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Heather C. Phipps
University of Nebraska at Omaha

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The Effects of Positive School Engagement on Math and Reading Achievement in

Midwestern Suburban Middle School Students

by

Heather C. Phipps

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Kay A. Keiser, Ed.D., Chair

Peter Smith, Ed.D

Jeanne Surface, Ed.D.

Neil Grandgenett, Ed. D.

Larry Dlugosh, Ed.D.

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The Effects of Positive School Engagement on Math and Reading Achievement in

Midwestern Suburban Middle School Students

Heather Phipps

University of Nebraska at Omaha, 2010

Advisor: Dr. Kay A. Keiser

Abstract

Ensuring high academic achievement in schools with increasingly diverse students is a challenge. Assessing student engagement can be a powerful tool in predicting potential success and identifying students who may need additional support. Positive youth development theory supports focusing on a young person's strengths, and an asset-based approach to education can raise student achievement. During the 2007-2008 school year, seventh grade students were assessed for school engagement using the Developmental Assets Profile. Students were identified as either not engaged or engaged in school. For two years, achievement in reading and math as well as grade point average was collected and analyzed using two-way analyses of variance for time (seventh grade to eighth grade) and engagement level. Overall findings indicate that students who are engaged in school achieve at higher rates and have higher grade point averages in both reading and math. Identifying students who are not engaged and using techniques to raise engagement levels can lead to higher achievement.

Acknowledgements

I want to start by thanking my father for modeling the importance of constantly learning and for convincing me, with quiet support and encouragement, that there was nothing I could not do. I want to thank Carol for loving me unconditionally and for nurturing and supporting all of my dreams.   I want to thank my mom and Jerry for instilling in me the importance of always pursuing new thoughts. You are both loving examples of lifelong learners. I want to thank Rod and Cindy for loving and supporting me as if I were their own. I want to thank Kent and Sarah. Kent, you are smart, successful, and driven, but what I love the most about you is how much you love your own family. Sarah, you have always been the true heart of our family. You are fun and creative and can do anything you set your mind to, but what I love most about you is how deeply you love the people in your life.

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I have been blessed with colleagues who have taught me the real lessons about school engagement.   My new Millard North family has supported me through the final steps in this journey as well as the students of CMS who taught me about engagement

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Chapter 1

Introduction

Students today come to school with a variety of personal, social, family, school, and community experiences. Their background knowledge and support systems are as varied as the students themselves, yet schools are required to educate them equally. It is more important than ever to identify the strengths students have both personally and socially as well as their family, school, and community engagement. Students with more of these strengths are less likely to do things like skip school, and they are more likely to do things like succeed in school (Benson, Galbraith, Espeland, 1994).   A young person's beliefs in areas such as enjoying school, feeling safe at school, and having caring teachers can determine how successful they will be in core curricular areas in school. This is not about knowing mathematic formulas and reading strategies. These strengths that promote student achievement are internal and external assets. A strong family, a strong social network, and finally a strong positive connection to school can influence academic achievement (Benson, Galbraith, & Espeland, 1994; Klem & Connell, 2004; Strahan & Layell, 2006; Walsh, 2006; Wentzel, 1998).

With increased pressure to meet adequate yearly progress for federal No Child Left Behind (2002) reporting, schools are examining all practices in order to achieve academic success for all students. In order to impact student achievement, it is necessary to study what-and who-impacts that achievement. Research on academic success in adolescence has focused primarily on the non-affective elements of teaching (Crosnoe, Johnson, & Elder, 2004), but increasing student achievement requires more than just

content knowledge. The connection young people feel to their school, their engagement in the school, can impact the achievement as well.

The power of school engagement and positive relationships to influence academic achievement was a factor worthy of further research. While supportive adults may influence achievement, it is important to note that Wentzel (1998) found that the link between supportive relationships and grade point average was only indirect. She found that positive teacher-student relationships impact interest in class and pursuit of socially-responsible goals, but they do not directly increase grade point average (GPA). Also the instruments designed to evaluate teacher-student relationships have focused primarily on young children. There was a need for further examination of this relationship in older elementary and middle school students (Ang, 2005). It may have been possible to show a more direct correlation between school engagement and the teacher-student relationship and GPA. This research attempted to look more directly at the impact of school engagement on middle school students in the areas of reading and math.

Theoretical or Conceptual Framework

There has been a shift in recent years from a focus on what is wrong with young people to what is right with them. There has been a move away from identifying the weaknesses in adolescents and trying to fix them and toward identifying strengths and trying to build upon them. This positive focus is seen most profoundly in the work around the 40 Developmental Assets. Search Institute defined the 40 Developmental Assets framework which is based on an analysis of research studies and extensive research. There were originally 30 Assets, but the number was increased to 40 in the mid-90s based on further research (Scales, Sesma, & Bolstrom, 2004). The Assets are

strengths. The more Assets a young person has, the more successful he or she will be. Asset development is meant to protect young people from risky behaviors and promote positive, successful behaviors such as academic success. In a school setting, the primary purpose is to educate. Student achievement is one important measure of success.

Current models of psychology also have a focus on strengths in young people rather than a focus on deficits (Jimerson, Sharkley, Nyborg, & Furlong, 2004). Positive youth development (PYD) is the theoretical basis for this work. PYD supports the premise that the more strengths a young person exhibits, the higher his or her academic achievement will be. The 40 Developmental Assets are measurable indicators of these strengths. Research indicates that increases in levels of assets over time will improve adolescent well-being as measured in things like school grades (Scales et al., 2004).

Purpose Statement

While there are an increasing number of theories involving positive youth development, there was little research critically examining the models, particularly in the school context (Jimerson et al., 2004). More research was needed to determine if there is a relationship between the number of school strengths, or assets, a young person reports having and his or her academic achievement. Many questions remained about assessment and an asset-based focus on positive youth development (Lubbe & Eloff, 2004).

Thus, the purpose of this exploratory efficacy survey study was to determine reading Essential Learner Outcome assessment results, math Essential Learner Outcome assessment results, reading grading point average, and math grade point average of eighth grade students who rated themselves as not engaged in school and engaged in school.

Research Questions

The following research questions were used to analyze students who rated themselves as not engaged in school and students who rated themselves as engaged in school on the Developmental Assets Profile.

Research question #1: Does the students' level of school engagement affect their score on the reading ELO word meaning strand score from seventh to eighth grade?

Research question #2: Does the students' level of school engagement affect their score on the reading ELO basic comprehension strand score from seventh to eighth grade?

Research question #3: Does the students' level of school engagement affect their score on the reading ELO analyze text strand score from seventh to eighth grade?

Research question #4: Does the students' level of school engagement affect their score on the reading ELO reading strategies strand score from seventh to eighth grade?

Research question #5: Does the students' level of school engagement affect their score on the math ELO geometry strand score from seventh to eighth grade?

Research question #6: Does the students' level of school engagement affect their score on the math ELO algebra strand score from seventh to eighth grade?

Research question #7: Does the students' level of school engagement affect their reading GPA from seventh to eighth grade?

Research question #8: Does the students' level of school engagement affect their math GPA from seventh to eighth grade?

Definition of Terms

Adolescent. For this study, an adolescent is any student enrolled in a middle school.

Community context domain. The community context domain is one of the five contexts assessed in the Developmental Assets Profile (DAP). This area relates to activities in the larger community such as sports, creative activities, and religious activities (Search Institute, 2005).

Developmental Assets. Developmental Assets are 40 common sense, positive experiences and qualities that help influence choices young people make and help them become caring, responsible adults (Benson et al., 1994).

Developmental Assets Profile (DAP). Developmental Assets Profile is a 58-item survey that measures a young person's strengths across eight categories of Developmental Assets and five contexts: personal, social, family, school, and community.

Essential Learner Outcome Assessments (ELOs). Essential Learner Outcomes (ELOs) are the criterion-referenced tests in the Millard Public Schools used for No Child Left Behind (NCLB) reporting.

Family context domain. The family context domain is one of the five contexts assessed in the Developmental Assets Profile (DAP). This area relates to positive family communication and support, clear family rules, quality time at home, and similar family-related activities and experiences (Search Institute, 2005).

Math achievement. Math achievement is defined as student scores on math criterion-referenced tests and grades (on a 1-5 scale) in math class.

Middle school. Middle school is defined as a sixth grade through eighth grade school that utilizes interdisciplinary teams, exploratory classes, and middle school best practices.

Personal context domain. The personal context domain is one of the five contexts assessed in the Developmental Assets Profile (DAP). This context area relates to individual psychological and behavioral strengths such as self esteem and honesty (Search Institute, 2005).

Positive youth development theory. PYD is a psychological theory which states that the more strengths, relationships, positive experiences, and characteristics a young person has, the safer he or she is when presented with risk and, just as importantly, the more likely they are to experience success and academic achievement *(*Jimerson et al., 2004).

Protective factors. Protective factors are any behaviors in a person's life that decrease the probability of a negative outcome *(*Jimerson et al., 2004).

