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**THE MEDIATING INFLUENCE OF SCHOOL ENGAGEMENT BETWEEN AN
ADOLESCENT'S CONTEXTUAL ENVIRONMENT AND ACADEMIC
ACCOMPLISHMENT**

by

NAJIM UDDIN AHMED

DISSERTATION

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

in partial fulfillment of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

2013

MAJOR: EDUCATIONAL PSYCHOLOGY

Approved by:

Advisor

Date

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DEDICATION

Every endeavor has moments of success and failure that are only tolerable because of the people who sacrifice their own dreams and comfort for another person's dreams and comfort. For their dedication to my dream I humbly dedicate this dissertation to my wife

Lili Ahmed

for generously allowing me to complete this important project,

and

to my daughters Maryam, Sarah, and Fatima

who continuously inspire me when I feel like giving up.

And, most importantly, this token of accomplishment is dedicated to my mother

Mary Teresa Moskello,

and father,

Giash Uddin Ahmed.

I realize that I will never be able to come close to repaying them for what they gave me.

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I would like to thank the students at the high school where I conducted the study. I would also like to acknowledge the assistance of the administration and staff in facilitating the data collection.

I would like to thank my parents for taking care of me as a child.

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CHAPTER 1

INTRODUCTION

Problem Statement

With increasing focus on student performance in school, research has found that the engagement American youth exhibit in high school is not high (Steinberg, 2014). In contrast, it is very low. Many students have been found to be simply going through the motions when they are in school, doing what is necessary to get by. This leaves high school teachers with students who are physically present in the room, but psychologically absent (Steinberg, 1996, 2014).

Studies have shown that disengaged students find school unchallenging and boring. These students admit that they calibrate their efforts to earn a particular grade and could do better if they tried harder (Public Agenda, 1997). Furthermore, students who are not engaged in school are more likely to engage in various types of delinquent behavior, including substance use (Patton et al., 2006; Schmidt, 2003). Therefore, identifying factors that are related to promoting school engagement is important.

Research has consistently shown that parents, teachers, peers, and socioeconomic status are significantly related to an adolescent's academic performance in school (Steinberg, 2014). Interestingly, scarce literature is available that identifies which of the mentioned variables are most important in predicting student academic performance within a multiculturally diverse sample. Furthermore, the same applies to studies investigating causal pathways in relation to the above variables. The following gives an overview of what we do know in relation to influences on student performance in school.

Influences on Student Performance in School

Socioeconomic status. A powerful influence on school performance is the socioeconomic background of the adolescent. Research has indicated that adolescents from middle-class socioeconomic backgrounds outperform, and complete more years of schooling than their working-class and lower-socioeconomic status counterparts (Muller, Stage, & Kinzie, 2001; Schoon, Parsons, & Sacker, 2004). This status encompasses the broader environment of an adolescent. Individuals of low socioeconomic status have been found to have environments that interfere – in various ways – with the ability to focus on performing well in school. In general, higher socioeconomic levels are associated with a better, more adaptive environment to live and learn in. It was reported that 69.2% of the total student population at the high school this study was conducted at participated in the free/reduced price lunch program during the 2012-2013 school year (State of Michigan, 2013). This suggests that a high number of the student population at this school come from low-income families.

Parents. Interactions with teachers, parents, and peers are several of the factors that have been found to influence how well a student does academically. For example, research has suggested that parental behaviors are directly related to an adolescent's academic performance (Steinberg, 1996, 2014). These behaviors manifest in the form of encouraging higher standards and aspirations, reinforcing positive school experiences through structured support at home, and demonstrated personal interest and involvement in an adolescent's academic life (Ibanez, Kuperminc, Jurkovic, & Perilla, 2004; Xu, 2004; Luthar, Shoum, & Brown, 2006; Benner, Graham, & Mistry, 2008; Hill & Tyson, 2009).

Teachers. While parents play a role, studies have found that teachers significantly contribute towards a student's academic performance as well. The attitudes and expectations that

they communicate in class influence their students' perceptions of success. Students who believe that their teacher holds negative opinions of them are more susceptible to learned helplessness (Jussim, Eccles, & Madon, 1996; Durik, Vida, & Eccles, 2006; Blackwell, Trzesniewski, & Dweck, 2007; Maatt, Nurmi, & Stattin, 2007). In contrast, research has found those students who perceive their teacher as caring report learning more and holding interest in what was being taught (Teven & McCroskey, 1997). Furthermore, a recent study has indicated that the messages received from teachers and parents have influence on a student's academic self-efficacy (Usher, 2009).

Peers. Peers are another factor related to academic success. Studies have suggested that they influence an adolescent's day-to-day behaviors such as doing homework and exerting effort in class (Steinberg, 1996, 2014). As a result, students whose peers are more engaged in school are themselves more engaged (Ream & Rumberger, 2008). This shows that interactions – with peers, teachers, and parents – matter to an adolescent and contribute toward his or her doing well in school.

Theoretical Model

Mediation. Baron and Kenny (1986) proposed a model to explain human cognition, affect, and behavior. This model includes initial and outcome variables. An initial variable is analogous to the independent/predictor variable. Outcome variables are similar to the dependent/criterion variable.

The unique aspect of this model is the inclusion of a mediator variable. A mediator variable is stated to be in a causal sequence between the initial and outcome variables (MacKinnon, Fairchild, & Fritz, 2007). Four conditions must be met for a variable to function as a mediator. First, there must be a statistically significant correlation between the predictor and

criterion variables. This condition indicates that a relationship may be mediated. Second, the predictor variable must significantly account for variations in the mediator variable. Third, the mediator variable must significantly account for variations in the criterion variable. Fourth, the relationship between the predictor and criterion variable is substantially reduced when the potential mediator is held constant on the fourth step of the mediation analysis. Therefore, causal inferences may be made from this model with the mediator being the cause of the outcome (Baron & Kenny, 1986). The following diagram illustrates this process in the context of this study.

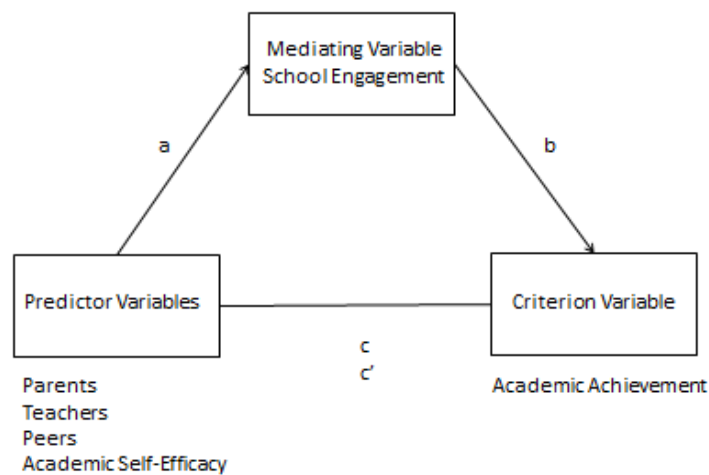


Figure 1. Mediation model in the context of present study.

Research Questions

The following research questions were addressed in this study:

1. Does an adolescent's academic engagement in school mediate the relationship between parental behaviors and grades?
2. Does an adolescent's academic engagement in school mediate the relationship between teacher behaviors and grades?

3. Does an adolescent's academic engagement in school mediate the relationship between peer influence and grades?
4. Does an adolescent's academic engagement in school mediate the relationship between academic self-efficacy and grades?

Definition of Terms

Operational definitions allow for the unambiguous understanding of research concepts. They define exactly what the researcher is measuring. The following terms are defined for this study.

Parenting style. Research has identified several types of parenting styles. These styles have been found to have two dimensions – demandingness and responsiveness. This study will measure the two dimensions. Demandingness is the amount of control a parent exerts on his or her child. An example of this can be the leniency a parent has towards his or her adolescent following house rules. On the other hand, responsiveness is the amount of warmth a parent exhibits toward his or her child. Measurement of this is based on the parent meeting the physical and psychological needs of his or her adolescent. These two dimensions work in concert to produce various and fluctuating parenting styles (Paulson, 1994).

Parental involvement. Paulson (1994) defined parental involvement as the attitudes and behaviors that parents exhibit towards the success of their children. This has three dimensions. The values a parent communicates regarding his or her adolescent's achievement is one of them. Another is the interest that parents demonstrate in their child's schoolwork. The extent of involvement that a parent partakes in school functions is the third.

Teacher caring. This concept has been delineated as a student's perception of his or her teacher's goodwill towards him or her. The construct is thus labeled perceived caring. Three factors are associated with teacher caring, including: a teacher's ability to be empathetic with the

student, understand the student's perspectives and needs, and adaptively reacting to a student's problems and needs (Teven & McCroskey, 1997).

Teacher academic expectations. Middleton and Midgley (2002) defined this as the amount of press a teacher demonstrates to ensure a student understands what is being taught. It is similar in nature to demandingness – or expectations of adherence – relative to parenting styles. In this case, it is expectations – or press – to understand. This encompasses the extent a teacher presses a student for more thoughtful inquiry and explanations, completion of more challenging work, and exertion of full effort in school.

Peer influence. In this investigation, peer influence will be measured using two dimensions. The first is through conventional involvement. This is illustrated by the extent peers are involved in behaviors that foster adaptive academic outcomes such as doing homework and reading books. In contrast, peer trouble is the second dimension. It is illustrative of behaviors that will impede academic and life success such as getting in trouble at school and with the law (Simpson & McBride, 1992).

School Engagement. This construct is defined as the amount of psychological interest and effort a student demonstrates in schoolwork (Steinberg, 1996, 2014). An engaged student spends a lot of time doing homework. He or she also does not have many – if any – unexcused absences. It is also true that the engaged student actively pays attention in class. Daydreaming during inappropriate times for them is a rarity. It is vice-versa for all of the above when describing the unengaged student.

Grades. Common indicators of academic achievement in school are grades. They often appear as letters of the alphabet. For example, A – is associated with excellent performance, B – with good performance, C – with average performance, D – with poor performance, and E or F –

with failure. Each respective grade reflects a student's mastery of what was taught to him or her (Ormrod, 2009).

Academic Self-Efficacy. Self-Efficacy – a key construct in Social Cognitive Theory – is the perception of how successful one would be when executing a course of action (Bandura, 1997). These beliefs can be global or domain specific. For this study, academic self-efficacy refers to the perceptions adolescents have about their ability to learn in school. These abilities are related to reading, note taking, test taking, and studying (Zimmerman & Kitsantas, 2005).

Significance of Study

In January 2002, a comprehensive piece of federal legislation was signed into law. It is known as the No Child Left Behind (NCLB) Act. The NCLB was designed to ensure that all students, regardless of their socioeconomic status, would achieve academic proficiency (U.S. Department of Education, 2011). To realize this, states were given a mandate to create and enforce certain academic standards. These standards were left at the discretion of the respective states. With annual standardized testing and public reporting of the results, schools were to be held accountable for the quality of education they provided.

Underperforming schools – where student's test scores show no improvement – faced different types of sanctions. A reduction in funding, state takeover, and possible closure are among the remedies for poor student performance. Therefore, focusing on meeting and exceeding these standards have become a primary concern for schools, school districts, and states.

According to recent data, achieving these standards has been difficult. In the State of Michigan, student performance is assessed using scores from the Michigan Educational Assessment Program (MEAP) in grades 3 through 9. The Michigan Merit Examination is used

for students in the 11th grade (State of Michigan, 2012a). The scores students achieve in English and Mathematics on these examinations are used to determine if standards are met (State of Michigan, 2012b).

Some states have reported that as many as 50% or more of their schools are unable to meet NCLB standards (McNeil, 2011a). In Michigan, where this study was conducted, 37 school districts did not make adequate yearly progress (AYP) for the 2010-2011 school year (State of Michigan, 2011). Due to the repercussions associated with this, several states, including Michigan, have asked for waivers from the federal government. Although these are likely to be granted, schools still will be expected to adhere to a set of federally mandated standards (McNeil, 2011b).

Understanding what contributes to successful schools is paramount to meeting these standards. The current study intends to examine several variables that research has found to be associated with school success. A particularly unique aspect of this study is its use of a mediation model. This model facilitates the possibility of making causal inferences using multiple linear regression analyses. An additional unique aspect of this study is its attempt to identify the most important variable that contributes towards self-reported academic grades, school engagement, and academic self-efficacy, respectively. Data resulting from this study highlight some developmental needs of all stakeholders. School administrators, teachers, parents, and students could use these results as a guide to developing programs and interventions that foster adaptive academic outcomes.

CHAPTER 2

LITERATURE REVIEW

Overview of Social Cognitive Theory

Social cognitive theory (Bandura, 1986) posited that learning is an interaction between individual cognitions, behaviors, and environmental contexts. This theory postulated that acquiring knowledge depends on experiences of interacting with and observing others. Specifically, the theory was concerned with how personal and environmental factors are related to beliefs about, and approaches to, learning. According to Bandura (1986) choices result from a reciprocal interaction between behaviors, the environment, and other personal variables including personal beliefs. So student academic behavior during high school is explained as a function of reciprocal interactions among individual beliefs, such as self-efficacy for learning, and environmental factors, such as interactions with parents, teachers, and peers who serve as role models. The observation of desired behavior from role models is a major factor in learning (Bandura, 1986, 1997). Role models in social cognitive theory can be individuals who provide concrete explanations/demonstrations of how to behave in particular situations and are perceived to be credible.

Self-Efficacy

Self-efficacy represents a person's belief about his or her ability to perform a specific task (Bandura, 1997), and is a key concept of social cognitive theory. This belief is premised on an individual thinking if an action will bring the desired result, and whether an outcome can be changed based on his or her behavior. Self-efficacy beliefs are domain specific, meaning they differ depending on the contexts in which they occur. For example, students can have different levels of self-efficacy for their mathematics performance than for their English performance.

