(27) I like working with my classmates.	1	2	3	4	5	?
(28) I want to be respected by my teachers.	1	2	3	4	5	?
(29) I do things outside of school to prepare for my future.	1	2	3	4	5	?
(30) I never read books in my free time.	1	2	3	4	5	?
(31) I often spend time playing or doing things in my neighborhood.	1	2	3	4	5	?
(32) My friends and I talk openly with each other about personal things.	1	2	3	4	5	?
(33) I really like who I am.	1	2	3	4	5	?
(34) My parents and I disagree about many things.	1	2	3	4	5	?
(35) I try to spend time with my brothers/sisters when I can. (leave blank if you have none)	1	2	3	4	5	?
(36) I do well in school.	1	2	3	4	5	?
(37) I get along well with the other students in my classes.	1	2	3	4	5	?
(38) I try to get along with my teachers.	1	2	3	4	5	?
(39) I do lots of things to prepare for my future.	1	2	3	4	5	?
(40) I often read when I have free time.	1	2	3	4	5	?
(41) I hang out a lot with kids in my neighborhood.	1	2	3	4	5	?
(42) I spend as much time as I can with my friends.	1	2	3	4	5	?
(43) I have special hobbies, skills, or talents.	1	2	3	4	5	?
(44) My parents and I get along well.	1	2	3	4	5	?
(45) I try to avoid being around my brother/sister(s). (leave blank if you have none)	1	2	3	4	5	?
(46) I feel good about myself when I am at school.	1	2	3	4	5	?
(47) I am liked by my classmates.	1	2	3	4	5	?
(48) I always try hard to earn my teachers' trust.	1	2	3	4	5	?
(49) I think about my future often.	1	2	3	4	5	?
(50) I usually like my teachers.	1	2	3	4	5	?
(51) My neighborhood is boring.	1	2	3	4	5	?
(52) My friends and I spend a lot of time talking about things.	1	2	3	4	5	?
(53) I have unique interests or skills that make me interesting.	1	2	3	4	5	?
(54) I care about my parents very much.	1	2	3	4	5	?
(55) What I do now will not affect my future.	1	2	3	4	5	?
(56) Doing well in school is important to me.	1	2	3	4	5	?
(57) I rarely fight or argue with the other kids at school.	1	2	3	4	5	?

*Hemingway: Measure of PRE-Adolescent Connectedness*

**The Hemingway: Measure of PRE-Adolescent Connectedness (Grades 3-6: Pre-MAC5),  
Developed by M.J. Karcher, Ed.D., Ph.D., University of Texas-San Antonio**

Please use this survey to tell us what you do and who you are. Read each statement. Circle the number that best describes how true that statement is for you. If a statement is unclear to you, ask for an explanation. If the statement is *still* unclear or does not apply to you, circle the number and put a “?”.

**HOW TRUE about you is each sentence?** Not True=**1** Sort of True=**2** True=**3** Very True=**4**

	Not True			Very True
	1	2	3	4
1. <u>There are lots of things to do in my neighborhood</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. <u>I get along with my parents.</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. <u>I work hard at school.</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. <u>I like almost all of the kids in my class.</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. <u>I am good at reading.</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. <u>My friends spend a lot of time together.</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. <u>I like spending time with my parents.</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. <u>I try to get good grades in school.</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. <u>There are many kids at my school who I do not like.</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. <u>For fun I read on my own.</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. <u>I can name several things that other kids really like about me.</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. <u>I want my parents to be proud of me.</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. <u>I always do what my teachers tell me to do.</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. <u>I get into fights with other kids.</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. <u>I read for fun when I have free time.</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. <u>I like to spend time with my friends.</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. <u>I play with my brothers (or sisters) a lot. (Leave blank if an only child)</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. <u>I feel good about myself at school.</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. <u>I have a hard time paying attention in math class.</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. <u>I have fun with the other kids in my classes.</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. <u>I play a lot in my neighborhood.</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Please check: Did you fill in a circle for each statement?*

	Not True = <b>1</b>	Sort of True= <b>2</b>	True= <b>3</b>	Very True= <b>4</b>
	Not True			Very True
	1	2	3	4
22. I don't like my brothers or sisters. (Leave blank if you have none)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. I always do what my teachers tell me to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. I always get bored in school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. I love to read.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. I am lonely in my neighborhood.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. My teachers like the kind of kid I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. I really like my teachers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. I never get in trouble at school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. I trust my friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. My sisters (or brothers) are fun to be with. (Leave blank if you have none)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. I like school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. I can't sit still in class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. My friends and I argue too much.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. My parents are always proud of me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. School is a fun place.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. I get along with all of the kids in my classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. I wish I did not get into so much trouble.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. I like my neighborhood.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. I like spending time with my classmates.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**You finished the MAC-thanks for doing this!**