Reading achievement. Reading achievement is defined as student scores on reading criterion-referenced tests and grades (on a 1-5 scale) in reading class.

Risk factors. Risk factors are any behaviors in a person's life that increase the probability of a negative outcome *(*Jimerson et al., 2004).

School context domain. The school context domain is one of the five contexts assessed in the Developmental Assets Profile (DAP). This area relates to clear and fair school rules, encouragement from teachers, a caring school environment, feeling safe at school, caring about school, being motivated to learn, and being actively engaged in reading and learning (Search Institute, 2005).

School engagement. School engagement for the purposes of this study is defined as a score above the school mean on the school context of the developmental assets profile.

Social context domain. The social context domain is one of the five contexts assessed in the Developmental Assets Profile (DAP). This area relates to social relationships with people outside of the family such as friends (Search Institute, 2005).

Teacher/Student Relationships. Student/teacher relationships are defined as the level of compatibility, personal communication, and trust (Walsh 2006) between a student and a teacher.

Assumptions

It was assumed in this study that student engagement in and connection to school can be measured using the school context results of the Developmental Assets Profile. As the Developmental Assets profile is a self-report instrument, it was also assumed that all students were honest and candid when completing their profile.

There were two measures of academic achievement in this study: Essential Learner Outcome assessments and grade point average. It was assumed in this study that the district assessment is an effective measure of mastery of the curriculum. The assessments included in this study were for the content areas of reading and math. These are the core areas assumed to be indicators of overall achievement in federal No Child Left Behind (2002) reporting. Grade point average was assumed to be an indicator of a student's ability to participate effectively in coursework and achieve success as defined by the teacher.

The design of this study had several strong features. All participants experienced a consistent school climate from sixth grade through eighth grade. The focus of staff development at the research school was on school engagement and relationship-building with students. All participants in the study participated in a consistent school-wide program focused on the 40 Developmental Assets. All participants rated themselves as engaged in the family context and social context of the Developmental Assets Profile. The goal was to identify students who all have positive family engagement and positive social relationships, and then to separate out those who report not having school engagement. All data was available through the school district's database, and all data were uniformly required and uniformly collected.

Limitations

This exploratory efficacy survey study was limited to students in a midwestern, suburban school district. The study subjects ($N = 30$) represented a real world, naturally formed group ($n = 15$) of students who rated themselves as not engaged in school and a randomly assigned group ($n = 15$) of students who rated themselves as engaged in school to match the number of students in the naturally formed group. Using the test results from one suburban school may skew the statistical results and reduce the utility and generalizability of the findings.

Delimitations

The study was delimited to eighth grade students in a suburban school district who were in attendance at the research school from sixth grade through eighth grade, 2006-2009 school years. The findings were delimited to the students who rated themselves as engaged in both the family context domain and social context domain on

the Developmental Assets Profile and engaged or not engaged on the school context domain.

Significance of the Study

This study contributed to research, practice, and policy. The study is of significant interest to educators because there is a considerable focus on school engagement and its impact on school success. The connection between school engagement and achievement has implications for students, parents, and school staff.

Contribution to research. A review of professional literature suggested that more research was needed on the connection between school engagement and achievement of middle school students. This study also contributed to the body of knowledge about the 40 Developmental Assets and the importance of teacher-student relationships.

Contribution to practice. As a result of this research a suburban school district may decide whether or not to continue a strategic plan focused on school engagement and the 40 Developmental Assets. A suburban school may decide whether staff development initiatives and instructional programs focused on relationship-building should be continued.

Contribution to policy. The results of this study offered insights into the most effective use of staff development time. This research may provide information about the usefulness of data from the Developmental Assets Profile for students preparing for transition into high school.

Outline of the Study

The literature review relevant to this research study is presented in Chapter 2. This chapter reviews the professional literature related to school engagement for middle

school students and its impact on achievement. Chapter 3 describes the research design,

methodology, independent variables, dependent variables, and procedures that will be

used to gather and analyze the data of the study. This includes a detailed synthesis of the

participants, a comprehensive list of the dependent variables, the dependent measures,

and the data analysis used to statistically determine if the null hypothesis is rejected for

each research question. Results of the study are detailed in Chapter 4 and discussed in

Chapter 5.

Chapter 2

Review of Literature

Schools today are attempting to meet the needs of all students equally although they are coming to school with a variety of strengths and levels of engagement. Students who experience more strengths and higher engagement are more likely to succeed in school (Benson, et al., 1994). These strengths that promote student achievement are internal and external assets. This research builds on the theory of positive youth development and focuses on engagement as defined by the 40 Developmental Assets Framework. A strong family, a strong social network, and finally a strong positive connection to school can influence academic achievement (Benson, et al., 1994; Klem & Connell, 2004; Strahan & Layell, 2006; Walsh, 2006; Wentzel, 1998).

High Academic Achievement Occurs with Positive Youth Development

While historically psychological models have focused on deficits as a way of determining risk in young people, the most current theories are focusing on building up positive qualities in order to promote positive behavior and prevent risky behaviors (Jimerson, et al., 2004; Lubbe & Eloff, 2004). A critique of deficit models led to a call for "something better" and from that emerged a collection of models now called positive youth development (Benson, Scales, Hamilton, Sesma, Hong, & Roehlkepartain, 2006). While there is not currently a consistent definition, there are several emerging models of positive youth development. Additive or Compensatory models suggest that the more positive qualities a young person has, the more positive behaviors they will exhibit and the less likely they will be to engage in risky behaviors. In contrast, Interactive or Risk-Protection models suggest that the positive qualities only come into play when young

people are confronted with stressful or risky situations. A combination of these theories, the Protective-Protective Model, suggests that both the presence and number of these positive qualities as well as using them in appropriate situations reduces risk the most (Jimerson et al., 2004). The more strengths, relationships, positive experiences, and characteristics a young person has, the safer he or she is when presented with risk and, just as importantly, the more likely they are to experience success and academic achievement.

One structure for positive youth development is the Developmental Asset Framework. Assets are positive experiences, characteristics, or qualities identified by Search Institute as having the potential to promote positive behaviors or protect young people from risky behaviors. The Assets are sometimes described as building blocks needed for success. There are 40 specific Assets identified in Figure 1 (Benson, et al., 1994; Roehlkepartain & Leffert, 2000; Scales, et al., 2004; Scales, 2005; Search Institute, 2005).

Search Institute has historically focused its research on the assets necessary for success in middle childhood based on a belief that "positive development in middle childhood keeps or puts children on a path to experiencing this kind of successful adolescence" (Scales et al., 2004, p. 5). There were initially 30 assets identified but the number was increased to 40 in the mid-1990s based on further research. The importance of multiple contexts is also emphasized in Search Institute's work. Young people function in a variety of settings- or contexts.

Several strength-based measures are recommended in the research for assessing students and the number of Assets they possess (Jimerson et al., 2004). The Behavioral

Assessment Scale, Behavioral and Emotional Rating Scale, Developmental Assets Profile

(DAP), and Multidimensional Student Life Satisfaction Scale are among the tools

Jimerson (2004) describes. The Developmental Assets Profile (DAP) is a tool to measure

student assets in two ways: by asset category or by context. There are five contexts

reported: personal, social,

Figure 1 Search Institute's 40 Developmental Assets

External Assets	Internal Assets
Support	**Commitment to Learning**
1. Family support 2. Positive family communication 3. Other adult relationships 4. Caring neighborhood 5. Caring school climate 6. Parent involvement in schooling	21. Achievement motivation 22. School engagement 23. Homework 24. Bonding to school 25. Reading for pleasure
Empowerment	**Positive Values**
7. Community values youth 8. Youth as resources 9. Service to others 10. Safety	26. Caring 27. Equality and social justice 28. Integrity 29. Honesty 30. Responsibility 31. Restraint
Boundaries and Expectations	**Social Competencies**
11. Family boundaries 12. School boundaries 13. Neighborhood boundaries 14. Adult role models 15. Positive peer influence 16. High expectations	32. Planning and decision making 33. Interpersonal competence 34. Cultural competence 35. Resistance skills 36. Peaceful conflict resolution
Constructive Use of Time	**Positive Identity**
17. Creative activities	37. Personal power

18. Youth programs	38. Self-esteem
19. Religious community	39. Sense of purpose
20. Time at home	40. Positive view of personal future

family, school, and community (Scales, et al., 2004). The research related to this study focused on the context areas of social, family, and most especially school.

Developmental contexts (places, settings, ecologies, and relationships) have the potential to generate supports, opportunities, and resources for young people. Changes in the contexts a young person experiences can change the outcomes a young person experiences (Benson et al., 2006).

The social context area focuses on the assets in the category of social competencies as well as support, role models, and helping others. Young people who report high scores in this context have positive relationships in their lives, and they are able to make friends and express their feelings easily (Search Institute, 2005). Social control theory states that young people must experience two types of bonds in their life: involvement and attachment. First they must be involved with adults to establish a relationship, and then they can become attached to those adults (Scales et al., 2004). These "other adult relationships" are a developmental asset.