Bandura (1997) stated that there are four sources that contribute towards self-efficacy judgments: (a) enactive experience, (b) vicarious experience, (c) verbal persuasion, and (d) emotional arousal. Enactive experience relates to a student's expectations based on his or her own past performance of the task. For example, if a student does well on a mathematics exam, his or her beliefs about being successful in mathematics is likely to increase. Enactive experience is the strongest influence on self-efficacy beliefs. Vicarious judgments are acquired by watching models' experience with a task. This source of self-efficacy may be illustrated by a student comparing his or her test scores with students around him or her. Self-efficacy beliefs are likely to increase if a student does better than others around him or her. Judgments gained from verbal persuasion come from messages students' receive from role models about their ability to perform a task. In this respect, encouragement assists self-efficacy beliefs while discouragement is likely to have the opposite effect. Finally, judgments made from emotional arousal are made from feelings related to success or failure at a task. For example, high levels of test anxiety have been found to make a person feel like he or she is going to fail.

Self-efficacy for learning. Self-efficacy refers to beliefs about how successful a person could be in a given course of action. The course of action investigated in this study is learning. Self-efficacy for learning is a student's beliefs about using self-regulatory processes to learn new tasks (Zimmerman & Kitsantas, 2005). Self-regulated learning is related to "learning that results from students' self-generated thoughts and behaviors that are systematically oriented toward the attainment of their learning goals" (Schunk, 2001, p. 125). Students' self-efficacy for learning can determine their choice of activities in their classes and ultimately their performance in those classes. The students with a strong sense of self-efficacy for learning have higher academic

accomplishments and motivation to participate in college preparatory related activities, such as engaging in self-regulatory learning in higher-level high school classes (Schunk, 2001).

Research has suggested self-efficacy beliefs related to learning as predictive of future academic performance related behavior choices (Bong, 2008; Pietsch, Walker, & Chapman, 2003). Pietsch, Walker, and Chapman (2003) found self-efficacy was a strong predictor for academic performance in a sample of 416 high school students. Bong (2008) also found self-efficacy significantly predicted academic performance in a sample of 753 high school students. This author addressed students' perceptions of their environments, self-efficacy, and academic behavior in math. It was found that self-efficacy mediated all relationships between perceptions and academic behaviors.

Studies have also identified self-efficacy as a predictor for future college enrollment. Kerpelman, Eryigit, and Stephens (2008) conducted a study with a sample of 374 African American adolescents in grades seven through twelve. Students completed surveys that addressed self-efficacy, ethnic identity, perceived parental support for achievement, and future education orientation. The results of this study indicated that self-efficacy, ethnic identity, and maternal support were significant predictors of future education orientation. Based on these findings, Kerpelman et al. (2008) concluded that these predictors were important when addressing an adolescent's future educational goals.

Triadic reciprocal determinism

Of particular interest is Bandura's explanation regarding interactions involving human behavior. It is known as triadic reciprocal determinism. This explanation asserted that multiple factors influence how a person acts in any given situation. In this respect, the learning context is composed of the environment, such as parents, teachers, peers, and socioeconomic status; the

psychological characteristics of the person, such as efficacy beliefs; and the individual's behavior, such as school engagement and grades. All three of these factors influence each other and are highly interdependent (Bandura, 1986, 1997).

The Influence of Socioeconomic Status in Adaptive Academic Outcomes

An important influence on educational performance and attainment is the socioeconomic status of the adolescent's family (McLoyd, Kaplan, Purtell, Bagley, Hardaway, & Smalls, 2009). Research has consistently found that middle-class adolescents score higher on basic tests of academic skills, earn higher grades, and complete more years of schooling than their working-class and lower socioeconomic status peers (Muller, Stage, & Kinzie, 2001; Schoon, Parsons, & Sacker, 2004). Adolescents who are from lower socioeconomic status levels also are more likely to score lower than their more advantaged counterparts on standardized achievement tests (Sackett, Kuncel, Arneson, Cooper, & Waters, 2009). Despite the narrowing of some socioeconomic gaps in school achievement, inequalities in achievement between the social classes is still prevalent, and the importance of socioeconomic status in determining educational achievement remains strong across all ethnic groups (Goyette & Xie, 1999; Goza & Ryabov, 2009; Hanson, 1994; Kao & Tienda, 1998; Lucas, 1996; Sims, 2012; Teachman & Paasch, 1998). Socioeconomic status also influences an adolescent's school performance through neighborhood processes. For example, poor African American students who live in neighborhoods with a higher proportion of middle-class neighbors value education more and exert greater effort in school than their counterparts who live in disadvantaged neighborhoods (Ceballos, McLoyd, & Toyokawa, 2004; Stewart, Stewart, & Simons, 2007).

Findings have explained that family background is significantly related to educational achievement because children from lower socioeconomic status levels are more likely to enter

elementary school scoring low on assessments of basic academic skills. This initial disadvantage is a combination of both genetic and environmental variables and can be cumulative over the lifespan. Middle-class adults generally have higher IQs than their lower socioeconomic status counterparts, and this advantage is passed on to their children – both through inheritance and through the benefit that middle-class youngsters receive from growing up under favorable environmental conditions (Teachman, 1996). Longitudinal studies have shown that problems with school as early as kindergarten are predictive of poor school performance in adolescence (Hamre & Pianta, 2001). Consequently, adolescents who enter high school without having mastered basic academic skills have an inadequate foundation to work with and quickly fall behind, with some dropping out of high school before graduating.

In light of the above, one reason for the relatively poorer school performance of lower socioeconomic status youth is that they begin school with a clear academic disadvantage (McLoyd et al. 2009). Another reason for this problem is stress, both before and during adolescence. Adolescents who come from lower-socioeconomic status backgrounds experience more stressful life events, report more daily hassles, and attend schools that have aversive environments (DuBois, Felner, Meares, & Krier, 1994; Felner, Brand, DuBois, Adan, Mulhall, & Evans, 1995; Fuller-Rowell, Evans, & Ong, 2012; Gillock & Reyes, 1999; Pungello, Kupersmidt, Burchinal, & Patterson, 1996). Studies have indicated that stress adversely affects adolescents' mental health, physical well-being, and school performance (Benner & Kim 2010; Burrell & Roosa, 2009; Carlo, Padilla-Walker, & Day, 2011; DuBois, Felner, Brand, Adan, & Evans, 1992; Felner et al., 1995; Fuller-Rowell et al., 2012; Kim & Brody 2005).

Research also suggests that parents from higher socioeconomic levels are more likely to be involved in their adolescent's education, especially through formal parent-teacher

organizations, like the PTA (Shumow & Miller, 2001). Middle-and upper-socioeconomic status parents are also more likely to be informed about their child's school, responsive to any problems their child may be having in school, and be active in selecting more rigorous courses for their child to take (Crosnoe & Huston, 2007). Because adolescents whose parents are involved in their schooling perform better than those whose parents are not involved, students from higher socioeconomic levels may have a distinct advantage in school in comparison to their less advantaged peers – in part – because of their parents' more active involvement (Henry, Cavanagh, & Oetting, 2011; Lee & Croninger, 1994; McLoyd et al. 2009).

Socioeconomic differences in school achievement are a complex and cumulative interaction of a variety of influences. It is important to take into account this broader environment in which individuals pursue their education (Caro, McDonald, & Willms, 2009; Gonzales, Cauce, Friedman, & Mason, 1996; Steinberg et al., 1996). Distinguishing between psychological and environmental variables is difficult, because there is interaction and influence among them. Living and attending school in a disadvantaged environment can contribute towards disengagement in school, which may lead a person to give up on any chance of success. Nevertheless, many adolescents from socioeconomically disadvantaged backgrounds have been successful in overcoming the barriers and tremendous odds against them. In this case, research suggests that social support is possibly the most important factor for achieving in school. Parents who utilize an authoritative style of parenting, are interested in their child's academic progress, and exhibit high aspirations regarding their child's educational attainment, as well as the availability of peers who support and encourage academic success have been found most important (Benner & Mistry, 2007; Brody, Stoneman, & Flor, 1995; Gregory, 1995; Melby, Fang, Wickrama, Conger, & Conger, 2008; Steinberg et al, 1996; Sui-Chu & Willms, 1996).

Thus, an adaptive home environment and having good friends can in some situations overcome the disadvantage that being low socioeconomic status can bring. Official records show that 69.2% of the total student population at the high school this study was conducted at participated in the free/reduced price lunch program during the 2012-2013 school year (State of Michigan, 2013). This percentage is indicative of the number of students at this school who come from low-income families.

The Role of Parents in Adaptive Academic Outcomes

Research has found that adolescents' school performance is directly related to their parent's values and expectations (Jodl, Michael, Malanchuk, Eccles, & Sameroff, 2001). Parental encouragement of academic success can occur in several ways, all of which have been shown to be of benefit to an adolescent's performance in school. Parents who encourage success in school set higher standards for their child's school performance and homework. They also have higher aspirations for their child. This has been found to contribute to school success (Luthar et. al., 2006; Patrikakou, 1996; Wilson & Wilson, 1991). Parents who encourage success in school also hold values that are consistent with doing well in school, and they exhibit this by structuring their home environment to support the messages that children receive from their teachers (Benner Graham, & Mistry, 2008; Jodl et al., 2001; Sui-Chu & Willms, 1996). Studies indicate that adolescents in high school profit from having parents who help them learn more effective time management strategies and healthier work habits (Xu, 2004).

Parents who encourage success are more likely to attend school programs, to assist with selecting courses and to exhibit active interest in school activities and assignments. In other words, the parents are involved in their child's education. All of these behaviors have been found to contribute to students' success in school (Benner et al., 2008; Bogenschneider, 1997; Hill,

Castellino, Lansford, Nowlin, Dodge, Bates, & Pettit, 2004; Hoover-Dempsey & Sandier, 1995; Muller, 1998; Shumow & Miller, 2001).

An adolescent may think that academics are both important and more conquerable if his or her parents are involved (Grolnick & Slowiaczek, 1994; Ibanez, Kuperminc, Jurkovic, & Perilla, 2004; Zhang, Haddad, Torres, & Chen, 2011). By making a positive impression, teachers may also take more notice of the student whose parent is involved (Kuperminc, Darnell, & Alvarez-Jiminez, 2008). In contrast, students may disengage from school if their parents show no interest in their schooling (Wood, Kurtz-Costes, Rowley, & Okeke-Adeyanju, 2010). And the way that parents involve themselves in school matters. Findings indicate that encouraging and expecting achievement in school, and actively being engaged in school activities, are both effective forms of parental involvement (Hill & Tyson, 2009). Interestingly, helping with homework is not. Furthermore, parental involvement has a larger effect when the adolescent attends a school where many other parents are involved as well (Pong, 1998).

Parenting style has also been found to influence a student's school performance. Numerous research findings have suggested that authoritative parenting is related to success in school during adolescence. This is manifested by better academic performance, better attendance, higher expectations, more positive academic beliefs, and higher engagement in school (Corville-Smith, Ryan, Adams, & Dalicandro, 1998; Li, Lerner, & Lerner, 2010; Murray, 2009; Sirin & Rogers-Sirin, 2004; Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994; Wentzel, 1998). This type of parenting has a high degree of responsiveness to the child's needs while maintaining a high degree of demandingness – or expectations. It is warm, firm, consistent, non-aversive, and fair. In contrast, parenting that is harsh, inconsistent, or incompetent is associated with less engagement in school and lower achievement (Clark, Dogan, & Akbar,

2003; DeBaryshe, Patterson, & Capaldi, 1993; Eamon, 2005; Melby & Conger, 1996; Wang, Pomerantz, & Chen, 2007). Additionally, extreme parental permissiveness, not harshness, is related to higher rates of school dropout (Rumberger, Ghatak, Poulos, Ritter, & Dornbusch, 1990). It seems that if parents let their children do whatever they want, this lack of structure may contribute to failure in a system that requires structured support. Furthermore, research has also found authoritative parenting to help struggling early adolescents do better in school (Catterall, 1998).

There are many reasons why authoritative parenting promotes school success. One is that it assists with the development of an adaptive achievement orientation – including efficacy beliefs – that enhances an adolescent’s performance in school (Aunola, Stattin, & Nurmi, 2000; DeBaryshe, Patterson, & Capaldi, 1993; Duchesne & Ratelle, 2010; Glasgow, Dornbusch, Ritter, Troyer, & Steinberg, 1997; Mofid, Azadfallah, & Tabatabai, 2012). This is partly explained by authoritative parents being more likely themselves to hold adaptive beliefs about their child’s achievement and less likely to exhibit excessive control – two factors that have been found to strengthen adolescents’ work ethic and intrinsic motivation (Grolnick & Slowiaczek, 1994). Exhibiting a strong work orientation enhances achievement in school directly, and through the positive impression it makes on teachers (Farkas, Grobe, & Shuan, 1990).

In sum, research findings suggest that consistent, authoritative parenting is associated with many benefits for the adolescent, including better performance in school (McLoyd et al., 2009; Steinberg, 2001; Wentzel, 1994). Authoritative parents are also the type of parent to have more involvement in school activities, which contributes to success in school (Crosnoe, 2001; Juang & Silbereisen, 2002; Paulson, 1994; Steinberg, Dornbusch, & Brown, 1992). And, as mentioned earlier, students of authoritative parents also do better in school because the values

and expectations they encounter at school are echoed at home (Arunkumar, Midgley, & Urdan, 1999; Zhang et al., 2011).