*Please check: Did you fill in a circle for each statement?*



*Cover Letter*

\_\_\_ \_\_\_ School District  
\_\_\_ \_\_\_ Ave.  
\_\_\_ \_\_\_, \_\_\_ \_\_\_\_\_

March 2011

Dear Parent or Guardian,

Our school district is pleased to announce that we will be coordinating a research project within the \_\_\_ tutoring program for this school year. All participants of the research project will be students involved with the \_\_\_ program. Those who agree to participate will fill out questionnaires during two different occasions, once in March, and once again in June. The questionnaire takes 30 to 45 minutes to complete and asks students about their personality, social connectedness, and general information. Research has supported the use of mentoring programs across student grades to improve student academics as well as student connectedness to the school community. This research aims to provide evidence that \_\_\_ is effective for all students involved.

This research project will also serve as a thesis project for a graduate student in the School Psychology program at Rochester Institute of Technology. Toni Jolevski, is also a \_\_\_ High School graduate ('05) and is interested in the unique benefits that \_\_\_ brings to students. Child and parent permission is necessary in order for a student to participate in the study. Please complete the additional parent consent and have your child complete the assent form.

Thank you for your time and please consider this great opportunity to benefit your child.

*Child Informed Assent Form*

The Personality Interaction of Mentors and Mentees in a Youth Mentoring Program

We are doing scientific research about how personality helps older and younger students in the \_\_\_ program.

There are some things about this project you should know. You will first be asked to complete a personality survey, and two other surveys. A survey is a list of questions that have no right or wrong answers. The questions will ask about who you are, how you act, and how close you are to others. This should take a total of 30 to 45 minutes during your time afterschool in the \_\_\_ program. You will also be asked to fill out another 10 minute survey near the end of the school year and the \_\_\_ program.

If you decide to take part in this study there may be benefits, but not everyone who takes part in this study may benefit. A benefit means that something good happens to you. We think these benefits might be: collecting information on how good the \_\_\_ program is in improving grades, school attendance, and your feelings on school, family, friends, and yourself. This information may be used to learn more about the \_\_\_ program, and can help to keep the program going in the future.

When we are finished with this study we will write a report about what was learned. This report will not include your name or that you were in the study.

You do not have to be in this study if you do not want to be. If you decide to stop after we begin, that's okay too. Your parents know about the study too.

If you have questions about the study contact Mr. Jolevski at txj7942@rit.edu, M\_. \_\_\_ at \_\_\_\_, or Dr. Jennifer Lukomski at jalgsp@rit.edu.

If you decide you want to be in this study, please sign your name.

I, \_\_\_\_\_, want to be in this research study.

\_\_\_\_\_  
Sign your name here

\_\_\_\_\_  
Date

\_\_\_\_\_  
Parent Signature

\_\_\_\_\_  
Date

*Parent Informed Consent Form*

The Personality Interaction of Mentors and Mentees in a Youth Mentoring Program

Your child has been invited to join a research study examining how the personality matching of tutors and younger students in \_\_\_ are affected by personality types.

If you agree, your child will be asked to complete a short personality test and two more surveys in April. One survey will ask your child to rate how close he/she identifies with the school and the community. The second survey will ask your child information about his/her age, grade, and afterschool activities. These will take a total of 30 to 45 minutes for your child to complete. After or close to the end of the tutoring program, your child will be asked to take another 10 minute survey.

It is reasonable to expect the following benefits from this research: Data collection of program effectiveness in improved grades, school attendance, and connection to school, family, friends, and self. This information may be useful to showcase the \_\_\_ program for future funding and improvements.

Grades, attendance, and other personal information will be confidential to protect it from being linked to question responses. \_\_\_ and Toni Jolevski will see your child’s grades and attendance information. No other people will have access to this information. After the name of your child is given to the Mr. Jolevski, a code will be assigned to your child. The only source linking your child’s name to the code will be in a secured location. All information completed by your child or provided by the school will be replaced by his/her personal code instead of a name.

Participation in this study is voluntary. Your child has the right not to participate or to leave the study at any time. Deciding not to participate or choosing to leave the study will not result in any loss of benefits to which your child is entitled. If your child decides to leave the study, you or your child should notify one of the contacts listed below.

If you have questions or concerns about the study, contact Toni Jolevski at txj7942@rit.edu, the program supervisor at \_\_\_, or Dr. Jennifer Lukomski at jalgsp@rit.edu. If you have questions or concerns about your child’s rights and welfare as a research subject, contact Heather Foti at hmfsrs@rit.edu or 585-475-7990.

As parent or legal guardian, I authorize \_\_\_\_\_ (child’s name) to become a participant in the research study described in this form.

Child’s Date of Birth

Parent or Legal Guardian’s Signature

\_\_\_\_\_

\_\_\_\_\_