The family context area focuses primarily on the categories of support and boundaries and expectations. "High scores on this scale suggest a young person with a safe, warm, and supportive family, with good parent-child communication" (Search Institute, 2005, p. 28). There are fewer adults in families today according to a study of the Big Brothers Big Sisters program (Hyslop, 2006), but regardless of the number of adults in the family, the connection, the relationship, is essential for young people to thrive. Research indicates

that family closeness, communication, and engagement promote healthy behaviors in youth (Youngblood, Theokas, Schulenberg, Curry, Huang, & Novak, 2009).

The school context area focuses on all of the assets related to the school environment, teacher-student relationships, and attitudes toward school. This context involves both external assets related to the school, such as a safe and caring environment and clear school rules, as well as internal assets related to the young person's own commitment to learning (Search Institute, 2005).

While the "context" areas of the Developmental Assets Profile have been less studied than individual asset "categories," some studies focused on a more creative approach to asset interpretation. Chisholn (2007) researched both "Bonding to School" and "School Engagement" in her Stanford University thesis. She used diary observations of street-smart inner-city youth to identify the most common assets the youth displayed. Though strength-based models, or positive youth development models, are relatively new in psychological study, the theories suggest effective youth programs build upon strengths and focus on "capacity-building" (Jimerson et al., 2004). Research indicates that the more assets a student has, the more he or she will thrive (Scales, Benson, & Mannes, 2006).

While educational psychologists are beginning to adopt an asset-based approach to the study of young people, the movement is relatively new. In a study in South Africa, Lubbe & Eloff (2004) examined the perceptions of professionals in the field about asset-based assessment. Collecting data in focus groups and field notes, the researchers confirmed a new focus on positive youth development. They also identified the need for a focus not only on the individual, but also on the community. The Developmental

Assets Profile (DAP) assesses young people in several contexts including personal, social, family, school, and community.

Positive youth development and an asset-based approach can provide both protective and promotive factors for young people. Protective factors are those things that protect a young person from risky behaviors. Promotive factors are those things that promote thriving factors. A longitudinal study of adolescents found that positive relationships, higher "support" results, may actually provide an even greater promotive factor than protective factor (Scales et al., 2004).

Assets can be identified as either internal or external. The research points to internal factors such as teamwork and lifelong learning as important assets (Lubbe & Eloff, 2004). Neither internal nor external factors can be weighed in isolation.

Relationship-Focused Environment

Several items identified in the school context of the Developmental Assets profile include a caring school, teachers who encourage learning, and caring about school. Students need to know that teachers care. In order to effectively build assets in young people, there needs to be a focus on relationship-building. Middle school is a time of growth and change for adolescents. The middle school concept is one of the most important factors in improving achievement for these young people (Erb, 2006). Too often middle school is seen as a transition between elementary and high school instead of a significant developmental period unto itself. These students are pushed and encouraged to be self sufficient. Read alouds and group work give way to direct instruction and independent practice. Caring and nurturing give way to accountability and tough love.

Student perceptions of the teacher-student relationship influence both academic achievement and student engagement/motivation. Positive youth development and a focus on Developmental Assets require a renewed focus on these relationships. Students need to know that an adult cares about them in order to be engaged and/or motivated. In multiple research studies, students who reported high levels of teacher support were up to three times more likely to have high levels of engagement. Students with high levels of engagement were up to 75% more likely to do well on attendance and achievement (Brok, Levy, Brekelmans, & Wubbels, 2005; Klem & Connell, 2004; Protherone, 2005; Walsh, 2006).

Relationships are the foundation of engagement and academic success in school, and caring is a fundamental element of relationships. "Teachers are the brokers of caring in schools" (Bosworth, 1995, p. 686). In her one year study of middle school students' perceptions of caring, Bosworth (1995) found that students had positive relationships with teachers who helped with homework, valued individuality, showed respect, showed tolerance, explained work, and encouraged them. Students characterized these things as "caring". Teachers who display caring have students who are more actively engaged in academic work. Engagement and motivation impact achievement. The teacher-student relationship influences each of these things. In an attempt to discover the significance of teacher gender influence on motivation, Martin & Marsh (2005) actually found that the teacher-student relationship accounted for a third of the variance in student motivation.

The push to get students ready for the perceived "real world" of high school can result in teachers who focus on encouraging independence rather than working to establish positive relationships with students. However, middle school students respond

more positively to teachers who they believe care about them. In fact, this relationship is more important to achievement in middle school than it is in elementary school (Erb, 2006; Klem & Connell, 2004; Meece, 2003). Middle school advocates and middle school students themselves promote caring relationships as an essential component of academic success (Alder, 2002). Research has shown that positive teacher-student relationships can protect middle schoolers and promote higher academic achievement (Ang, 2005; Crosnoe, et al., 2004).

Relationships Promote High Academic Achievement

"When the drive to connect is nurtured in the classroom, the natural drive to be competent leads to academic achievement" (Sullo, 2007, p. 18). Relationships matter in middle school. They influence achievement. Middle school students experience greater academic success when they feel they have positive relationships with their teachers (Hamre & Pianta, 2003; Klem & Connell, 2004; Strahan & Layell, 2006; Walsh, 2006; Wentzel, 1998). Academic success can manifest itself in many ways: work completion, grade point average, standardized assessments, etc. A positive teacher-student relationship can have an impact on any or all of these factors. While this is true for all students, it is especially true for students who are at-risk in some way.

Middle school students can be at risk for academic problems if they do not experience school engagement and positive relationships with the adults and peers in their lives. Research indicates that student perception of teacher support is a predictor for academic achievement (Davis, 2003). A caring school and encouraging teachers are two of the indicators in the school context category on the Developmental Assets Profile.

One theory for this is that positive relationships lessen the negative effects of difficult situations in the lives of adolescents. Without a support system, young people may not be able to overcome stressful situations (Wentzel, 1998).

Encountering new and difficult curricula can be an academically stressful situation for students. The support of a caring adult can help students achieve success. The positive influence of relationships can be felt strongly in settings where students have not been academically successful (Bosworth, 1995; Klem, 2004; Strahan & Layell, 2006). Students will work hard for a teacher they like and perceive as helpful (Bosworth, 1995; Mendes, 2003).

When trying to close achievement gaps and help struggling schools succeed, establishing positive relationships needs to be a focus. Students believe that teachers who are caring will be helpful when they encounter a new and difficult situation. Students have a more positive relationship with teachers they perceive as being helpful (Ang, 2005). "Helping" was the most common theme to emerge in a 1995 study of middle school students' perceptions of a caring teacher (Bosworth, 1995). This theme was confirmed by Alder (2002) in her study of urban middle school students and their perceptions of caring. She identified "helpfulness" as the governing theme in caring relationships.

In Wentzel's (1998) research of sixth graders in a sixth through eighth grade middle school, she found that a positive perception of teacher support was unique in its link to classroom functioning. Students perform the necessary tasks associated with high achievement (work completion, goal setting, appropriate behavior, etc.) in classrooms

with caring adults. "Schools with the highest levels of teacher caring had the highest levels of academic achievement" (Strahan & Layell, 2006, p. 147).

This classroom functioning is necessary not only for at risk students but for all students. The influence of the teacher-student relationship can be seen in students at all levels of academic success. Challenging gifted students is easier when the students have a relationship with a caring adult. Adolescents are more likely to welcome challenges and participate effectively in advanced curricula if they have an effective support system at school (Klem & Connell, 2004; Rayneri & Gerber, 2004). Caring teachers with positive student relationships convey high expectations for academic achievement (Protherone, 2007). This is useful for students at all levels and increases academic success.

When gifted students achieve at or below grade level on standardized assessment measures or earn low grades in coursework, teachers should question the cause. Research shows there can be a disconnect between the learning needs of gifted students and the learning environment. Teachers need to know their students, have a relationship with them, in order to provide the best environment for them (Rayneri & Gerber, 2004).

In addition to at risk and gifted students, breaking the research down by ethnic and socio-economical groups may also prove useful. Research data from the National Longitudinal Study of Adolescent Health showed that positive, caring teacher-student relationships benefitted all students regardless of ethnic and socio-economic status and was not higher in higher-achieving schools (Crosnoe, et al., 2004).

GPA and other indicators of academic achievement are influenced by student engagement. Educators examine student engagement because higher levels of

engagement result in higher academic achievement. Klem and Connell (2004) conducted a comprehensive study of these links. The study correlated student and teacher reports of student engagement, experiences of teacher support, and several measures of academic performance and attendance. Consistently the study showed that high levels of engagement resulted in high achievement. Middle school students with high reported levels of engagement were more than twice as likely to do well on the attendance and achievement index.

Sanchez-Fowler, Banks, Anhalt, Hinrichs Der, & Kalis (2008) also conducted a study to examine the relationship between the teacher-student relationship and behaviors and achievement. They found a statistically significant relationship between the two. The greater the relationship, the less likely students were to exhibit anti-social behaviors. The greater the relationship, the more likely teachers were to rate students high on academic rating scales.