The Role of Teachers in Adaptive Academic Outcomes

There are many similarities between good teachers and good parents (Allen, Pianta, Gregory, Mikami, & Lun, 2011; Wentzel, 2002). Research suggests that authoritative parenting is not only beneficial in parent-child relationships. The pattern of classroom variables related with adaptive student behavior and beliefs falls within the realm of the authoritative family environment (Gregory, Cornell, Fan, Sheras, Shih, & Huang, 2010; Pellerin, 2005). Adolescents have been found to benefit significantly in school where their teachers adopt an authoritative style of classroom management. More specifically, students are engaged and achieve more in school when their schools have a high level of responsiveness – to the adolescent’s needs – and high level of expectations to achieve. Furthermore, academic orientation and psychological adjustment interact and influence each other. This means that an adaptive school environment – where relationships between students and teachers are positive, and teachers are both responsive and demanding – promotes adolescents’ psychological well-being in addition to their better performance in school (Eccles, 2004; Gutierrez, 2000; Kalil & Ziol-Guest, 2008; Reddy, Rhodes, & Mulhall, 2003; Wang, Selman, Dishion, & Stormshak, 2010).

In general, students and teachers have reported more satisfaction when their classes combine a moderate degree of structure with high student participation and high teacher support. This finding has been suggested in research of both Caucasian and minority students from various socioeconomic backgrounds (Langer, 2001; Vieno, Perkins, Smith, & Santinello, 2005; Way & Robinson, 2003; Wentzel, 2002). In these classes, teachers encourage students to participate while maintaining effective control of the class. Classes that focus too much on

completing assignments with minimal student participation have been found to make students lose interest, unhappy, and feel anxious (Moos, 1978). Students achieve more when their teachers spend most of the class time on lessons, start and finish lessons on schedule, provide clear constructive criticism about their performance, communicate expectations in an unambiguous manner, and congratulate students wholeheartedly when they do well (Eccles & Roeser, 2011; Rutter, 1983; Wang et al., 2010).

A major influence on how much students like going to school is the extent to which they feel their teachers respect and care about them (Hallinan, 2008). Students in schools where teachers are supportive but firm and maintain high expectations for behavior and academic work feel closer to their school and have adaptive achievement motives. These beliefs and emotions contribute to higher test scores, fewer academic problems, better school attendance, lower rates of delinquency, and more supportive friendships (Eccles, 2004; Li & Lerner, 2011; Loukas, Suzuki, & Horton, 2006; Ryan & Patrick, 2001; Way & Pahl, 2001). Findings also indicate that students exhibit higher achievement when the classroom environment promotes cooperation, instead of competition, between students (Roseth, Johnson, & Johnson, 2008).

In light of the above, the academic expectations that teachers communicate to their students has been found to be extremely important. Research studies indicate a strong correlation between teacher expectations and student performance. One reason is because teachers' expectations are often accurate assessments of their students' ability. Another reason is because teacher expectations have been found to create self-fulfilling prophecies that influence how their students behave in class (de Boer, Bosker, & van der Werf, 2010; Jussim, Eccles, & Madon, 1996). Teachers form these expectations from different sources. Unfortunately, research suggests that a student's socioeconomic and ethnic background likely play a part in how teachers base

their expectations. These factors sometimes may consciously and unconsciously mold a teacher's understanding of how well a student will do, consequently affecting a student's learning. For example, a teacher may call on poor or minority students less often than he or she calls on White students or students from higher socioeconomic levels – which may send a message to students about whose responses the teacher believes will be correct and insightful.

Several studies have reported that African American and Hispanic students perceive their teachers as having low expectations for them as well as holding stereotypes about their likelihood of engaging in delinquent behavior (Spencer, 2005). In line with this, there is research that suggests White teachers rate the misbehavior of African American students more severely than African American teachers do (Downey & Pribesh, 2004). This is associated with African American students receiving harsher discipline and more severe punishments than their counterparts receive for similar misconduct in school. Over the years this type of treatment has been shown likely to adversely affect the student's interest in school. Consequently, a teacher's biases held against minority and adolescents from low socioeconomic backgrounds may make it difficult for students from these groups to attain a level of academic accomplishment that allows them to move up in socioeconomic status. Furthermore, this type of treatment by teachers – having low expectations for some ethnic groups while holding high expectations for others – can contribute to students from different ethnicities feeling hostile against each other (Rosenbloom & Way, 2004).

Not surprisingly, parents also play an important role in developing teacher expectations. Findings from a recent study of Latino students suggest that the amount of involvement that parents exhibit in school directly influences an adolescent's school achievement. As mentioned previously, adolescents whose parents are involved in school achieve more than their

counterparts. However, this involvement has also been found to positively affect teachers' expectations for an adolescent's achievement, and contributes to better student performance (Kuperminc, Darnell, & Alvarez-Jiminez, 2008).

The Role of Peers in Adaptive Academic Outcomes

There are also findings that suggest friends influence an adolescent's performance in school (Lynch, Lerner, & Leventhal, 2013). Some studies report that friends are the most important influences on an adolescent's day-to-day school behaviors, such as doing homework and exerting effort in class (Kurdek, Fine, & Sinclair, 1995; Midgley & Urda, 1995; Steinberg et al., 1996). So, although parents have been found to be stronger influences on long-range educational plans, what adolescents do in school on a daily basis is more influenced by their friends. Therefore, one of the main reasons that adolescents growing up in poor neighborhoods perform worse academically is that they most often find themselves surrounded by peers who are disengaged from school (South, Baumer, & Lutz, 2003).

Peer influence is popularly seen as a negative aspect of adolescent development, contributing to the performance of various types of delinquent behaviors. However, as mentioned above, this notion is not correct. Friends can have a positive influence as well. Research findings indicate that the impact of an adolescent's friends on his or her school performance depends on the academic orientation of the friends in question. Having friends who earn high grades and aspire to further their education can promote an adolescent's performance in school. In contrast, having friends who aren't doing well in school may impede it (Lynch et al., 2013; Steinberg et al., 1996). Consistent with this is the finding that students whose friends are more engaged in school are themselves more engaged and less likely to drop out (Ream & Rumberger, 2008).

Additionally, friends can influence the courses an adolescent selects and plays a significant role in girls' decisions to enroll in advanced classes in subjects such as math and science (Riegle-Crumb, Farkas, & Muller, 2006). Students' grades also conform over time in relation to the grades of their friends (Mounts & Steinberg, 1995). Students with best friends who perform well in school are more likely to exhibit improvements in their own school performance than are students who begin at similar levels of achievement but whose friends aren't focused towards academics. This influence is also true for future college plans. Research has found that among adolescents who aren't high performers in school, those with friends who are high performers are more likely to plan to continue their education than are those with friends who aren't doing well in school (Flashman, 2012; Veronneau, Vitaro, Brendgen, Dishion, & Tremblay, 2010).

Although peers can influence school performance in various ways, many researchers have noted that the influence of peer culture in the United States on academic performance in school is far more negative than positive (Steinberg et al., 1996; Steinberg, 2014). This is possibly why adolescents with an extremely high orientation toward peers have a tendency to perform poorly in school (Fuligni & Eccles, 1993). In contrast, adolescents who don't have many – if any – friends often have a stronger academic orientation than relatively more popular students (Luthar & McMahon, 1996; Wentzel & Asher, 1995). As the transition to middle school is made, adolescents start to become increasingly worried about how their friends will react to their success in school. One study found, for example, that by eighth grade students didn't want their peers to see them as caring much about academics, even though they realized that it would be beneficial to demonstrate adaptive academic behaviors to their teachers (Juvonen & Murdock, 1995).

It's important to note that being adept in school doesn't have to mean that an adolescent can't have a decent social life. A recent study where adolescents kept daily diaries of their time usage gives us insight into the differences between high- and low-performing students in how they spend their time (Witkow, 2009). Consistent with the literature, students who perform better than their peers in school spend more time studying. This is true for both weekdays and weekends. A significant difference between the groups is in how much – and when – they spend time with their friends. High-performing adolescents spend less time with their friends than do their low-performing counterparts on weekdays, but not on weekends. This indicates that adolescents who do well in school are still able to hang out with friends. They do this by managing their time adaptively during the week. It's been shown that adolescents are more likely to spend time with peers whose orientation toward school is similar to their own. In light of this, one reason that high-performing students spend less time with friends on weekdays is that their friends are also doing what they themselves are engaged in - studying.

There have been multiple studies that have investigated how the influences of peers and parents operate together to affect an adolescent's academic performance in school (Brown, Mounts, Lamborn, & Steinberg, 1993; Fletcher, Darling, Steinberg, & Dornbusch, 1995; Gonzales, Cauce, Friedman, & Mason, 1996; Kurdek et al., 1995; Steinberg et al., 1996; Steinberg, 2014). These studies suggest that parents have an influence on an adolescent's choice of friends. The selected friends then can influence their school performance (Brown et al., 1993). Having academically oriented friends is especially beneficial to adolescents from single-parent homes, where it's more likely that parental involvement in school will be low (Garg, Melanson, & Levin, 2007). In the same light, having friends who don't value school success may negate the benefits of authoritative parenting (Steinberg et al., 1996). Therefore, it is simplistic and

erroneous to attribute the academic success – or failure – of an adolescent to a specific factor. It is more proper to understand the mentioned phenomenon as a complex, reciprocal interaction between numerous factors.

CHAPTER 3

METHODOLOGY

Research Design

A cross-sectional research design was used in this study. This design was appropriate when conducting survey research with adolescents. The cross-sectional design allows for simultaneous measurement and comparison of responses for different age groups (Kerlinger & Lee, 2000). This design also controls for participant attrition as no treatment or intervention is required.

Participants

The participants in this study were attending a single public school high school in southeastern Michigan. This sample was drawn from a population of approximately 1,900 students. A total of 332 students in grades 9 through 12 participated in the study. The reported ethnic makeup of the school population was 72% Caucasian, 14% African-American, 10% Asian, 2% Hispanic, 1% Multiethnic, and 1% that identified as “Other.”

Procedure

Three teachers provided use of their classes for data collection. These teachers provide instruction in English, mathematics, and art to students in grades 9, 10, 11, and 12. The researcher provided 335 parent research information sheets, envelopes, and postage to be mailed to parents whose children who were in classes taught by the three teachers who volunteered for the study.

The information sheets sent to the parents described the research project, guaranteed anonymity, and discussed relevant rights of research participants. Parents also were given information on methods of opting out their child from participating. Parents could refuse their

child's participation by contacting the researcher at a provided telephone number, through an email address, or by signing and returning the tear-off portion of the information sheet. Parents were asked to notify the researcher within two weeks of receipt of the research information sheet if they did not want their child to participate in the research. Parents who allowed their child to participate did not have to do anything.

Once the two weeks elapsed, students were asked to participate as a class in their respective classrooms. School administrators and teachers were not present during recruitment due to being a potential source of coercion. Nonparticipating students – who did not assent and/or were parentally prohibited – had their names circled on the participant list. Once all the students had been identified in the classroom, the list with names was destroyed. The surveys completed by the students were not linked to any identifiable information and each had a random code number assigned. Thus, these instruments could not be traced to the student who completed them. Survey instruments were numbered and placed in packets in counterbalanced order for distribution to the participating students.

Before distributing the survey packets, students were given a letter of assent. This assent described the research project and assured participants that their participation is voluntary, anonymous, and had no relation whatsoever to school. Furthermore, the students were informed that nonparticipation or withdrawal during participation would not affect their grades or standing in school negatively. They were told the research study was investigating issues involving a student's academic success in school. This description and assurance also was explained verbally to the participants. Only students who were parentally allowed and thereafter assented to participate were given survey packets. A respective class period is 60 minutes. In light of this, a period of 15 minutes was allotted to obtain assent and 45 minutes to complete the surveys.

Arrangements were made to have nonparticipating students complete school-related work during data collection. This procedure was repeated six times throughout the day. All data were obtained in the classrooms, with absent students excluded from the study.

Instruments

School engagement. The School Engagement Questionnaire (SEQ) is an instrument that measures high school students' self-reported effort and investment in math, English, and social studies classes (Fredricks, McColskey, Meli, Mordica, Montrosse, & Mooney, 2011; Steinberg, 1996). *How often do you pay attention during each of these classes?* – is a question asked on this survey. There are two versions of the SEQ. One measures engagement on the three classes listed above in 12 items – 4 questions repeated for each class. Subsequent versions have discarded the social studies section because high school students are more likely to be enrolled in math and English courses in comparison to social studies (Kenny, Blustein, Chaves, Grossman, & Gallagher, 2003). Both the 12-item and 8-item versions have been shown to be reliable and valid. For this investigation, the 8-item version was utilized due to the aforementioned reason.

Scoring. This instrument is scored on a Likert-type scale. Items 1 and 5 have a score range of 1 to 6. Items 2, 3, 4, 6, 7, and 8 are have a score range of 1 to 5. The 8 items are summed up to get an overall score of engagement. Higher scores reflect higher levels of engagement and vice-versa. Total scores can range from 8 to 42.

Reliability. Using the 8-item measure, an investigation of 89 males and 85 females aged between 13 and 17 reported an internal consistency of .77 (Kenny, et al., 2003). Other researchers found a .80 for a sample of 689 participants in nine through twelfth grade (Wettersten, Guilmino, Herrick, Hunter, Kim, Jagow, Beecher, Faul, Baker, Rudolph, Ellenbecker, & McCormick, 2005). Furthermore, a sample of 197 adolescents ranged in age

from 13 to 17 yielded a coefficient of .74 (Perry, 2008). The Cronbach alpha coefficient for the present study of 332 students was .76, which was similar to that achieved by Perry (2008).

Validity. The School Engagement Questionnaire is a valid measure. In several studies it has been found to positively correlate with a similar instrument, the Identification with School Questionnaire. The ISQ (Voelkl, 1996) is a reliable instrument designed to measure the educational values and feelings of belongingness of students to school. One investigation yielded an alpha of .39 between the two (Kenny et al., 2003). Results of another study found a coefficient of .33 (Wettersten et al., 2005). And, Perry (2008) reported the relationship to be a .42. Furthermore, the School Engagement Questionnaire was also found to positively correlate with student ratings of grades, perceptions of academic ability, and perceptions of the importance of school (Taylor, Casten, Flickinger, Roberts, & Fulmore, 1994).