Principals who want to focus on instructional leadership need to help teachers find ways to connect with students and build relationships. Improving achievement involves changing school climate. Implementing middle school reform involves helping teachers change how they relate to students (Erb, 2006). In addition, district hiring practices need to address selecting and retaining the most effective teachers who will work to build relationships with students (Darling-Hammond, 1999). Socially and emotionally aware teachers are more likely to be joyful and enthusiastic in class. They handle their own emotions better and are better able to connect with students (Jennings & Greenburg, 2009).

Personal information, learning dispositions, and skill level are all key things to know about students. Strategies such as student information cards and questionnaires can help teachers learn personal information. Addressing multiple intelligences and assessing learning styles can inform teachers about learning dispositions and positively influence relationships (Alder, 2002; Olson, 2003). Formative assessment of all kinds provides valuable data about skill level (Walsh, 2006). Teaching styles that are relational and nurturing as well as those that tap into the power of effective instructional strategies foster caring relationships and improve achievement (Edwards, Mumford, Shillingford, & Serra-Roldan, 2007).

Many of these strategies are common sense although they may not be common practice (Protherone, 2005; Protherone, 2007). Emotional intelligence and self-management are keys to identifying student emotions and understanding teacher responses to conflict and confrontation with students. Teachers who work to establish caring relationships with students both convey and understand feelings. "Feelings" emerged as the second most common theme in Bosworth's (1995) study of middle school students. Students understand that in a positive, caring relationship both individuals are aware of the feelings involved.

Specific teacher behaviors can be emphasized to help establish these relationships. In a classroom setting, friendly and understanding behaviors have a more positive relationship to achievement than dissatisfied and correcting behaviors (Brok et al., 2005). Students respond to positive feeling tone. Alder (2002) found that students identified yelling and negative tone and comments as characteristics of teachers not identified as caring. Focusing on the first few weeks of school and building a caring community can

be an effective use of time. Teachers need to call students by name, talk about themselves, and stay aware of student feelings (Mendes, 2003; Protherone, 2007; Strahan & Layell, 2006).

Students identify specific behaviors that caring teachers demonstrate in the classroom. These behaviors have a direct influence on the teacher-student relationship. Teachers are characterized as caring based on classroom practices (providing fun activities, explaining work, showing respect, and checking for understanding), nonclassroom activities (providing before and after school help, helping with personal problems, and going the extra mile), and personal characteristics (being nice, polite, and involved) (Bosworth, 1995). These behaviors are critical to academic success in adolescence.

The middle school years are an important time for adolescent development physically, socially, and cognitively. "Schools, along with peers and families, play an important role in fostering young peoples' healthy development through the adolescent years" (Meece, 2003, p. 109). Instructional practices such as block scheduling, advisory teams, looping programs, and interdisciplinary teams provide time for students to connect to and establish relationships with adults (Meece, 2003). These relationships impact achievement in reading and math. Middle level educators understand that puberty has a profound impact on the cognitive lives of young people. Middle level instructional practices are necessary to help adolescents navigate this impact (Armstrong, 2006).

There is also cognitive theory to explain reading and math achievement in the middle years. The theories of Piaget identify the necessary cognitive development for reading comprehension. Young people are only able to read phonemically, for example,

when they are able to complete concrete operations. By middle level, students are able to use metacognition and respond emotionally to text (Armstrong, 2006). Benson (2008) identifies entire categories of reading sparks, or areas of extreme interest, for young people at this age: fiction, poetry, nonfiction, memoirs, biography, and autobiography.

The middle school concept has come under fire in response to concerns about math achievement. Research indicates that there may be a need for research-based math curriculum, adherence to national math standards, and an increase in teacher backgrounds to change the way math is taught (Bandlow, 2001). Math can sometimes be a subject area that does not excite or engage students. Students may respond positively to a caring adult who can relate math to an area of interest for the young person or explain that being academically well-rounded may help promote success later in life (Benson, 2008). The theories of Piaget also identify why it is difficult to teach math concepts too early before young people have moved through the appropriate stages of cognitive development. Children can only construct the theory of a unit, for example, when they have attained concrete operations. It is necessary to move beyond concrete thinking to more abstract thinking in order to comprehend geometrical concepts (Armstrong, 2006). Teachers who develop relationships with students and identify cognitive development are better able to meet the needs of all learners.

Engagement

Motivation and engagement are two of the areas reported in the school context of the Developmental Assets Profile. When students have positive relationships at school, they are more likely to be motivated and engaged in school. "When students experience a sense of belonging at school and supportive relationships with teachers and classmates,

they are motivated to participate actively and appropriately in the life of the classroom"
(Hughes & Oi-man, 2007, p. 39). Relationships have a direct impact on student
engagement. The stronger and more positive the teacher-student relationship is, the
stronger the student engagement will be. Teachers who work to create a balance between
authority figure and student advocate are likely to motivate students (Daniels &
Arapostathis, 2005; Richards, 2006).

Lan and Lanthier's (2003) research on high school drop-out factors supports the
research that engagement in school impacts achievement. Their findings indicate that
drop-out is a complex phenomenon involving environmental factors (school, family, and
community) as well as personal attributes. The family and social contexts reported by the
Developmental Assets Profile are one way to measure these environmental factors. The
school context of the DAP is a way to measure both the school and personal attributes
related to school. Lan and Lanthier (2003) found that low motivation and a lack of
feelings of competence and self-determination led to decreased achievement and a risk
for dropping out of school. Students with a low risk for dropping out reported feeling
more satisfied with school than those at a higher risk for dropping out. Longitudinal
studies indicate that student engagement deteriorates as the risk of dropping out
increases. There is also a general decline in the personal attributes associated with
engagement as drop-out risk increases.

A related area of study when discussing the engagement of students at-risk for
dropping out of school is resilience theory. Research indicates that almost 70% of all
young people with significant risk factors grow up to be thriving adults. Connectedness,
opportunities for participation and contribution, and high self-expectations are all

protective factors that contribute to resilience (Brown, 2004). High scores on the Developmental Assets Profile in the school context would be a strong indication of these protective factors.

Students need to feel connected to adults in school in order to feel engaged. Inadequate relationships with teachers may lead to dislike and fear of school, and over time this may lead to disengagement (Jennings & Greenburg, 2009). In order to improve engagement, schools need to emphasize transforming environments, not just "fixing" kids. Positive youth development is as much about transforming adults and systems as it is about changing young people (Benson et al., 2006).

The shift from elementary school to middle school includes a shift from a focus on participation to a focus on achievement. This shift can create unmotivated learners if intrinsic supports are not in place. Interest in content, activities, and course requirements, along with scaffolding to create a sense of ability, increase student motivation. When this interest is paired with supportive adults, student engagement increases (Daniels & Arapostathis, 2005).

Thriving youth who are engaged in school is the goal of most educators. In his most current work, Peter Benson (2008), asset author and researcher, discusses what it takes to help youth thrive. Sparks are the hidden flames that ignite a passion in young people. Sparks get kids engaged, but it takes adults and relationships with adults to nurture the sparks.

Marzano (2007) identifies three types of engagement: behavioral, emotional, and cognitive. The assets framework focuses primarily on the behavioral and emotional types of engagement, but the cognitive domain is also identified in the school context of the

Developmental Assets Profile. "Does homework" is one area in the school context. "Enjoys learning" is another one of the items identified in the school context of the Developmental Assets profile. Students who are having fun learn more and are more engaged. A skilled teacher creates a joyful classroom that encourages high achievement (Sullo, 2007). Adolescents need to be active in their learning (Armstrong, 2006).

Conclusions

There are critics of middle school education. There are those who say that middle level philosophy stresses relationships at the expense of academic rigor (Bandlow, 2001), but research has consistently shown that the teacher-student relationship matters. It matters in achievement. It matters in motivation. It matters in engagement. "Connected, happier students are likely to do higher-quality academic work as well" (Sullo, 2007, p. 16). The connection was worthy of further study to determine if relationships did, in fact, have a direct influence on GPA and other academic indicators. The students identified as low in the school context on the Developmental Assets Profile have indicated a lack of engagement in the behavioral, emotional, and cognitive aspects of school. This study was an attempt to determine if this lack of school engagement correlates to a lack of math and reading achievement.

Chapter 3

Methodology

The purpose of this exploratory efficacy survey study was to determine reading Essential Learner Outcome assessment results, math Essential Learner Outcome assessment results, reading grade point average, and math grade point average of eighth grade students who rated themselves as not engaged in school or engaged in school on the Developmental Assets Profile.

Design

Research Design, Independent Variable, Dependent Variable

The pretest-posttest two-group exploratory efficacy survey study design is displayed in the following notation:

Group 1 X_1-X_2 O_1 Y_1 O_2

Group 2 X_1-X_2 O_1 Y_2 O_2

Group 1 = Study participants #1: Naturally formed group of students who rated themselves as not engaged in school ($n = 15$).