Academic self-efficacy. The Self-Efficacy for Learning Form (SELF) is an instrument that measures students' beliefs about their ability to be successful in relation to various academic situations (Zimmerman & Kitsantas, 2005). *When you think you did poorly on a test you just finished, can you go back to your notes and locate all the information you had forgotten?* – is a description of one of these situations. The SELF, which was found to measure one factor – self-efficacy for learning – initially consisted of 57 items which later was reduced to 19. This was done in the interest of convenience and based on high reliability results (Zimmerman & Kitsantas, 2005, 2007). The resulting abridged form – SELF-A – was used in this study.

Scoring. Items on the SELF are rated on a percentage-based Likert-type scale. This ranges from 0 to 100 broken into 10 percent increments – resulting in 11 possible selections for each item. Higher scores represent adaptive self-efficacy for learning beliefs. In contrast, maladaptive self-efficacy for learning beliefs are reflected through lower scores.

Reliability. Zimmerman and Kitsantas (2005) – using the 57-item measure – reported that the Cronbach’s alpha for a sample of 180 girls aged 14 to 19 was .99. A sample of 167 females and 56 males with a mean age of 22 yielded an alpha coefficient of .98. Using the scores from this second sample, the researchers reduced the number of items to 19 and performed an exploratory principal component factor analysis. This revealed that the new SELF-A was measuring only one factor – self-efficacy for learning – and had a reliability coefficient of .97 (Zimmerman & Kitsantas, 2007).

Additionally, the SELF-A has been used by other researchers as well. In a high school sample of 46 males and 71 females the alpha coefficient reported was .94 (Pearson, 2010). Ethnicities represented in all of the aforementioned studies were Caucasian, African-American, Hispanic, and Asian/Other. The Cronbach alpha coefficient for the present study of .91 was similar to that achieved by Pearson (2010) and Zimmerman and Kitsantas (2007).

Validity. Studies have found the SELF to be a valid instrument. It has been found to correlate with a single factor measure of self-regulated learning with a coefficient of .72. This measure - Rating Student Self-Regulated Learning Outcomes: A Teacher Scale (Zimmerman & Martinez-Pons, 1988) – was reported to have a reliability coefficient of .96 (Zimmerman & Kitsantas, 2005). Furthermore, the SELF and SELF-A were found to be correlated at .67 which was statistically significant.

Parental behaviors. Parental behaviors was measured using the 52-item Parenting Style and Parental Involvement Questionnaire (Paulson, 1994; Paulson & Sputa, 1996). It has five distinct scales – measuring an adolescent’s perceptions of his/her parent’s demandingness, responsiveness, values toward achievement, interest in schoolwork, and involvement in school functions. As mentioned earlier, this study will address parenting styles through two common

dimensions – demandingness and responsiveness. The Parental Demandingness scale was developed to measure the amount of control an adolescent believed his or her parents exert on him or her. *I would describe my mother as a strict parent*, is one of the 15 items on this scale. The second dimension was measured using the 15-item Parental Responsiveness scale. *My mother usually tells me the reason for rules*, illustrates one of the choices available.

Paulson (1994) also found three dimensions of parental involvement and created their respective scales. They are values toward achievement, interest in schoolwork, and involvement in school functions. *My mother thinks I should go to college*, is one of the 8 items on the Values Toward Achievement scale. The Interest in Schoolwork scale has 9 items. *My mother usually knows the grades I get*, is an item on this scale. Finally, the Involvement in School Functions scale is a 5 item measure. *My mother usually goes to parent-teacher conferences*, is indicative of one of the selections that can be made here.

Adolescents respond to each scale twice, once for their mother/mother-like figure and again for their father/father-like figure. Thus, there are a total of 10 scales – 5 for mother/mother-like figure and 5 for father/father-like figure. Scale wording is modified to reflect such interpretations.

Scoring. Items on the Parental Demandingness, Parental Responsiveness, Values Toward Achievement, Interest in Schoolwork, and Involvement in School Functions scales are all rated on a Likert-type format. Scores for each item range from 1 to 5, with higher scores indicating a higher likelihood of that item occurring and vice-versa. The Parental Demandingness scales have a score range of 15 to 75. Items 3, 4, 7, 10, 11, 12, and 14 are reverse scored. The Parental Responsiveness scales also have a range of 15 to 75 with items 1, 4, 5, 8, 9, 10, and 15 reverse scored.

There is a score range of 8 to 40 with item 8 reverse scored for the Values Towards Achievement scales. Possible scores for the Interest in Schoolwork scales range from 9 to 45 with items 1, 2, and 7 reverse scored. Finally, the Involvement in School Functions scales have a range of 5 to 25 with items 2 and 4 reverse scored. As with each item, higher scores for each scale suggest a higher likeliness of parents demonstrating the construct in question.

Reliability. Paulson (1994), in a study of 247 adolescents between the ages of 14 to 16, reported moderate internal consistency for all 10 scales. Table 1 lists the alpha coefficients found as well as the alpha coefficients for the present study.

Table 1

Cronbach Alpha Coefficients for Adolescent Self-reports

Subscales	<u>Paulson & Sputa, 1996</u>		<u>Present Study</u>	
	Mother	Father	Mother	Father
Demandingness	.78	.84	.78	.78
Responsiveness	.84	.87	.80	.78
Values	.79	.78	.82	.86
Interest in school work	.77	.71	.69	.71
Involvement in school	.72	.71	.68	.57

Validity. The parental style and involvement scales have been found to be valid measures. Administered to both parent and child, parental and adolescent ratings have consistently yielded positive correlations with each other (Paulson, 1994). These are reported in Table 2.

Table 2

Correlations between Adolescent and Parent Reports

Subscales	<u>Mother</u>		<u>Father</u>	
	Boys	Girls	Boys	Girls
Demandingness	.46	.34	.42	.34
Responsiveness	.29	.44	.35	.36
Values	.43	.49	.49	.37
Interest in school work	.26	.51	.39	.40
Involvement in school	.37	.65	.42	.58

Furthermore, significant correlations also have been found with similar scales in the Children's Report of Parental Behavior (CRPBI; Schaefer, 1965). There is a .60 and .64 correlation, respectively, between maternal and paternal demandingness and the Enforcement of Discipline scale of the CRPBI. Additionally, maternal and paternal responsiveness respectively yielded .76 and .79 with the CRPBI's Acceptance of Individuation scale.

Teacher caring. The Perceived Teacher Caring scale (Teven & McCroskey, 1997) was developed to measure a student's beliefs about his or her teacher's attitude toward him or her. *Understanding versus not understanding* is representative of one of the 9 items on this instrument. And, it has been found to measure one construct – perceived teacher caring.

Scoring. This scale is scored in a Likert-type format. Each item has a respective positive and negative belief with numbered selections separating them. The ranges for each item are 1 through 7. Selections at each end are indicative of very strong perceptions. Numbers that fall in-between suggest weaker beliefs. Furthermore, items 1, 2, 4, 6, and 8 are reverse scored. Possible scores range from 9 to 63, with higher scores suggesting positive perceptions and vice-versa.

Reliability. Initial reliability using 235 university students yielded an alpha coefficient of .95 (Teven & McCroskey, 1997). A further study found similar results. In a sample of 204 males

and 193 females aged 14 to 21, reliability was .92 (Smith, 2005). The obtained Cronbach alpha coefficient for the present study was .57.

Validity. An iterated principal factor analysis found that the Perceived Teacher Caring scale measures one construct – perceived teacher caring (Teven & McCroskey, 1997). It has also been correlated with Koehn and Crowell’s (1996, as cited in Teven & McCroskey, 1997) perceived caring scale and yielded a coefficient of .86.

Teacher academic expectations. The Academic Press scale (Midgley, Maehr, Huda, Anderman, Anderman, Freeman, Gheen, Kaplan, Kumar, Middleton, Nelson, Roeser, & Urdan, 2000) was used to measure teacher academic expectations in this study. This measure is part of the larger Pattern of Adaptive Learning Scales (PALS). In particular, the authors have identified the Academic Press scale as items 6, 10, 15, 17, 19, 53, and 57 of the PALS. *My teacher accepts nothing less than my full effort* – is representative of one of the mentioned 7 items.

Scoring. This scale is scored in a Likert-type format. Each item has a score range of 1 to 5. The 7 items are summed up to get an overall score of academic press for understanding. Higher scores reflect higher levels of teacher academic expectations and vice-versa. Total scores can range from 7 to 35.

Reliability. The Academic Press scale has been shown to be a reliable measure of teacher academic expectations. Midgley and colleagues (2000) utilized early adolescents in their initial study. Their findings reported an internal consistency of .79 for this scale. The Cronbach alpha coefficient for the present study of .79 was the same as that obtained by Midgley et al. (2000).

Validity. The PALS was originally validated by the developers in 1997 (Midgley et al., 2000). They have reported that it has been administered to public school students in nine, low to middle-income, highly diverse Midwestern school districts. Recently, Temple (2013) found that

the Academic Press scale is positively related to emotional and behavioral engagement in school, as well as overall grade point average.

Peer influence. A peer influence questionnaire was utilized to measure perceived peer influence. It has a total of two scales. One is the Conventional Involvement scale, which assessed peer adaptive behaviors. *How many of your friends like school?* – is representative of one of the 7 items that comprise this measure. The other is the Trouble scale, which assessed maladaptive peer behaviors. *How many of your friends have quit or want to quit school?* – is one of the 7 items that can be found in this scale.

Both of these measures were part of a larger Family, Friends, and Self research instrument (Simpson & McBride, 1992). It was developed to evaluate the social and psychological health of youth in a governmental drug prevention program. The FFS has 10 scales with a total of 60 items. However, only the 2 abovementioned scales were used for this study.

Scoring. The Conventional Involvement and Trouble scales, respectively, are scored in the same manner. Both ask adolescents to rate their responses in a Likert format. Scores range from 0 to 4 for each item and 0 to 28 for each scale. Higher ratings are indicative of adolescents believing their friends are engaging in either conventional – good – or troublesome – bad – behaviors. Lower ratings suggest the opposite.

Reliability. The Conventional Involvement scale has shown to be a reliable measure. In a study of 518 males and 182 females ranging in age from 13 to 18, Cronbach alpha was found to be .73 for conventional peer involvement (Simpson & McBride, 1992). Similarly, the same study yielded a reliability coefficient of .86 for the trouble scale. The Cronbach alpha coefficient for

the Conventional Involvement scale for the present study was .64, with an alpha coefficient of .87 obtained for the trouble scale.

Validity. Both scales have been found to be valid measures. Simpson and McBride (1992) reported significant coefficients between the mentioned scales and counselor intake ratings in a drug prevention program. For example, the relationship between the Conventional Involvement scale and a drug problem composite was -.26. Furthermore, the Trouble scale yielded .18 and .19 with a social problem composite and criminal/legal involvement rating, respectively.

Demographic survey. A short demographic survey was utilized in this investigation as well. Students were required to indicate their age, sex, grade in school, ethnic background, and self-reported average letter grade received. There were also items asking about the number of parents/parent-like figures at home, the parents number of years of schooling, and the parents employment status. Items on the survey are in a multiple-choice categorical response or fill-in the blank response format depending on the nature of the question.

Statistical Analysis

A nonexperimental design was employed in this investigation. Data computation was done using SPSS version 20. An alpha of .05 was chosen to determine statistical significance in accordance with accepted educational research practice. The following table addresses the research questions and the methods of analysis.

Table 3

Research Questions and Statistical Analysis

Hypothesis	Variables	Statistical Analysis
Research question 1: Does an adolescent's academic engagement in school mediate the relationship between parental behaviors and academic grades??		
<p>H₁: Academic engagement in school will mediate the relationship between parental behaviors and academic grades.</p> <p>H₀₁: Academic engagement in school will not mediate the relationship between parental behaviors and academic grades.</p>	<p><u>Outcome Variable</u> Grades</p> <p><u>Mediating Variables</u> School Engagement</p> <p><u>Initial Variables</u> Mother demandingness Father demandingness Mother responsiveness Father responsiveness Mother: values toward achievement school function involvement interest in schoolwork Father: values toward achievement school function involvement interest in schoolwork</p>	Multiple linear regression analysis
Research Question 2: Does adolescents' school engagement mediate the relationship between teacher behaviors and self-reported academic grades?		
<p>H₂: Adolescents' school engagement will mediate the relationship between variations in teacher behaviors and variations in self-reported academic grades.</p> <p>H₀₂: Adolescents' school engagement will not mediate the relationship between variations in teacher behaviors and variations in self-reported academic grades.</p>	<p><u>Outcome Variable</u> Grades</p> <p><u>Mediating Variables</u> School Engagement</p> <p><u>Initial Variables</u> Teacher Caring Teacher academic expectations</p>	Multiple linear regression analysis
Research Question 3: Does an adolescent's school engagement in school mediate the relationship between peer influence and self-reported academic grades?		
<p>H₃: School engagement will mediate the relationship between variations in peer influence and variations in academic grades.</p> <p>H₀₃: School engagement will not</p>	<p><u>Outcome Variable</u> Grades</p> <p><u>Mediating Variables</u> School Engagement</p>	Multiple linear regression analysis

Hypothesis	Variables	Statistical Analysis
mediate the relationship between variations in peer influence and variations in academic grades.	<u>Initial Variables</u> Peer adaptive behaviors Peer troublesome behaviors	
Research Question 4: Does adolescents' school engagement in school mediate the relationship between academic self-efficacy and grades?		
H ₄ : School engagement will mediate the relationship between academic self-efficacy and academic grades. Ho ₄ : School engagement will not mediate the relationship between academic self-efficacy and academic grades.	<u>Outcome Variable</u> Grades <u>Mediating Variables</u> School Engagement <u>Initial Variables</u> Academic Self-Efficacy	Multiple linear regression analysis

CHAPTER 4

RESULTS OF DATA ANALYSIS

The results of the data analysis used to describe the sample and address the research questions developed for this study are presented in Chapter 4. The chapter is divided into four sections. The first section provides a description of the sample using frequency distributions and measures of central tendency and dispersion. The second section includes baseline information on the scaled variables and a correlation matrix showing the relationships among the variables. Inferential statistical analyses are used in the third section of the chapter to provide results of the data analyses used to address the research questions and test the associated hypotheses. The fourth section used three stepwise multiple linear regression analyses to determine which predictor variables could be used to predict or explain three criterion variables: academic grades, school engagement, and academic self-efficacy.

The purpose of this study was to examine the mediating effects of school engagement on the relationship between adolescent's contextual environment and academic accomplishment. It was also to determine the most important variable that can predict academic grades, school engagement, and academic self-efficacy, respectively.

Missing Data

Some participants did not complete all of the items on the demographic survey and the other instruments. As the demographic information was not used in any of the inferential analyses to address the research questions, no action was taken. For the scaled variables, a missing values analysis was completed. The missing data were replaced with the mean scores for each of the missing variables.

Description of the Sample

Research information sheets were sent to the homes of 335 participants via first class mail. Of this number, two parents did not give permission for their child to participate and one student did not assent to participate in the study. A total of 332 high school students participated in the study. These students were attending high school in a suburban area with an ethnically diverse population.

The students completed a short demographic survey that obtained data on their personal and school characteristics. The grade levels of the students were summarized using frequency distributions. Table 4 presents results of this analysis.

Table 4

Frequency Distributions – Grade Level of the Students

Grade Level	Number	Percent
Ninth	78	23.8
Tenth	23	7.0
Eleventh	36	11.0
Twelfth	191	58.2
Total	328	100.0

Missing 4

The majority of students (n = 191, 58.2%) reported they were in the twelfth grade, with the students in the ninth grade (n = 78, 23.8%) comprising the second largest group. Twenty-three (7.0%) students were in the tenth grade and 36 (11.0%) were in the eleventh grade. Four students did not provide a response to this question.

The students were asked to indicate their gender and ethnicity on the survey. Their responses were summarized using frequency distributions. Table 5 presents results of this analysis.

Table 5

Frequency Distributions – Gender of the Students

Gender and Ethnicity	Number	Percent
<u>Gender</u>		
Male	159	49.2
Female	164	50.8
Total	323	100.0
Missing 9		
<u>Ethnicity</u>		
African American	50	15.2
Asian/Pacific Islander	32	9.7
Caucasian	155	47.0
Hispanic	3	0.9
Middle Eastern	63	19.1
Multi-ethnic	5	1.5
Other	22	6.6
Total	330	100.0
Missing 2		

A total of 164 (50.8%) female students participated in the study. The remaining 159 (49.2%) of the participants reported their gender as male. Nine students did not provide a response to this question.

The largest group of students ($n = 155$, 47.0%) reported their ethnicity as Caucasian, with 63 (19.1%) indicating their ethnicity was Middle Eastern. Fifty (15.2%) African Americans were included in the study, and 32 (9.7%) students indicated their ethnicity was Asian/Pacific Islander. Three (0.9%) Hispanics were among the students and 5 (1.5%) students reported they were multi-ethnic. Twenty-two (6.6%) students indicated their ethnicity as “other,” but did not provide further explanation. Two students did not provide a response to this question.

The age of the students was obtained on the demographic questionnaire. The responses to this question were summarized using descriptive statistics. Table 6 presents results of this study.

Table 6

Descriptive Statistics – Age of the Students

Number	Mean	SD	Median	Range	
				Minimum	Maximum
329	16.50	1.49	17.00	10	20

Missing 3

The mean age of the students was 16.50 (sd = 1.49) years, with a median of 17 years. The range of student ages was from 10 to 20 years of age. Three students did not provide a response to this question.

The participants were asked about their home life. Their responses to these questions are presented in Table 7.

Table 7

Frequency Distributions – Home Life

Home Life	Number	Percent
<u>Number of Parents at Home</u>		
One	71	21.5
Two	259	78.5
Total	330	100.0
Missing 2		
<u>Mother employed</u>		
Yes	218	71.5
No	87	28.5
Total	305	100.0
Missing 27		
<u>Father employed</u>		
Yes	255	86.7
No	39	13.3
Total	294	100.0
Missing 38		
<u>Mother's education</u>		
None	7	2.2
Elementary school	6	1.8
Middle school	29	8.9
High school	101	31.1
Some college	96	29.5
College graduate	86	26.5
Total	325	100.0
Missing 7		
<u>Father's education</u>		
None	8	2.5
Elementary school	8	2.5
Middle school	27	8.6
High school	112	35.8
Some college	70	22.3
College graduate	89	28.3
Total	314	100.0
Missing 18		

The majority of students (n = 259, 78.5%) were living in homes with two parents. Seventy-one (21.5%) were in homes with one parent. Two students did not provide a response to this question.

Most of the students (n = 218, 71.5%) reported that their mothers were employed, with 87 (28.5%) indicating that their mothers did not work. Twenty-seven students did not provide a response to this question.

The largest group of students (n= 255, 86.7%) indicated that their fathers were employed. The remaining students who responded to this question (n = 39, 13.3%) reported their fathers were unemployed. Thirty-eight students did not provide a response to this question.

When asked about their mothers' educational levels, 101 (31.1%) reported their mothers had completed high school, with 96 (29.5%) indicating their mothers had completed some college. Eight-six (26.5%) of the mothers were college graduates. As reported by the students, 7 (2.2%) mothers had no formal education, 6 (1.8%) had completed elementary school, and 29 (8.9%) had finished middle school. Seven students did not provide a response to this question.

The largest group of fathers (n = 112, 35.8%) had completed high school and 70 (22.3%) had some college. Eighty-nine (28.3%) students reported their fathers had graduated from college. Eight (2.5%) students reported their fathers had no formal education or had completed elementary school, with 27 (8.6%) indicating their fathers had finished middle school. Eighteen students did not provide a response to this question.

The students self-reported their academic grades. An 11-point scale, ranging from A to E, was used to allow students to indicate the type of grades they generally receive. The results of the frequency distributions used to summarize the students' responses are presented in Table 8.

Table 8

Frequency Distributions – Self-reported Academic Grades

Self-reported Grades	Number	Percent
A	33	10.2
A-/B+	73	22.6
B+/B	38	11.7
B/B-	36	11.2
B-/C+	68	20.9
C+/C	33	10.0
C/C-	17	5.2
C-/D+	18	5.5
D+/D	4	1.2
D/D-	3	0.9
E	2	0.6
Total	325	100.0

Missing 7

The largest group of students ($n = 73$, 22.6%) self-reported their grades as A-/B+, with 33 (10.2%) indicating they had all As. Thirty-six (11.2%) students indicated their grades were B/B- and 68 (20.9%) had B-/C+ grades. Thirty-eight (11.7%) students self-reported their grades as B+/B and 17 (5.2%) had grades that were C/C-. Eighteen (5.5%) students indicated their grades were C-/D+, with 33 (10.0%) reporting their grades as C+/C. Four (1.2%) students' grades were D+/D, 3(0.9%) had grades that were D/D-, and 2 (0.6%) had grades that were Es. Seven students did not provide a response to this question.

Description of the Scaled Variables

The scaled variables were scored using the protocols developed by the authors. A missing values analysis was completed to determine the extent to which the variables had missing values. The missing values were replaced with the means for the variables. The scores were summarized using descriptive statistics for presentation in Table 9.

Table 9

Description of the Scaled Variables

Variable	N	Mean	SD	Median	Actual Range		Possible Range	
					Minimum	Maximum	Minimum	Maximum
School engagement	332	29.64	5.52	30.00	10.00	41.00	8	42
Academic self-efficacy	332	63.91	15.43	66.58	19.47	98.95	0%	100%
Mother demandingness	332	3.08	.62	3.07	1.40	4.73	1	5
Father demandingness	332	2.91	.65	2.91	1.00	4.93	1	5
Mother responsiveness	332	3.27	.66	3.33	1.00	4.87	1	5
Father responsiveness	332	3.11	.65	3.11	1.00	4.73	1	5
Mother values	332	4.29	.70	4.50	1.13	5.00	1	5
Father values	332	4.20	.81	4.50	1.00	5.00	1	5
Mother interest in school	332	3.51	.71	3.56	1.44	5.00	1	5
Father interest in school	332	3.42	.74	3.42	1.00	5.00	1	5
Mother involvement in school	332	2.85	1.01	2.85	1.00	5.00	1	5
Father involvement in school	332	2.53	.90	2.60	1.00	5.00	1	5
Perceived teacher caring	332	4.31	.74	4.27	1.78	6.33	1	7
Academic press	332	3.34	.75	3.38	1.00	5.00	1	5
Peer adaptive behavior	332	2.14	.55	2.14	.43	4.00	0	4
Peer trouble	332	.84	.73	.71	0.00	4.00	0	4

The scores for each of scales used in the study, with the exception of school engagement and academic efficacy, are presented as mean scores that reflect the original scaling. For each variable, higher scores indicate higher perceptions of the construct being measured. Higher scores for student engagement reflect higher levels of engagement. Academic efficacy is presented as a percentage. Higher scores for academic efficacy represent greater adaptive self-efficacy.

An intercorrelation matrix of the variables was completed to determine the extent to which the variables were related. Table 10 presents results of this analysis.

Table 10

Intercorrelation Matrix of Study Variables

Study Variables	Study Variables [@]							
	1	2	3	4	5	6	7	8
1	–							
2	.32**	–						
3	.35**	.44**	–					
4	-.01	.06	-.02	–				
5	-.02	.06	-.02	.33**	–			
6	.17**	.19**	.19**	-.29**	-.03	–		
7	.06	.12**	.17**	-.01	-.18	.24**	–	
8	.17**	.17**	.23**	.26**	-.02	.27**	.06	–
9	.17**	.13*	.21**	-.01	.28**	.20**	.15**	.42**
10	.04	.18**	.19**	.24**	.11*	.37**	.22**	.52**
11	.01	.12*	.12*	.11*	.29**	.10	.40**	.15**
12	.10	.08	.06	.03	.08	.25**	.20**	.12*
13	.04	.07	.08	-.03	.06	.05	.35**	-.09
14	.24**	.29**	.36**	-.01	.05	.19**	.23**	.15**
15	-.05	.20**	.16**	.07	.10*	.10	.21**	.12*
16	.18**	.32**	.23**	.03	.04	.10	.17**	.07
17	-.10	-.34**	-.21**	-.22**	-.09	-.10	-.08	-.16**

*p < .05; **p < .01

[@]Study variables: 1 Academic Grades; 2 School engagement; 3 Academic Self-efficacy; 4 Mother demandingness; 5 Father demandingness; 6 Mother responsiveness; 7 Father responsiveness; 8 Mother values; 9 Father values; 10 Mother interest in school work; 11 Father interest in school work; 12 Mother involvement in school; 13 Father involvement in school; 14 Perceived teacher caring; 15 Academic Press; 16 Conventional involvement; 17 Peer Trouble

Table 10 (continued)

Intercorrelation Matrix of Study Variables

Study Variables	Study Variables [@]									
	9	10	11	12	13	14	15	16	17	
1										
2										
3										
4										
5										
6										
7										
8										
9	–									
10	.27**	–								
11	.53**	.39**	–							
12	-.01	.37**	.26**	–						
13	.08	.18**	.42**	.55*	–					
14	.17**	.20**	.12*	.12*	.13*	–				
15	.20**	.19**	.19**	.13*	.13*	.23**	–			
16	.14**	.16**	.20**	.20**	.22**	.21**	.11	–		
17	-.05	-.13*	-.08	-.05	-.07	-.20**	-.16**	-.19**	–	

*p < .05; **p < .01

@Study variables: 1 Academic Grades; 2 School engagement; 3 Academic Self-efficacy; 4 Mother demandingness; 5 Father demandingness; 6 Mother responsiveness; 7 Father responsiveness; 8 Mother values; 9 Father values; 10 Mother interest in school work; 11 Father interest in school work; 12 Mother involvement in school; 13 Father involvement in school; 14 Perceived teacher caring; 15 Academic Press; 16 Conventional involvement; 17 Peer Trouble

Academic grades were correlated with school engagement ($r = .32$), academic self-efficacy ($r = .35$), mother responsiveness ($r = .17$), mother values ($r = .17$), father values ($r = .17$), perceived teaching caring ($r = .24$), and conventional involvement ($r = .18$). The correlations with academic grades and the remainder of the independent variables were not statistically significant. The intercorrelations among the other variables were mixed.

Research Questions and Hypotheses

Four research questions and associated hypotheses were developed for this study. Each of these questions was addressed using mediation analysis as described by Baron and Kenny (1986). The following four-step procedure was used to test the hypotheses:

- Step 1: Test the relationship between the predictor and criterion variable. If a statistically significant relationship exists, the analysis will progress to the second step. If the relationship is not statistically significant, the mediation analysis is stopped.
- Step 2: Test the relationship between the predictor and mediating variables. If a statistically significant relationship exists, the analysis progresses to the third step. If the relationship is not statistically significant, the mediation analysis is stopped.
- Step 3: Test the relationship between the mediating variable and the criterion variable. If a statistically significant relationship exists, the analysis progresses to the fourth step. If the relationship is not statistically significant, the mediation analysis is stopped.
- Step 4: Retest the relationship between the predictor and criterion variable, holding the mediating variable constant. If the relationship is not statistically significant, then the mediating variable is mediating the relationship between the predictor variable and the criterion variable. If the relationship is statistically significant, but the amount of variance on the fourth step is smaller than the first step, a partial mediation may be the outcome. In this instance, a Sobel's test is used to

determine if the mediating variable is partially mediating the relationship between the predictor and criterion variables.