Group 2 = Study participants #2: Randomly assigned group of students who rated themselves engaged in school to match the number of students in the naturally formed group who rated themselves as being not engaged in school ($n = 15$).

X_1 = Study constant: All study participants completed sixth grade through eighth grade at the research school from 2006-2009.

X_2 = Study constant: All study participants rated themselves as engaged in the social context and the family context on the Developmental Assets Profile.

Y_1 = Student independent variable #1: Students rated themselves as not engaged in school on the Developmental Assets Profile.

Y_2 = Study independent variable #2: Students rated themselves as engaged in school on the Developmental Assets Profile.

O_1 = Student dependent measures #1: Pretest seventh grade Reading Essential Learner Outcome (ELO) assessment in word meaning, basic comprehension, analyze text, and reading strategies; Math Essential Learner Outcome (ELO) assessment geometry and algebra; G.P.A. in reading and math. Raw scores will be converted to scale scores.

O_2 = Student dependent measures #2: Posttest eighth grade Reading Essential Learner Outcome (ELO) assessment in word meaning, basic comprehension, analyze text, and reading strategies; Math Essential Learner Outcome (ELO) assessment geometry and algebra; G.P.A. in reading and math. Raw scores will be converted to scale scores.

Research Questions

The following research questions were used to analyze students who rated themselves as not engaged in school or students who rated themselves as engaged in school on the Developmental Assets Profile.

Research question #1: Does the students' level of school engagement affect their score on the reading ELO word meaning strand score from seventh to eighth grade?

Research question #2: Does the students' level of school engagement affect their score on the reading ELO basic comprehension strand score from seventh to eighth grade?

Research question #3: Does the students' level of school engagement affect their score on the reading ELO analyze text strand score from seventh to eighth grade?

Research question #4: Does the students' level of school engagement affect their score on the reading ELO reading strategies strand score from seventh to eighth grade?

Research question #5: Does the students' level of school engagement affect their score on the math ELO geometry strand score from seventh to eighth grade?

Research question #6: Does the students' level of school engagement affect their score on the math ELO algebra strand score from seventh to eighth grade?

Research question #7: Does the students' level of school engagement affect their reading GPA from seventh to eighth grade?

Research question #8: Does the students' level of school engagement affect their math GPA from seventh to eighth grade?

Subjects

The number of subjects in this study was N=30. All students rated themselves as engaged, defined by a score above the school mean, in both the family and social context on the Developmental Assets Profile. The naturally formed group of students (n=15) who rated themselves as not engaged in school on the Developmental Assets Profile all scored below the school mean on the school context. The randomly formed group (n=15) who rated themselves as engaged in school on the Developmental Assets Profile all scored above the school mean on the school context. The demographics of the groups are consistent with the demographics of the research school. The naturally formed group, not engaged in school, was comprised of 10 males and five females who are primarily white (n=12) with one African-American, one Hispanic, and one American Indian. The

randomly formed group, engaged in school, was comprised of seven males and eight females who are primarily white (*n*=12) with two Hispanics and one Asian/Pacific Islander.

Data Collection

Retrospective data was collected by the researcher, the Assistant Principal in the research school. The Developmental Assets Profile was administered to students at the beginning of their seventh grade year. Essential Learner Outcome assessments in math and reading were administered at the end of both seventh and eighth grade. Only the math and reading assessment strands that are the same in seventh and eighth grade were collected and analyzed. The results of the DAP, Essential Learner Outcome (ELO) assessments, and GPA were collected and coded to ensure data was not identifiable by individual.

Instruments

The Developmental Assets Profile (DAP), released in 2004 and based on the 40 Developmental Assets framework, was used to assign students to groups for the purpose of this research. Search Institute (2005) designed the instrument and has established qualification guidelines for administration of the DAP to ensure its appropriate and reliable use by professionals. The instrument has 58 items, 26 related to internal assets, 32 related to external assets. The items also sort into five contexts: personal, social, family, school, and community. The Search Institute (2005) describes the reliability and validity of the instrument in its User Manual. Educational psychologists have pointed to the need for asset-based assessment tools to identify contextual factors that may support positive youth development (Lubbe & Eloff, 2004). "The DAP is well suited, for

example, to studying effects of youth programs, curricula, and interventions that are designed to enhance youth development and reduce negative outcomes" (Search, 2005, p. 3). Search Institute has worked to improve upon the psychometrics of the instrument (Zullig, Ward, King, Patton, & Murray, 2009).

The academic measures used to reach study conclusions are district Essential Learner Outcome (ELO) assessments and GPA. The research school district Essential Learner Outcome (ELO) assessments were designed by highly qualified teachers in conjunction with testing experts from the Buros Mental Measurement Institute at the University of Nebraska-Lincoln and Alpine Testing Solutions. All Essential Learner Outcome assessments undergo a rigorous pre-pilot and pilot test to ensure item quality. The cut scores are set by the testing experts after a standard setting workshop involving highly qualified teachers (Millard Public Schools, 2008).

Data Analysis

Data was analyzed using two-way analyses of variance (ANOVA). Independent variables included the within-subjects factor for time (pretest seventh grade to posttest eighth grade). Independent variables for the between-subjects factor was level of school engagement reported on the DAP seventh grade. ANOVA was selected as it is efficient and will keep the error rate under control (Gay, Mills, & Airasian, 2006). Because of the sample size, the significance level was .05. No follow up tests were required for 2 x 2 ANOVAs.

Chapter 4

Results

The purpose of this exploratory efficacy survey study was to determine reading Essential Learner Outcome assessment results, math Essential Learner Outcome assessment results, reading grade point average, and math grade point average of eighth grade students who rated themselves as not engaged in school or engaged in school on the Developmental Assets Profile.

Research Question 1-Word Meaning Strand

Did the students' level of school engagement affect their score on the reading ELO word meaning strand score from seventh to eighth grade?

There was no statistically significant main effect for time (pretest seventh grade/posttest eighth grade), $F(1, 28) = 3.936, p = .057$. There was no significant interaction between time (pretest seventh grade/posttest eighth grade) and group (not engaged/engaged), $F(1, 28) = .127, p = .724$. There was no significant main effect for group (not engaged/engaged), $F(1, 28) = 3.778, p = .062$.

The means and standard deviations of the reading ELO word meaning strand score are displayed in Table 1. The ANOVA for the reading ELO word meaning strand score is displayed in Table 2.

Research Question 2-Basic Comprehension Strand

Did the students' level of school engagement affect their score on the reading ELO basic comprehension strand score from seventh to eighth grade?

There was a statistically significant main effect for time (pretest seventh grade/posttest eighth grade), $F(1, 28) = -4.667, p = .039, d = .36$. There was no

significant interaction between time (pretest seventh grade/posttest eighth grade) and

group (not engaged/engaged), $F(1, 28) = .017$, $p = .899$. There was no significant main

effect for group (not engaged/engaged), $F(1, 28) = 3.975$, $p = .056$.

The statistically significant main effect for time indicated that students' scores

decreased significantly from the pretest seventh grade ($M = 91.11$, $SD = 14.26$) to posttest

eighth grade ($M = 85.24$, $SD = 18.18$), regardless of the group (not engaged/engaged).

The means and standard deviations of the reading ELO basic comprehension strand score

are displayed in Table 3. The ANOVA for the reading ELO basic comprehension strand

score is displayed in Table 4.

Research Question 3-Analayze Text Strand

Did the students' level of school engagement affect their score on the reading

ELO analyze text strand score from seventh to eighth grade?

There was a statistically significant main effect for time (pretest seventh

grade/posttest eighth grade), $F(1, 28) = -5.218$, $p = .030$, $d = .37$. There was no

significant interaction between time (pretest seventh grade/posttest eighth grade) and

group (not engaged/engaged), $F(1, 28) = 1.528$, $p = .227$.

The statistically significant main effect for time indicated that students' scores

decreased significantly from the pretest seventh grade ($M = 81.21$, $SD = 17.85$) to posttest

eighth grade ($M = 74.17$, $SD = 19.98$).

There was a statistically significant main effect for group (not engaged/engaged),

$F(1, 28) = -4.430$, $p = .044$. To follow up the significant main effect for group, the

Pairwise Comparisons test indicated that, while there was no significant difference

between not engaged pretest scores ($M = 76.97$, $SD = 22.50$) and engaged pretest scores

(M = 85.46, SD = 10.76), $F(1, 28)$ 1.737, p = .198. The groups, the not engaged posttest

scores (M = 66.11, SD = 22.60) were significantly lower that the engaged posttest scores

(M = 82.22, SD = 13.31), $F(1, 28)$ = -5.661, p = .024, d = .90.

The means and standard deviations of the reading ELO analyze text strand score

are displayed in Table 5. The ANOVA for the reading ELO analyze text strand score is

displayed in Table 6.

Research Question 4-Reading Strategies

Did the students' level of school engagement affect their score on the reading

ELO reading strategies strand score from seventh to eighth grade?

There was no statistically significant main effect for time (pretest seventh

grade/posttest eighth grade), $F(1, 28)$ = 3.479, p = .073. There was no significant

interaction between time (pretest seventh grade/posttest eighth grade) and group (not

engaged/engaged), $F(1, 28)$ = .056, p = .815. There was no significant main effect for

group (not engaged/engaged), $F(1, 28)$ = 3.513, p = .071.

The means and standard deviations of the reading ELO reading strategies strand

score are displayed in Table 7. The ANOVA for the reading ELO reading strategies

strand score is displayed in Table 8.

Table 1

Descriptive Statistics for Reading ELO Word Meaning Strand Score

	Pretest Seventh Grade		Posttest Eighth Grade	
	M	*SD*	*M*	*SD*
Group 1 Not Engaged (*n*=15)	75.38	28.22	84.29	16.02
Group 2 Engaged (*n*=15)	86.67	10.27	92.86	7.64
Total	81.03	21.64	88.57	13.08

Table 2

ANOVA for Reading ELO Word Meaning Strand Score

Source of Variation	df	MS	F	p	d
Between Subjects					
Group	1	1478.102	3.778	.062	ns
Error	28	391.260			
Within Subjects					
Word Meaning	1	854.084	3.936	.057	ns
Word Meaning*Group	1	27.553	.127	.724	ns
Error	28	217.006			

ns = not significant

Table 3

Descriptive Statistics for Reading ELO Basic Comprehension Strand Score

| | Pretest Seventh Grade | | Posttest Eighth Grade | |
	M	*SD*	*M*	*SD*
Group 1 Not Engaged (*n*=15)	86.22	16.80	80.00	22.78
Group 2 Engaged (*n*=15)	96.00	9.36	90.48	10.34
Total	91.11	14.26	85.24	18.18

Table 4

ANOVA for Reading ELO Basic Comprehension Strand Score

Source of Variation	*df*	*MS*	*F*	*p*	*d*
Between Subjects					
Group	1	1538.337	3.975	.056	ns
Error	28	387.045			
Within Subjects					
Basic Comprehension	1	517.385	4.667	.039	.36
Basic Comprehension*Group	1	1.829	.017	.899	ns
Error	28	110.854			

ns = not significant

Table 5

Descriptive Statistics for Reading ELO Analyze Text Strand Score

	Pretest Seventh Grade		Posttest Eighth Grade	
	M	SD	M	SD
Group 1 Not Engaged (*n*=15)	76.97	22.50	66.11	22.60
Group 2 Engaged (*n*=15)	85.46	10.76	82.22	13.31
Total	81.21	17.85	74.17	19.98

Table 6

ANOVA for Reading ELO Analyze Text Strand Score

Source of Variation	*df*	*MS*	*F*	*p*	*d*
Between Subjects					
Group	1	2268.605	4.430	.044	
Error	28	512.112			
Within Subjects					
Analyze Text	1	744.576	5.218	.030	.37
Analyze Text*Group	1	218.100	1.528	.227	ns
Error	28	142.704			
Pairwise Comparisons					
Group*Pretest (seventh)			1.737	.198	ns
Group*Posttest (eighth)			5.661	.024	.90

ns = not significant

Table 7

Descriptive Statistics for Reading ELO Reading Strategies Strand Score

	Pretest Seventh Grade		Posttest Eighth Grade	
	M	*SD*	*M*	*SD*
Group 1 Not Engaged (*n*=15)	79.40	20.17	73.70	19.86
Group 2 Engaged (*n*=15)	88.49	10.00	84.07	11.28
Total	83.94	16.31	78.89	16.72

Table 8

ANOVA for Reading ELO Reading Strategies Strand Score

Source of Variation	df	MS	F	p	d
Between Subjects					
Group	1	1420.280	3.513	.071	ns
Error	28	404.346			
Within Subjects					
Reading Strategies	1	382.614	3.479	.073	ns
Reading Strategies*Group	1	6.139	.056	.815	ns
Error	28	109.974			

ns = not significant

Research Question #5- Geometry Strand

Does the students' level of school engagement affect their score on the math ELO geometry strand score from seventh to eighth grade?

There was not a statistically significant main effect for time (pretest seventh grade/posttest eighth grade), $F(1, 28) = .625, p = .436$. There was no significant interaction between time (pretest seventh grade/posttest eighth grade) and group (not engaged/engaged), $F(1, 28) = .040, p = .842$. There was a significant main effect for group (not engaged/engaged), $F(1, 28) = 5.958, p = .021$.

To follow up the significant main effect for group, the Pairwise Comparisons test indicated that not engaged pretest scores ($M = 60.78, SD = 22.42$) were significantly lower than engaged pretest scores ($M = 74.90, SD = 9.81$), $F(1,28) = -4.993, p = .034, d = .88$. Not engaged posttest scores ($M = 63.75, SD = 19.51$) were also significantly lower than engaged posttest scores ($M = 76.67, SD = 14.46$), $F(1, 28) = -4.244, p = .049, d = .76$.

The means and standard deviations of the math ELO geometry strand score are displayed in Table 9. The ANOVA for the math ELO geometry strand score is displayed in Table 10.

Research Question #6- Algebra Strand

Does the students' level of school engagement affect their score on the math ELO algebra strand score from seventh to eighth grade?

There was not a statistically significant main effect for time (pretest seventh grade/posttest eighth grade), $F(1, 28) = .984, p = .330$. There was no significant interaction between time (pretest seventh grade/posttest eighth grade) and group (not

engaged/engaged), $F(1, 28) = 1.420, p = .243$. There was a significant main effect for group (not engaged/engaged), $F(1, 28) = 4.256, p = .048$.

To follow up the significant main effect for group, the Pairwise Comparisons test indicated that there was no significant difference between not engaged pretest scores ($M = 74.67, SD = 21.00$) and engaged pretest scores ($M = 80.67, SD = 13.87$), $F(1, 28) = .853, p = .364$. However, not engaged posttest scores ($M = 67.78, SD = 15.89$) were significantly lower than engaged posttest scores ($M = 81.30, SD = 9.18$), $F(1, 28) = -8.147, p = .008, d = 1.08$.

The means and standard deviations of the math ELO algebra strand score are displayed in Table 11. The ANOVA for the math ELO algebra strand score is displayed in Table 12.

Table 9

Descriptive Statistics for Math ELO Geometry Strand Score

	Pretest Seventh Grade		Posttest Eighth Grade	
	M	*SD*	*M*	*SD*
Group 1 Not Engaged (*n*=15)	60.78	22.42	63.75	19.51
Group 2 Engaged (*n*=15)	74.90	9.81	76.67	14.46
Total	67.84	18.46	70.21	18.11

Table 10

ANOVA for Math ELO Geometry Strand Score

Source of Variation	*df*	*MS*	*F*	*p*	*d*
Between Subjects					
Group	1	2740.703	5.958	.021	
Error	28	460.012			
Within Subjects					
Geometry	1	83.912	.625	.436	ns
Geometry*Group	1	5.409	.040	.842	ns
Error	28	134.207			
Pairwise Comparisons					
Group*Pretest (seventh)			4.993	.034	.88
Group*Posttest (eighth)			4.244	.049	.76

ns = not significant

Table 11

Descriptive Statistics for Math ELO Algebra Strand Score

	Pretest Seventh Grade		Posttest Eighth Grade	
	M	SD	M	SD
Group 1 Not Engaged (*n*=15)	74.67	21.00	67.78	15.89
Group 2 Engaged (*n*=15)	80.67	13.87	81.30	9.18
Total	77.67	17.75	74.54	14.48

Table 12

ANOVA for Math ELO Algebra Strand Score

Source of Variation	*df*	*MS*	*F*	*p*	*d*
Between Subjects					
Group	1	1428.647	4.256	.048	
Error	28	335.644			
Within Subjects					
Algebra	1	146.919	.984	.330	ns
Algebra*Group	1	211.980	1.420	.243	ns
Error	28	149.269			
Pairwise Comparisons					
Group*Pretest (seventh)			.853	.364	ns
Group*Posttest (eighth)			8.147	.008	1.08

ns = not significant

Research Question #7- Reading GPA

Does the students' level of school engagement affect their reading GPA from seventh to eighth grade?

There was not a statistically significant main effect for time (seventh grade GPA/eighth grade GPA), $F(1, 28) = .164$, $p = .688$. There was no significant interaction between time (seventh grade GPA/eighth grade GPA) and group (not engaged/engaged), $F(1, 28) = .020$, $p = .888$. There was a significant main effect for group (not engaged/engaged), $F(1, 28) = 11.874$, $p = .002$.

To follow up the significant main effect for group, the Pairwise Comparisons test indicated that not engaged seventh grade GPA ($M = 2.56$, $SD = .87$) was significantly lower than engaged seventh grade GPA ($M = 3.33$, $SD = .67$), $F(1,28) = -7.457$, $p = .011$, $d = 1$. Not engaged eighth grade GPA ($M = 2.60$, $SD = .94$) was also significantly lower than engaged eighth grade GPA ($M = 4.42$, $SD = .62$), $F(1, 28) = -8.020$, $p = .008$, $d = 2.33$.