All decisions on the statistical significance of the findings were made using a criterion alpha level of .05.

Research question 1: Does an adolescent's academic engagement in school mediate the relationship between parental behaviors and academic grades?

H₁: Academic engagement in school will mediate the relationship between parental behaviors and academic grades.

H₀₁: Academic engagement in school will not mediate the relationship between parental behaviors and academic grades.

A mediating analysis was used to determine if school engagement was mediating the relationship between mother demandingness and academic grades. Table 11 presents results of the mediation analysis.

Table 11

Mediation Analysis: Mediating Role of School Engagement on the Relation between Mother Demandingness and Academic Grades

Predictor	Criterion	R^2	F	Standardized β
<u>Step 1</u>				
Mother demandingness	Academic grades	<.01	.06	-.01NS

* $p < .05$; ** $p < .01$

On the first step of the mediation analysis, mother demandingness was accounting for less than 1% of the variance in academic grades, $\beta = -.01$, $F = 0.06$, $p > .05$. Because of the nonsignificant findings on the first step, the mediation analysis was not continued.

Father demandingness was used as the predictor variance in a mediation analysis, with academic grades used as the criterion variable. School engagement was the mediating variable in this analysis. Table 12 presents results of this analysis.

Table 12

Mediation Analysis: Mediating Role of School Engagement on the Relation between Father Demandingness and Academic Grades

Predictor	Criterion	R^2	F	Standardized β
<u>Step 1</u>				
Father demandingness	Academic grades	<.01	.17	-.02NS

* $p < .05$; ** $p < .01$

The relationship between father demandingness and academic grades, tested on the first step of the mediation analysis, was not statistically significant, $\beta = -.02$, $F = 0.17$, $p > .05$. Based on the nonsignificant finding on the first step, the mediation analysis could not be continued.

A mediation analysis was used to determine if school engagement was mediating the relationship between mother responsiveness and academic achievement. The results of this analysis are presented in Table 13.

Table 13

Mediation Analysis: Mediating Role of School Engagement on the Relation between Mother Responsiveness and Academic Grades

Predictor	Criterion	R^2	F	Standardized β
<u>Step 1</u>				
Mother responsiveness	Academic grades	.03	9.91	.17**
<u>Step 2</u>				
Mother responsiveness	School engagement	.03	11.75	.19**
<u>Step 3</u>				
School engagement	Academic grades	.10	36.83	.32**
<u>Step 4</u>				
School engagement	Academic grades	.10	36.83	.30**
Mother responsiveness		.01	21.04	.12*

Sobel's test = 2.97. $p = .001$ * $p < .05$; ** $p < .01$

On the first step of the mediation analysis, a statistically significant relationship was found between mother responsiveness and academic grades, $\beta = .17$, $F = 9.91$, $p < .001$. The relation between mother responsiveness and school engagement was tested on the second step of the mediation analysis. The relationship between mother responsiveness and school engagement was statistically significant, $\beta = .19$, $F = 11.75$, $p < .001$. The relationship between school engagement and academic grades tested on the third step of the mediation analysis was statistically significant, $\beta = .32$, $F = 36.82$, $p < .001$. On the fourth step of the mediation analysis, the mediating variable, school engagement, was held constant. The standardized beta weight for the relationship between mother responsiveness was reduced from .17 (step 1) to .12 (step 4), $R^2 = .01$, $p = .029$. Sobel's test was used to determine if a mediator variable significantly carries the influence of a predictor variable to a criterion variable (i.e., if the indirect effect of the predictor variable on the dependent variable through the mediator variable is significant). The obtained test statistic of 2.97 ($p = .001$) was statistically significant. This finding provided support that student

engagement was partially mediating the relationship between mother responsiveness and academic grades.

A mediation analysis was used to determine if school engagement was mediating the relationship between father responsiveness and academic grades. Table 14 presents results of this analysis.

Table 14

Mediation Analysis: Mediating Role of School Engagement on the Relation between Father Responsiveness and Academic Grades

Predictor	Criterion	R^2	F	Standardized β
<u>Step 1</u>				
Father responsiveness	Academic grades	<.01	1.03	.06NS

* $p < .05$; ** $p < .01$

The first step of the mediation analysis tested the relationship between father responsiveness and academic grades. The results of this analysis were not statistically significant, $\beta = .06$, $F = 1.03$, $p > 0.5$. Because of the nonsignificant finding on the first step, the mediation analysis could not be continued.

Mother values was used as the predictor variable in a mediation analysis. Academic grades was used as the criterion variable in this analysis, with school engagement used as the mediating variable. Table 15 presents results of this analysis.

Table 15

Mediation Analysis: Mediating Role of School Engagement on the Relation between Mother Values and Academic Grades

Predictor	Criterion	R^2	F	Standardized β
<u>Step 1</u>				
Mother values	Academic grades	.03	9.47	.17**
<u>Step 2</u>				
Mother values	School engagement	.03	9.46	.17**
<u>Step 3</u>				
School engagement	Academic grades	.10	36.83	.32**
<u>Step 4</u>				
School engagement	Academic grades	.10	36.83	.32**
Mother values		.01	21.12	.12*

Sobel's test = 2.73. $p = .003$ * $p < .05$; ** $p < .01$

On the first step of the mediation analysis, mother values was accounting for 3% of the variance in academic grades, $\beta = .03$, $F = 9.47$, $p < .001$. The relationship between mother values and school engagement tested on the second step of the mediation analysis was statistically significant, $\beta = .03$, $F = 9.46$, $p < .001$. The third step of the mediation analysis tested the relationship between school engagement and academic grades. The results of this analysis were statistically significant, $\beta = .10$, $F = 36.83$, $p < .001$. After holding school engagement constant on the fourth step of the mediation analysis, the relationship between mother values and academic grades decreased from .03 (Step 1) to .01 (Step 2), although the analysis remained statistically significant, $\beta = .01$, $F = 21.12$, $p = .026$. To determine if a mediator variable significantly carries the influence of a predictor variable to a criterion variable (i.e., if the indirect effect of the predictor variable on the dependent variable through the mediator variable is significant), Sobel's test was performed. The obtained test statistic of 2.73 ($p = .003$) was statistically significant. This finding provided support that student engagement was partially mediating the relationship between mother values and academic grades.

School engagement was used as the mediating variable in a mediation analysis. The predictor variable was father values, with academic grades used as the criterion variable. Table 16 presents results of this analysis.

Table 16

Mediation Analysis: Mediating Role of School Engagement on the Relation between Father Values and Academic Grades

Predictor	Criterion	R^2	F	Standardized β
<u>Step 1</u>				
Father values	Academic grades	.03	9.07	.16**
<u>Step 2</u>				
Father values	School engagement	.01	5.40	.13*
<u>Step 3</u>				
School engagement	Academic grades	.10	36.83	.32**
<u>Step 4</u>				
School engagement	Academic grades	.10	36.83	.32**
Father values	Academic grades	.02	21.56	.13*

Sobel's test = 2.16. $p = .015$

* $p < .05$; ** $p < .01$

On the first step of the mediation analysis, the relationship between father values and academic grades was statistically significant, $\beta = .03$, $F = 9.07$, $p < .001$. The results of the relationship between father values and school engagement, tested on the second step of the mediation analysis, was statistically significant, $\beta = .01$, $F = 5.40$, $p = .021$. On the third step of the mediation analysis, the relationship between school engagement and academic grades was statistically significant, $\beta = .10$, $F = 36.83$, $p < .001$. After holding the mediating variable, school engagement, constant on the fourth step of the mediation analysis, the relationship between father values and academic grades decreased from .03 (Step 1) to .02 (Step 2), $\beta = .13$, $F = 21.56$, $p < .01$. Sobel's test was used to determine if a mediator variable significantly carries the influence of a predictor variable to a criterion variable (i.e., if the indirect effect of the predictor

variable on the dependent variable through the mediator variable is significant). The obtained test statistic of 2.16 ($p = .015$) was statistically significant. This finding provided support that student engagement was partially mediating the relationship between father values and academic grades.

A mediation analysis was used to determine if school engagement was mediating the relationship between mother's interest in schoolwork and academic grades. Table 17 presents results of this analysis.

Table 17

Mediation Analysis: Mediating Role of School Engagement on the Relation between Mother Interest in Schoolwork and Academic Grades

Predictor	Criterion	R^2	F	Standardized β
<u>Step 1</u>				
Mother's interest in schoolwork	Academic grades	<.01	.43	.04NS

* $p < .05$; ** $p < .01$

The first step of the mediation analysis tested the relationship between mother's interest in schoolwork and academic grades. The results of this analysis were not statistically significant, $\beta = .04$, $F = .43$, $p < .05$. Based on the nonsignificant results on this step, the mediation analysis could not be continued.

Father interest in schoolwork was used as the predictor variable in a mediation analysis. Academic grades was used as the criterion variable, with school engagement used as the mediating variable. Table 18 presents results of this analysis.

Table 18

Mediation Analysis: Mediating Role of School Engagement on the Relation between Father Interest in Schoolwork and Academic Grades

Predictor	Criterion	R^2	F	Standardized β
<u>Step 1</u>				
Father's interest in schoolwork	Academic grades	<.01	.03	.01NS

* $p < .05$; ** $p < .01$

On the first step of the mediation analysis, the relationship between father's interest in school work and academic grades was tested. The results of this analysis were not statistically significant, $\beta = .01$, $F = .03$, $p < .05$. Based on this result, the mediation analysis could not be continued.

Mother involvement in school was used as the predictor variable in a mediation analysis, with academic grades used as the criterion variable. School engagement was used as the mediating variable in this analysis. Table 19 presents results of this analysis.

Table 19

Mediation Analysis: Mediating Role of School Engagement on the Relation between Mother Involvement in School and Academic Grades

Predictor	Criterion	R^2	F	Standardized β
<u>Step 1</u>				
Mother involvement in school	Academic grades	.01	3.26	.10NS

* $p < .05$; ** $p < .01$

One percent of the variance in academic grades was accounted for by mother involvement in school, $\beta = .10$, $F = 3.26$, $p > .05$. Because the relationship between mother involvement in school and academic grades tested on the first step, the mediation analysis could not be continued.

A mediation analysis was used to determine if school engagement was mediating the relationship between father involvement in school and academic grades. Table 20 presents results of this analysis.

Table 20

Mediation Analysis: Mediating Role of School Engagement on the Relation between Father Involvement in School and Academic Grades

Predictor	Criterion	R^2	F	Standardized β
<u>Step 1</u>				
Father involvement in school	Academic grades	<.01	.45	.04NS

* $p < .05$; ** $p < .01$

The relationship between father involvement in school and academic grades was tested on the first step of the mediation analysis. The results of this analysis were not statistically significant, $\beta = .04$, $F = .45$, $p > .05$. Based on the nonsignificant finding on the first step, the mediation analysis could not be continued.

Research Question 2: Does adolescents' school engagement mediate the relationship between teacher behaviors and self-reported academic grades?

H₂: Adolescents' school engagement will mediate the relationship between variations in teacher behaviors and variations in self-reported academic grades.

H₀₂: Adolescents' school engagement will not mediate the relationship between variations in teacher behaviors and variations in self-reported academic grades.

Two mediation analyses were used to test this hypothesis. The first analysis used perceived teacher caring as the predictor variable and self-reported academic grades as the criterion variable. School engagement was used as the mediating variable in this analysis. Table 21 presents this analysis.

Table 21

Mediation Analysis: Mediating Role of School Engagement on the Relation between Perceived Teacher Caring and Academic Grades

Predictor	Criterion	R^2	F	Standardized β
<u>Step 1</u>				
Perceived teacher caring	Academic grades	.06	20.45	.24**
<u>Step 2</u>				
Perceived teacher caring	School engagement	.09	31.06	.29**
<u>Step 3</u>				
School engagement	Academic grades	.10	36.83	.32**
<u>Step 4</u>				
School engagement	Academic grades	.10	36.83	.32**
Perceived teacher caring		.02	23.41	.16**

Sobel's test = 4.07, $p = .015$ * $p < .05$; ** $p < .01$

On the first step of the mediation analysis, perceived teacher caring was accounting for 6% of the variance in academic grades, $\beta = .24$, $F = 20.45$, $p < .01$. The relationship between perceived teacher caring and academic grades, tested on the second step of the mediation analysis was statistically significant, explaining 9% of the variance in academic grades, $\beta = .29$, $F = 31.06$, $p < .01$. On the third step of the mediation analysis, school engagement was accounting for 10% of the variance in academic grades, $\beta = .32$, $F = 36.83$, $p < .01$. After holding the mediating variable, school engagement, constant on the fourth step of the mediation analysis, the relationship between perceived teacher caring and academic grades decreased from .06 (Step 1) to .02 (Step 2), $\beta = .16$, $F = 23.41$, $p < .01$. To determine if the mediation variable was carrying a statistically significant influence of a predictor variable to a criterion variable, (i.e., if the indirect effect of the predictor variable on the dependent variable through the mediator variable is significant) Sobel's test was used. The obtained test statistic of 4.07 ($p = .015$) was statistically significant, providing support that student engagement was partially mediating the relationship between perceived teacher caring and academic grades.

The second mediation analysis used academic press as the predictor variable and self-reported academic grades as the criterion variable. School engagement was used as the mediating variable. Table 22 presents results of this analysis.