The means and standard deviations of the reading GPA are displayed in Table 13. The ANOVA for the reading GPA is displayed in Table 14.

Research Question #8- Math GPA

Does the students' level of school engagement affect their math GPA from seventh to eighth grade?

There was not a statistically significant main effect for time (seventh grade GPA/eighth grade GPA), $F(1, 28) = .270$, $p = .607$. There was no significant interaction between time (seventh grade GPA/eighth grade GPA) and group (not engaged/engaged),

$F(1, 28) = .029$, $p = .866$. There was a significant main effect for group (not engaged/engaged), $F(1, 28) = 9.975$, $p = .004$.

To follow up the significant main effect for group, the Pairwise Comparisons test indicated that not engaged seventh grade GPA ($M = 2.60$, $SD = .89$) was significantly lower than engaged 7 th grade GPA ($M = 3.27$, $SD = .59$), $F(1,28) = -5.791$, $p = .023$, $d = .91$. Not engaged 8 th grade GPA ($M = 2.65$, $SD = .78$) was also significantly lower than engaged 8 th grade GPA ($M = 3.37$, $SD = .41$), $F(1, 28) = -9.737$, $p = .004$, $d = 1.2$.

The means and standard deviations of the reading GPA are displayed in Table 15. The ANOVA for the reading GPA is displayed in Table 16.

Summary

In summary, on the reading ELO assessment for both the word meaning and reading strategies strands, there were no significant differences. Scores increased on the word meaning strand for both the not engaged and engaged groups, but neither group increased significantly. Scores decreased on the reading strategies strand for both the not engaged and engaged groups, but neither group decreased significantly.

On the reading ELO assessment for both the basic comprehension strand and the analyze text strand, there were significant differences between the seventh grade scores and the eighth grade scores. Both groups' scores went down significantly in eighth grade. Also, on the analyze text strand, the students who were not engaged in school had significantly lower post test scores in eighth grade than the students who were engaged.

On the math ELO assessment, there were not significant differences between the seventh grade scores and the eighth grade scores for either group. On the geometry strand the students who were not engaged in school had significantly lower scores on

both the seventh grade and eighth grade tests than the students who were engaged. Both groups increased the scores on the geometry strand, but the not engaged students had significantly lower scores at both grades. On the algebra strand, there was not a significant difference in the groups' seventh grade scores, but the not engaged students' scores decreased in eighth grade while the engaged students' scores increased. Therefore, in eighth grade, the not engaged students had significantly lower scores that the engaged students.

Finally the statistical results for grade point average were similar to those of the math results. While both the not engaged group and the engaged group increased their grade point average from seventh to eighth grade, neither group increased significantly. In both seventh grade and eighth grade, the not engaged students had significantly lower GPA than the engaged students in reading and math.

Table 13

Descriptive Statistics for Reading GPA

	Seventh Grade GPA		Eighth Grade GPA	
	M	SD	M	SD
Group 1 Not Engaged (*n*=15)	2.56	.87	2.60	.94
Group 2 Engaged (*n*=15)	3.33	.67	4.42	.62
Total	2.94	.86	3.01	.89

Table 14

ANOVA for Reading GPA

Source of Variation	*df*	*MS*	*F*	*p*	*d*
Between Subjects					
Group	1	9.568	11.874	.002	
Error	28	.806			
Within Subjects					
Reading GPA	1	.071	.164	.688	ns
Reading GPA*Group	1	.009	.020	.888	ns
Error	28	.431			
Pairwise Comparisons					
Group*Seventh Grade GPA			7.457	.011	1
Group*Eighth Grade GPA			8.020	.008	2.33

ns = not significant

Table 15

Descriptive Statistics for Math GPA

	Seventh Grade GPA		Eighth Grade GPA	
	M	SD	M	SD
Group 1 Not Engaged (*n*=15)	2.60	.89	2.65	.78
Group 2 Engaged (*n*=15)	3.27	.59	3.37	.41
Total	2.93	.82	3.00	.71

Table 16

ANOVA for Math GPA

Source of Variation	*df*	*MS*	*F*	*p*	*d*
Between Subjects					
Group	1	7.114	9.975	.004	
Error	28	.713			
Within Subjects					
Math GPA	1	.068	.270	.607	ns
Math GPA*Group	1	.007	.029	.866	ns
Error	28	.251			
Pairwise Comparisons					
Group*Seventh Grade GPA			5.791	.023	.91
Group*Eighth Grade GPA			9.737	.004	1.2

ns = not significant

Chapter 5

Conclusions and Discussion

Educators have always been concerned with helping students stay safe, feel supported, and achieve academic success. Providing the necessary skills and motivation, however, is not always easy. Assessing student engagement can be a powerful tool in predicting potential success and identifying students who may need additional support. While some young people come to school with a wealth of academic background and positive feelings about school, others have little prior knowledge and negative feelings about school. External characteristics such as caring and encouraging teachers and internal characteristics such as doing homework and reporting school motivation can be assessed using the Developmental Asset Profile. Students who report more of these assets, or strengths, can be identified as engaged in school. Students who are engaged in school are more likely to experience success (Benson, et al., 1994).

Current psychological models are beginning to focus on student strengths rather than weaknesses. Identifying the perceptions students have about school in terms of their own engagement and the support provided by others can provide valuable insight into academic achievement. Motivated students achieve at higher levels (Klem & Connell, 2004). It is as important to evaluate student strengths as it is to evaluate student weaknesses when identifying potential for success (Jimerson, et al., 2004).

The purpose of this study was to analyze academic achievement in reading and math as well as grade point average in students who rated themselves as either not engaged in school or engaged in school. Reading assessments, math assessments, and grades were analyzed. Participants were assessed at the beginning of their seventh grade

year using a tool called the Developmental Assets Profile. The instrument evaluates young people's reported experiences with the 40 Developmental Assets. The DAP has 58 items, 26 related to internal assets, 32 related to external assets, and results are sorted into five contexts: personal, social, family, school, and community (Search, 2005). For this study, the school context was used as the independent variable.

The school context area focuses on all of the assets related to the school environment, teacher-student relationships, and attitudes toward school. This context involves both external assets related to the school such as a safe and caring environment and clear school rules, as well as internal assets related to the young person's own commitment to learning (Search Institute, 2005). For this study, students who scored below the school mean in the school context were identified as not engaged at school. Their academic achievement and grades were compared to a group of students who rated themselves as engaged in school in reading, math, and grade point average. Study conclusions are presented for each of the three areas.

These areas support discussion about school performance, academic achievement, and the whole child. For the purpose of this study, grades were assumed to be an indicator of school performance, a student's ability to "do school". Assessment scores were assumed to be an indicator of academic achievement. Finally, while there are high levels of accountability for school performance and academic achievement, most middle school educators are more concerned with the whole child. Study findings have implications for each of these areas.

<div align="center">**Conclusions**</div>

Reading

All study participants took the reading Essential Learner Outcome (ELO) assessment in both seventh and eighth grade. There were four common strands on both reading assessments: word meaning, basic comprehension, analyze text, and reading strategies.

There were no significant differences between the two years for either the word meaning strand or the reading strategies strand. Scores increased on the word meaning strand for both the not engaged and engaged groups, but neither group increased significantly, $F(1.28) = 3.036$, $p = .057$. Scores decreased on the reading strategies strand for both the not engaged and engaged groups, but neither group decreased significantly, $F(1,28) = 3.479$, $p = .073$. As eighth graders, the study participants were enrolled in an English course, but there was not a reading course. A lack of specific instruction on reading strategies in the eighth grade may have contributed to the drop in scores.

On the reading ELO assessment for both the basic comprehension strand and the analyze text strand, there were significant differences between the seventh grade scores and the eighth grade scores. Both groups' scores went down significantly in eighth grade.

The basic comprehension strand showed a significant decrease, $F(1, 28) = -4.667$, $p = .039$, $d = .36$ for both groups. There was no significant difference between the not engaged students and the engaged students. Again, a lack of direct reading instruction in eighth grade may account for the decrease. One implication of this research study for the research school district may be to evaluate the lack of a reading course in eighth grade.

On the analyze text strand of the reading ELO assessment, student scores decreased significantly, $F(1, 28) = -5.218$, $p = .030$, $d = .37$ from seventh to eighth grade.

Again, a decrease is disappointing in achievement results. This strand also indicated a difference between not engaged and engaged students. The students who were not engaged in school had significantly lower post test scores ($M = 66.11$, $SD = 22.60$) in eighth grade than the students who were engaged ($M = 82.22$, $SD = 13.31$), $F(1, 28) = -5.661$, $p = .024$, $d = .90$. On this strand, the not engaged students started with lower scores in seventh grade, and while both groups' scores decreased, the not engaged students lost more ground and ended up statistically lower than the engaged students.

In three of the four reading strands (basic comprehension, analyze text, and reading strategies) the scores decreased from seventh to eighth grade. The results related to this study were found in the analyze text strand. Students who were engaged in school did not experience as significant a drop in scores as those who were not engaged in school.