Table 22

Mediation Analysis: Mediating Role of School Engagement on the Relation between Academic Press and Academic Grades

Predictor	Criterion	R^2	F	Standardized β
<u>Step 1</u>				
Academic press	Academic grades	>.01	.86	-.05ns

* $p < .05$; ** $p < .01$

The relationship between academic press and self-reported academic grades was tested on the first step of the mediation analysis. The results of this analysis were not statistically significant, $\beta = -.05$, $F = .86$, $p > 0.05$. Because of the lack of a statistically significant relationship on the first step, the mediation analysis could not be continued.

Research Question 3: Does an adolescent's school engagement in school mediate the relationship between peer influence and self-reported academic grades?

H₃: School engagement will mediate the relationship between variations in peer influence and variations in academic grades.

H₀₃: School engagement will not mediate the relationship between variations in peer influence and variations in academic grades.

Two mediation analyses were used to test this hypothesis. The first analysis used school engagement as the mediating variable and conventional involvement as the predictor variable. Self-reported academic grades were used as the criterion variable in this analysis. Table 23 presents results of this analysis.

Table 23

Mediation Analysis: Mediating Role of School Engagement on the Relation between Conventional Involvement and Academic Grades

Predictor	Criterion	R^2	F	Standardized β
<u>Step 1</u>				
Conventional involvement	Academic grades	.03	10.38	.18**
<u>Step 2</u>				
Conventional involvement	School engagement	.10	37.14	.32**
<u>Step 3</u>				
School engagement	Academic grades	.10	36.83	.32**
<u>Step 4</u>				
School engagement	Academic grades	.10	36.83	.32**
Conventional involvement		.01	19.60	.08ns

* $p < .05$; ** $p < .01$

On the first step of the mediation analysis, conventional involvement accounted for 3% of the variance in academic grades, $\beta = .18$, $F = 10.38$, $p < .01$. The relationship between conventional involvement and school engagement, tested on the second step of the mediation analysis, was statistically significant, $\beta = .32$, $F = 37.14$, $p < .01$. School engagement was explaining 10% of the variance in self-reported academic grades on the third step of the mediation analysis, $\beta = .10$, $F = 36.83$, $p < .01$. On the fourth step of the mediation analysis, after holding school engagement constant, the amount of variance in self-reported academic grades that was explained by conventional involvement decreased from .03 (Step 1) to .01 (Step 4), $\beta = .08$, $F = 19.60$, $p < .01$. While the overall analysis was statistically significant, conventional involvement was not a statistically significant predictor of self-reported academic grades. As a result, it appears that school engagement is mediating the relationship between conventional involvement and self-reported academic grades.

The second mediation analysis used to test this hypothesis used peer trouble as the predictor variable and self-reported academic grades as the criterion variable. School

engagement was used in this analysis as the mediating variable. Table 24 presents results of this analysis.

Table 24

Mediation Analysis: Mediating Role of School Engagement on the Relation between Peer Trouble and Academic Grades

Predictor	Criterion	R^2	F	Standardized β
<u>Step 1</u>				
Peer trouble	Academic grades	.01	2.99	-.10ns

* $p < .05$; ** $p < .01$

The relationship between peer trouble and academic grades was tested on the first step of the mediation analysis. One percent of the variance in academic grades was accounted for by peer trouble, $\beta = .01$, $F = 2.99$, $p > .05$. Because of the nonsignificant finding on the first step, the mediation analysis could not be continued.

Research Question 4: Does adolescents' school engagement in school mediate the relationship between academic self-efficacy and grades?

H₄: School engagement will mediate the relationship between academic self-efficacy and academic grades.

Ho₄: School engagement will not mediate the relationship between academic self-efficacy and academic grades.

Students' scores for academic self-efficacy were used as the predictor variable in a mediation analysis and self-reported academic grades were used as the criterion variable in a mediation analysis. School engagement was used as the mediating variable in this analysis. Table 25 presents results of this analysis.

Table 25

Mediation Analysis: Mediating Role of School Engagement on the Relation between Academic Self-efficacy and Academic Grades

Predictor	Criterion	R^2	F	Standardized β
<u>Step 1</u>				
Academic self-efficacy	Academic grades	.12	43.04	.35**
<u>Step 2</u>				
Academic self-efficacy	School engagement	.20	81.19	.44**
<u>Step 3</u>				
School engagement	Academic grades	.10	36.83	.32**
<u>Step 4</u>				
School engagement	Academic grades	.10	36.83	.20**
Academic self-efficacy	Academic grades	.05	30.15	.26**

Sobel's test = 4.94, $p < .001$ * $p < .05$; ** $p < .01$

On the first step of the mediation analysis, academic self-efficacy was accounting for 12% of the variance in self-reported academic grades, $\beta = .35$, $F = 43.04$, $p < .01$. Academic self-efficacy was explaining 20% of the variance in school engagement on the second step of the mediation analysis, $\beta = .44$, $F = 81.19$, $p < .01$. On the third step of the analysis, school engagement was accounting for 10% of the variance in self-reported academic grades, $\beta = .10$, $F = 36.83$, $p < .01$. After holding school engagement constant on the fourth step of the mediation analysis, the amount of variance in self-reported academic grades that was explained by academic self-efficacy decreased from .12 (Step 1) to .05 (Step 4). To determine if the mediation variable was carrying a statistically significant influence of a predictor variable to a criterion variable, (i.e., if the indirect effect of the predictor variable on the dependent variable through the mediator variable is significant) Sobel's test was used. The obtained test statistic of 4.94 ($p < .01$) was statistically significant, providing support that student engagement was partially mediating the relationship between academic self-efficacy and academic grades.

Ancillary Findings

Three stepwise multiple linear regression analyses were used to determine which of the predictor variables could be used to predict or explain three criterion variables: academic grades, school engagement, and academic self-efficacy. Using the correlation matrix (See Table 10), the predictor variables that were significantly related to each of the criterion variables were used in these analyses. Table 26 presents the results of the stepwise multiple linear regression analysis using self-reported academic grades as the criterion variable, and mother responsiveness, mother values, father values, perceived teacher caring, and conventional involvement as predictor variables.

Table 26

Stepwise Multiple Linear Regression Analysis: Self-Reported Academic Grades

Predictor Variable	Constant	b-Weight	β -Weight	Δr^2	t-Value	Sig
Included Variables						
Perceived teacher caring	2.65	.58	.20	.06	3.61	<.001
Mother values		.40	.13	.02	2.39	.017
Conventional involvement		.50	.13	.01	2.32	.021
Excluded Variables						
Mother responsiveness			.10		1.73	.085
Father values			.07		1.27	.204
Multiple R	.30					
Multiple R ²	.09					
F Ratio	10.89					
DF	3, 328					
Sig	<.001					

Three predictor variables, perceived teacher caring, mother values, and conventional involvement entered the stepwise multiple linear regression equation, accounting for 9% of the variance in self-reported academic grades, $F(3, 328) = 10.89, p < .001$. Perceived teacher caring entered the stepwise multiple linear regression equation first explaining 6% of the variance in

academic grades, $\beta = .20$, $r^2 = .06$, $t = 3.61$, $p < .001$. Mother values entered the stepwise multiple linear regression equation, accounting for an additional 2% of the variance in self-reported academic grades, $\beta = .13$, $r^2 = .02$, $t = 2.39$, $p = .017$. Conventional involvement added 1% to the amount of explained variance, $\beta = .13$, $r^2 = .01$, $t = 2.32$, $p = .021$. Each of the three predictor variables was related to self-reported academic grades in a positive direction, indicating that higher academic grades were associated with greater perceived teacher caring, mother values, and conventional involvement. The remaining predictor variables did not enter the stepwise multiple linear regression equation, indicating they were not statistically significant predictors of self-reported academic grades.

The second stepwise multiple linear regression analysis used school engagement as the criterion variable, with mother responsiveness, father responsiveness, mother values, father values, mother interest in school work, father interest in schoolwork, perceived teacher caring, academic press, conventional involvement, and peer trouble used as the predictor variables. Table 27 presents results of this analysis.

Table 27

Stepwise Multiple Linear Regression Analysis: School Engagement

Predictor Variable	Constant	b-Weight	β -Weight	Δr^2	t-Value	Sig
Included Variables						
Peer trouble	17.80	-1.89	-.25	.11	-4.99	<.001
Conventional involvement		2.24	.22	.07	4.42	<.001
Perceived teacher caring		1.33	.18	.04	3.49	.001
Mother responsiveness		.89	.11	.01	2.12	.035
Excluded Variables						
Father responsiveness			-.01		-.12	.904
Mother values			.06		1.19	.233
Father values			.04		.71	.476
Mother interest in schoolwork			.05		.85	.394
Father interest in schoolwork			.03		.52	.602
Academic press			.09		1.86	.064
Multiple R	.48					
Multiple R ²	.23					
F Ratio	24.09					
DF	4, 327					
Sig	<.001					

Twenty-three percent of the variance in school engagement was explained by four predictor variables, peer trouble, conventional involvement, perceived teacher caring, and mother responsiveness, $F(4, 327) = 24.09, p < .001$. Peer trouble entered the stepwise multiple linear regression equation first, accounting for 11% of the variance in school engagement, $\beta = -.25, r^2 = .11, t = -4.99, p < .001$. The negative relationship between school engagement and peer trouble indicated that students who had higher scores for school engagement were less likely to be involved with peers who are involved in troublesome behaviors. Conventional involvement entered the stepwise multiple linear regression equation next, explaining 7% of the variance in school engagement, $\beta = .22, r^2 = .07, t = 4.42, p < .001$. Perceived teacher caring entered the stepwise multiple linear regression equation, accounting for an additional 4% of the variance in school engagement, $\beta = .18, r^2 = .04, t = 3.49, p = .001$. One percent of the variance in school engagement was explained by mother responsiveness, $\beta = .11, r^2 = .01, t = 2.12, p = .035$. The

positive relationships between school engagement and conventional involvement, perceived teacher caring, and mother responsiveness indicated that students who had higher levels of school engagement were more likely to have higher scores for conventional involvement, perceived teacher caring, and mother responsiveness. The remaining predictor variables did not enter the stepwise multiple linear regression equation, indicating that father responsiveness, mother values, father values, mother interest in schoolwork, father interest in schoolwork, and academic press were not statistically significant predictors of school engagement.

The third stepwise multiple linear regression analysis used academic self-efficacy as the criterion variable. The predictor variables in this analysis included mother responsiveness, father responsiveness, mother values, father values, mother interest in schoolwork, father interest in schoolwork, perceived teacher caring, academic press, conventional involvement, and peer trouble. Table 28 presents results of this analysis.

Table 28

Stepwise Multiple Linear Regression Analysis: Academic Self-Efficacy

Predictor Variable	Constant	b-Weight	β -Weight	Δr^2	t-Value	Sig
Included Variables						
Conventional involvement	11.04	6.32	.30	.13	5.87	<.001
Perceived teacher caring		3.82	.17	.03	3.42	.001
Mother values		4.30	.15	.02	2.99	.003
Excluded Variables						
Mother responsiveness			.08		1.54	.124
Father responsiveness			.07		1.32	.188
Father values			.08		1.45	.148
Mother interest in schoolwork			.03		.44	.662
Father interest in schoolwork			.03		.58	.564
Academic press			.06		1.21	.227
Peer trouble			-.10		-1.94	.053
Multiple R	.43					
Multiple R ²	.18					
F Ratio	24.59					
DF	3, 328					
Sig	<.001					

Three predictor variables, conventional involvement, perceived teacher caring, and mother values, entered the stepwise multiple linear regression equation, accounting for 18% of the variance in academic self-efficacy, $F(3,328) = 24.59$, $p < .001$. Conventional involvement entered the stepwise multiple linear regression equation first, accounting for 13% of the variance in academic self-efficacy, $\beta = .30$, $r^2 = .13$, $t = 5.87$, $p < .001$. An additional 3% of the variance in academic self-efficacy was accounted for by perceived teacher caring, $\beta = .17$, $r^2 = .03$, $t = 3.42$, $p = .001$. Mother values entered the stepwise multiple linear regression equation, explaining 2% of the variance in academic self-efficacy, $\beta = .15$, $r^2 = .02$, $t = 2.99$, $p = .003$. The positive relationships between academic self-efficacy and conventional involvement, perceived teacher caring, and mother values indicated that students with higher levels of academic self-efficacy tended to have higher scores for conventional involvement, perceived teacher caring, and mother values. The remaining predictor variables, mother responsiveness, father responsiveness, father

values, mother interest in schoolwork, father interest in schoolwork, academic press, and peer trouble, did not enter the stepwise multiple linear regression equation, indicating they were not statistically significant predictors of academic self-efficacy.

Summary

Chapter 4 has presented the results of the statistical analyses that were used to describe the sample and answer the research questions. The conclusions and recommendations based on these findings can be found in Chapter 5.

CHAPTER 5

DISCUSSION

The goal of the present study was to determine if school engagement had a mediating influence on the relationships between variables associated with an adolescent's contextual environment and academic performance in school. Specifically, this study investigated the extent to which school engagement mediated the effects that known academic performance influencing variables (e.g., perceived parental behaviors, perceived teacher behaviors, perceived peer behaviors, and academic self-efficacy) had on an adolescent's self-reported grades.

Though research has identified variables that are significantly correlated with an adolescent's self-reported grades, the model for this study suggested that an adolescent's academic performance in school (e.g., self-reported grades) follows an indirect route. Specifically, this study hypothesized that school engagement was a mediator between mother demandingness, father demandingness, mother responsiveness, father responsiveness, mother values towards education, father values towards education, mother involvement in school, father involvement in school, mother interest in schoolwork, father interest in schoolwork, teacher caring, teacher academic expectations, peer adaptive behaviors, peer troublesome behaviors, and academic self-efficacy on an adolescent's self-reported grades. Furthermore, this study was also to determine the most important variable that can predict academic grades, school engagement, and academic self-efficacy, respectively.