Math

All study participants took the math Essential Learner Outcome (ELO) assessment in both seventh and eighth grade. There were two common strands on both math assessments: geometry and algebra.

There were not significant differences between the seventh grade scores and the eighth grade scores on either the geometry, $F(1, 28) = .625$, $p = .436$, or the algebra strand, $F(1, 28) = .984$, $p = .330$; however, on the geometry strand the students who were not engaged in school had seventh grade scores ($M = 60.78$, $SD = 22.42$) that were significantly lower than engaged seventh grade scores ($M = 74.90$, $SD = 9.81$), $F(1,28) = -4.993$, $p = .034$, $d = .88$. The not engaged students' eighth grade scores ($M = 63.75$, $SD = 19.51$) were also significantly lower than engaged eighth grade scores ($M = 76.67$, SD

= 14.46), $F(1, 28) = -4.244$, $p = .049$, $d = .76$. The scores moved in a positive direction for both groups on the geometry strand.

On the algebra strand, there was not a significant difference between seventh grade scores for students who were not engaged in school ($M = 74.67$, $SD = 21.00$) and those who were engaged ($M = 80.67$, $SD = 13.87$)), $F(1, 28) = .853$, $p = .364$, but the not engaged students' scores decreased in eighth grade ($M = 67.78$, $SD = 15.89$) while the engaged students' scores increased ($M = 81.30$, $SD = 9.18$). Therefore, in eighth grade, the not engaged students had significantly lower scores than the engaged students, $F(1, 28) = -8.147$, $p = .008$, $d = 1.08$. Consistent with other findings in this study, the not engaged students were not as successful on measures of academic achievement.

Grade Point Average

The statistical results for grade point average were similar to those of the reading and math results. While both the not engaged group and the engaged group increased their grade point average from seventh to eighth grade, neither group increased significantly.

Again though in both seventh grade and eighth grade, the not engaged students had significantly lower GPA than the engaged students in reading and math. In reading, the not engaged seventh grade GPA ($M = 2.56$, $SD = .87$) was significantly lower than engaged seventh grade GPA ($M = 3.33$, $SD = .67$), $F(1,28) = -7.457$, $p = .011$, $d = 1$. Not engaged eighth grade GPA ($M = 2.60$, $SD = .94$) was also significantly lower than engaged eighth grade GPA ($M = 4.42$, $SD = .62$), $F(1, 28) = -8.020$, $p = .008$, $d = 2.33$. The same was true in math with the not engaged seventh grade GPA ($M = 2.60$, $SD = .89$) significantly lower than engaged seventh grade GPA ($M = 3.27$, $SD = .59$), $F(1,28) = -$

5.791, $p = .023$, $d = .91$. Not engaged eighth grade GPA ($M = 2.65$, $SD = .78$) was also significantly lower than engaged eighth grade GPA ($M = 3.37$, $SD = .41$), $F(1, 28) = -9.737$, $p = .004$, $d = 1.2$.

Study results were consistent and clear. Students who are not engaged in school do not achieve at levels as high as those students who are engaged.

Discussion

School Performance

To impact success in school, educators may want to more carefully consider a young person's beliefs about school. If students are not engaged at school, they may not achieve at appropriate levels. Changing a context, such as school, can enhance developmental success. More emphasis needs to be placed on transforming the context (school in this case) rather than just "fixing" the young person because both the person and the context matter (Benson, et al., 2006). In this study, students who were more engaged in the school context had better grades. They were more able to complete homework assignments and score well on tests. Daniels & Arapostathis (2005) found that reluctant learners are frequently able to complete reading and math activities but choose not to for a variety of motivational reasons. Grades are not necessarily a reflection of ability, but they may be a reflection of motivation to participate in the school process.

In Wentzel's (1998) research, she found that a positive perception of teacher support was instrumental in how students function in the classroom. Students perform the necessary tasks associated with high achievement (work completion, goal setting, appropriate behavior, etc.) in classrooms with caring adults. Students have to be engaged

in order to complete necessary school tasks. Marzano (2007) identifies three types of engagement: behavioral, emotional, and cognitive. The assets framework focuses primarily on the behavioral and emotional types of engagement, but the cognitive domain is also identified in the school context of the Developmental Assets Profile. "Does homework" is one area in the school context. "Enjoys learning" is another one of the items identified in the school context of the Developmental Assets profile. Students who are having fun learn more and are more engaged. A skilled teacher creates a joyful classroom that encourages high achievement (Sullo, 2007).

Teachers who work to create a balance between authority figure and student advocate are likely to motivate students (Daniels & Arapostathis, 2005; Richards, 2006). Motivated students will have higher school success as measured by grades. In this study, the engaged students had significantly higher grade point averages in both seventh and eighth grade.

Academic Achievement

School success may or may not always relate to academic ability, but academic achievement is related to school engagement (Benson et al., 1994). In this study, the students who were more engaged in school had higher achievement in reading and math. Overall reading results were disappointing. In three of the four strands (basic comprehension, analyze text, and reading strategies) the scores decreased from seventh to eighth grade. The results related to this study were found in the analyze text strand. Students who were engaged in school did not experience as significant a drop in scores as those who were not engaged in school. Engagement appeared to have been a protective factor.

It was encouraging on the math results that, while not significant, the scores went up for both groups on the geometry strand. The results were also supportive of what was found in the reading results for analyze text. The not engaged students had statistically lower scores in both seventh and eighth grade. The results of the algebra strand were consistent. The not engaged students had significantly lower scores that engaged students

The middle school concept is one of the most important factors in improving achievement for young people (Erb, 2006). Middle school students can be at risk for academic problems if they do not experience school engagement and positive relationships with the adults and peers in their lives. Research indicates that student perception of teacher support is a predictor for academic achievement (Davis, 2003). The Developmental Assets Profile assesses a student's internal motivation about school (cares about school, does homework, enjoys learning, motivated, engaged) and the external forces that impact engagement at school (clear school rules, encouraging teachers, and a caring school). This engagement had a direct relationship to academic achievement in this study. Impacting engagement will impact achievement.

The Whole Child

Educators can capitalize on a young person's strengths in order to promote academic achievement and foster positive, safe, lifelong skills (Jimerson et al., 2004). The goal of most educators is not only the academic achievement measured by such things as federal No Child Left Behind (2002) legislation, but also to create healthy, successful human beings.

Resilience theory promotes the belief that most young people, even those in high stress situations, will become thriving adults. Connectedness to school is a protective factor that can promote resilience in young people (Brown, 2004). Students need to know that an adult cares about them in order to be engaged in school. In multiple research studies, students who reported high levels of teacher support were more likely to have high levels of engagement (Brok et al., 2005; Klem & Connell, 2004; Protherone, 2005; Walsh, 2006).

School staff can work to influence student engagement. Students identify specific behaviors that caring teachers demonstrate in the classroom. These behaviors have a direct influence on the teacher-student relationship. Providing fun activities, explaining work, showing respect, and checking for understanding can influence engagement. Providing before and after school help, talking about personal problems, and going the extra mile can foster positive teacher-student relationships. Being nice, polite, and involved can all develop healthy whole children (Bosworth, 1995).

Recommendations for Further Research

While educational psychologists are beginning to adopt an asset-based approach to the study of young people, the movement is relatively new. Few studies have evaluated asset-building programs (Jimerson, et al., 2004). This study supports the previous research that engaged students are more academically successful, but it does not evaluate a specific asset-building program. Program evaluation is worthy of further study. It would be worthy of study to identify students who are not engaged and enroll them in a specific asset-building program and evaluate their achievement growth.

This study was also conducted on a small sample of students in a Midwestern, suburban school district. It would be worth studying the achievement of students in urban and rural settings.

Summary

Most educators will tell you that they believe students need to care about school in order to do well in school. Most educators will tell you that the students who are engaged are more likely to do the work and pass quizzes and tests. And most educators will tell you that the students who have done the schoolwork and who care about doing well will achieve at higher levels on measures of academic achievement. Literature supports these beliefs. Research supports these beliefs. This study found statistical support for these beliefs.

Identifying student assets and strengths, measuring school engagement, and taking steps in increase or maintain engagement can impact academic achievement. The students in this study who had engagement above the school mean had higher achievement. In not a single case, did the students with engagement below the school mean achieve at higher rate. What makes this even more powerful is the fact that a control for the study was high engagement in the family and social contexts for both groups: not engaged in school and engaged in school. These were not students with family issues. They report high engagement in family. These were not students with social issues. They report high engagement in the social context. These students were generally successful in all other areas of their life. They just had low engagement to school. This one factor was enough to cause significantly lower scores and grade point

averages. School matters! Engagement to school matters! Engagement is worthy of evaluation, and raising engagement is worthy of study.

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Appendix A

School District Letter Authorizing Research

Letter is on file and available upon request.

Appendix B

Institutional Review Board for the Protection of Human Subjects Approval Letter

Letter is on file and available upon request.