Description of the Participants

A total of 332 high school students participated in the study. Of this number, 159 (49.2%) were male and 164 (50.8%) were female. The average age of the students was 16.5 years. Most students ($n = 155$, 47.0%) reported their ethnicity as Caucasian, with 63 (19.1%) indicating they

were of Middle Eastern descent. Fifty (15.2%) African Americans, 32 (9.7%) Asian/Pacific Islanders, 3 (0.9%) Hispanics, 5 (1.5%) multi-ethnic, and 22 (6.6%) students participated in the study. The students were in the ninth ($n = 78$, 23.8%), tenth ($n = 23$, 7.0%), eleventh ($n = 36$, 11.0%) and twelfth grades ($n = 191$, 58.2%). The students self-reported their overall grades in school.

The greatest number of students were living with two caregivers (e.g. mother/mother-like figure, father/father-like figure) at home ($n = 259$, 78.5%), followed by students who were living with only one caregiver ($n = 71$, 21.5%). Most students reported that both their mother/mother-like figure (218, 71.5%) and father/father-like figure (255, 86.7%) were employed. Eighty-seven (28.5%) reported that their mother/mother-like figure was unemployed and 39 (13.3%) indicated their father/father-like figure was unemployed. Results also showed that most of the mother/mother-like figures had completed high school (101, 31.1%) with 96 (29.5%) having completed some college and 86 (26.5%) being college graduates. Twenty-nine (8.9%) of mother/mother-like figures were reported to have a middle-school education, 6 (1.8%) an elementary school education, and 7 (2.2%) had no education at all. Father/father-like figures showed a similar pattern in educational attainment. Most were high school graduates (112, 35.8%), 70 (22.3%) had some college education, 89 (28.3%) graduated from college, 27 (8.6%) had a middle school education, 8 (2.5%) had only been to elementary school, while 8 (2.5%) had never been to school.

Research Questions and Hypotheses

Four research questions and associated hypotheses were developed for the study. Each of these questions was addressed using inferential statistical analyses, with all decisions on the statistical significance made using a criterion alpha level of .05.

Research question 1: Does an adolescent's academic engagement in school mediate the relationship between parental behaviors and grades?

H₁: Adolescents' school engagement will mediate the relationship between variations in parental behaviors and variations in self-reported grades.

H₀₁: Adolescents' school engagement will not mediate the relationship between variations in parental behaviors and variations in self-reported grades.

A mediation analysis was used to determine if school engagement was mediating the relationship between parental behaviors and self-reported academic grades. Results indicated that mother demandingness and father demandingness were not significantly related to academic grades. Therefore, mediational analyses could not be completed based on the criteria set forth by Baron and Kenny (1986). This also was true for father responsiveness, mother's interest in schoolwork, father's interest in schoolwork, mother's involvement in school, and father's involvement in school. The non-significant findings mentioned above are not consistent with previous research. This may be due to external validity issues of the previous research which impedes generalizability to the sample in this study. However, school engagement was found to be partially mediating the relationship between mother responsiveness, mother values towards education, and father's values towards education, respectively, on academic grades.

The majority of students were living in two-parent households with both parents employed. The educational levels of the parents generally were high school graduates and some college. These factors may have played a part in the results of the first hypotheses regarding parent behaviors. Parents who are working and have responsibilities associated with raising a family may not have time to be fully involved in their children's schools. However, they may have instilled their value systems into their children which accounts for school engagement

partially mediating the relationships between both mother and father values with self-reported academic achievement. Research has found that adolescents' school performance is directly related to their parent's values and expectations (Jodl, Michael, Malanchuk, Eccles, & Sameroff, 2001). Parents who encourage success in school set higher standards for their child's school performance and homework. They also have higher aspirations for their child. This has been found to contribute to school success (Luthar et. al., 2006). Parents who encourage success in school also hold values that are consistent with doing well in school, and they exhibit this by structuring their home environment to support the messages that children receive from their teachers (Benner Graham, & Mistry, 2008). Furthermore, it was found that more fathers than mothers were employed in this study, implying that these fathers are away from home and may not be accessible to the adolescents. These factors may explain why school engagement partially mediated the relationship between mother responsiveness and self-reported academic achievement but did not with respect to father responsiveness and self-reported academic achievement. Thus, more mothers are available to respond adaptively to the adolescent and encourage good student outcomes to the adolescent.

Research question 2: Does an adolescent's academic engagement in school mediate the relationship between teacher behaviors and grades?

H₂: Adolescents' school engagement will mediate the relationship between variations in teacher behaviors and variations in self-reported academic grades.

Ho₂: Adolescents' school engagement will not mediate the relationship between variations in teacher behaviors and variations in self-reported academic grades.

A mediation analysis was used to determine if school engagement was mediating the relationship between teacher behaviors and self-reported academic grades. Results showed that

the relationship between academic press (teacher expectations) and academic grades were not statistically significant. Therefore, the mediational analysis could not be completed based on the criteria set forth by Baron and Kenny (1986). However, the mediational analysis performed on perceived teacher caring and academic grades found school engagement to be partially mediating this relationship.

The majority of students were in the 12th grade. Older adolescents tend to seek greater autonomy from authority figures, but still value their opinions (Steinberg, 2014). This factor may have played a part in the results of the second hypotheses regarding teaching behaviors. Older adolescents may not want to feel like they are obligated to follow the instructions of a superior. Instead, it is possible that these adolescents value the teacher as a responsive and caring facilitator which may account for school engagement partially mediating the relationship between teacher caring with self-reported academic achievement.

Research question 3: Does an adolescent's academic engagement in school mediate the relationship between peer influence and grades?

H₃: School engagement will mediate the relationship between variations in peer influence and variations in academic grades.

H₀₃: School engagement will not mediate the relationship between variations in peer influence and variations in academic grades.

A mediation analysis was used to determine if school engagement was mediating the relationship between peer behaviors and self-reported academic grades. Results showed that the relationship between peer troublesome behaviors and academic grades were not statistically significant. Therefore, the mediational analysis could not be completed based on the criteria set forth by Baron and Kenny (1986). However, the mediational analysis performed on peer

conventional involvement and academic grades found school engagement to be fully mediating this relationship.

A possible explanation to these findings may be that peers feel that they can relate to each other. Generally, they are in the same grade and of the same age. Therefore, they are going through similar experiences and challenges in school. An adolescent who has friends who engage in adaptive, prosocial/pro-educational behaviors is more likely to want to be in school and do well in school as well. The situation is vice versa for adolescents with friends who engage in maladaptive, antisocial/anti-educational behaviors. Recent research supports this explanation (Lynch, Lerner, & Leventhal, 2013). However, it is possible that external validity issues of the previous research may have influenced complete generalizability to the present study. This may explain the non-significant relationship between peer troublesome behaviors and academic grades and why school engagement mediated the relationship between peer conventional involvement and academic grades.

Research question 4: Does an adolescent's academic engagement in school mediate the relationship between academic self-efficacy and grades?

H₄: Variations in academic self-efficacy will significantly account for variations in grades when school engagement is a mediator.

H₀₄: Variations in academic self-efficacy will NOT significantly account for variations in grades when school engagement is a mediator.

A mediation analysis was used to determine if school engagement was mediating the relationship between academic self-efficacy and self-reported academic grades. Results showed that the relationship between academic self-efficacy and academic grades was statistically significant. This is consistent with previous research (Bong, 2008). Efficacy beliefs relate to the

internal, psychological beliefs of an individual. Those with high efficacy beliefs believe they can execute a course of action. In this case, the type of efficacy is academic. High academic self-efficacy is likely to increase an individual's engagement in school possibly due to the individual believing he or she can do it. Once engaged in school, an adolescent is likely to earn good grades because of the effort put forth (Williams & Williams, 2010). This may explain why school engagement partially mediated the relationship between academic self-efficacy and grades.

Ancillary Findings

Three stepwise multiple linear regression analyses were used to determine which of the predictor variables could be used to predict or explain three criterion variables: academic grades, school engagement, and academic self-efficacy. Using the correlation matrix (See Table 10), the predictor variables that were significantly related to each of the criterion variables were used in these analyses.

Self-Reported Academic Grades. Perceived teacher caring contributed the most towards self-reported academic grades. Although it accounted for only 6% of the variance, this variable is the most significant variable in predicting self-reported academic grades for students in this study. This finding is in agreement with previous research. In a sample of 131 high school students Miller (2010) found that teacher caring had a statistically significant relationship with academic grades as well.

School Engagement. Peer influence contributed the most towards school engagement. Peer trouble accounted for most of the variance in a negative direction. The negative relationship between school engagement and peer trouble indicated that students who had higher scores for school engagement were less likely to be involved with peers who are involved in troublesome behaviors. Conventional involvement followed peer troublesome behaviors in statistical

significance with school engagement. This relationship was in a positive direction which indicates that students who had higher scores for being with good friends also were more likely to have good grades. In a longitudinal study of 1,718 students Lynch, Lerner, and Leventhal (2013) found that both positive and negative peer behaviors had significant relationships with their respective positive and negative outcomes on school engagement.

Academic Self-Efficacy. Peer conventional involvement was the most important variable that contributed towards academic self-efficacy in this study. It accounted for 13% of the variance. This suggests that having friends who are engaging in adaptive behaviors is likely to have a positive effect on an adolescent in the way of promoting higher efficacy beliefs for learning. Kiran-Esen (2012) found similar results. In a sample of 546 high school students the researcher found that peer influence was significantly related to academic self-efficacy.

Conclusion

The findings of the present study suggested that adolescents whose parents exhibited a responsive, caring attitude towards their adolescent and his or her education were more engaged in school, had higher academic self-efficacy, had better friends, and subsequently better grades. This parental behavior may transfer to the teacher successfully being able to enforce structure in the classroom to engage students because of the parents' adaptive behaviors and attitudes towards their children. Students in this study accepted the teachers' authority due to the parents instilling the value and importance of an education into the student.

Triadic reciprocal determinism states that there are multiple influences on how a person acts in any given situation. In this respect the learning context is composed of the environment (e.g., parents, teachers, and peers), the psychological characteristics of the person (e.g., efficacy beliefs), and the individual's behavior (e.g., school engagement and grades). All three of these

factors interact with each other and are interdependent (Bandura, 1986, 1997). Therefore, it is simplistic and erroneous to attribute the academic success or failure of an adolescent to a specific factor. It is more appropriate to understand the mentioned phenomenon as a complex, reciprocal interaction between numerous factors.

Implications and Recommendations

The findings of the current study have made it evident that multiple factors in the adolescent's life, such as parents, teachers, peers, and personal beliefs about the possibility of success, contribute to student engagement in school and subsequent academic performance. The most important contributors to academic grades were perceived teacher caring, mother values, and conventional involvement. The greatest influences on school engagement were peer trouble, conventional involvement, perceived teacher caring, and mother responsiveness. Academic self-efficacy was most significantly influenced by conventional involvement, perceived teacher caring, and mother values. Caretakers of adolescents need to be aware of the multifactorial nature related to an adolescent's academic success.

Several suggestions for educators and parents were derived from the findings of the present study. When identifying interventions for adolescent success, parenting behaviors, teacher behaviors, and peer influence should be considered. Parents need to exhibit a genuine interest in the well-being of their adolescent, along with engaging in a noncoercive effort to instill adaptive values related to education. This type of parenting includes providing the structure to assist the adolescent in meeting his or her academic expectations. Parents also need to be actively involved in their child's social life.

Teachers need to work on engaging students more proactively by communicating high expectations for all students and be firm in their expectations that all students perform at their

highest level in their classes. This includes promoting students' self-efficacy for learning with the understanding that failure provides an opportunity to learn as well. It is also important that teachers are sensitive to their students' needs. If a student believes that his or her teacher cares about him or her, it is more likely that the student will approach the teacher when the need arises. Teachers should also attempt to foster adaptive learning relationships between students through tasks such as groupwork that requires students to collaborate on projects after school. This may help the teacher's students develop quality friendships. Parents and teachers who work collaboratively together can help adolescents become effective students and become fully engaged in school.

Limitations and Recommendations for Further Research

Several limitations of this study require discussion. First, while every effort was made by the researcher to ensure confidentiality, students completed the surveys at desks or tables in full classrooms. The students were fully aware that they were in a research study. This limitation may have influenced the adolescent's ability to self-disclose completely and be totally honest. This would in turn give us an inaccurate result of the actual situation. Campbell and Stanley state that this situation presents a threat to external validity, which is the generalizability of the study, due to the reactive effects of experimental arrangements (as cited in Kerlinger & Lee, 2000, pp. 477-478). Consequently, the findings should be interpreted with this limitation in mind.

This study could be replicated by having students complete a computer-based survey. They would be completing the survey separately and would not be able to discuss their responses with other students. The students, in using a computer, may feel their responses would be anonymous and provide answers that reflect their true feelings.

Second, the data were collected from a single, public, suburban high school in the Midwestern United States using a convenience sample. This limitation does not allow generalization to other types of schools that may vary in size, geographic location (urban or rural), and affiliation (private or public). Campbell and Stanley posit this as a threat to external validity due to selection bias (as cited in Kerlinger & Lee, 2000, p. 477). Future research could focus on collecting data from adolescents in several different types of high schools. Related to this was the fact that 19% of the sample was of Middle Eastern descent, which may not be generalizable to the broader population in the United States.

Third, this study used self-report measures as the method of data collection. No other method of data collection was used. It is possible that the measures used in this study didn't accurately reflect the constructs in the study. For example, the reliability coefficient of the Perceived Teacher Caring scale in this study was .57. There were also seven instruments that students had to complete. It is possible that some of the students in this study may have been felt fatigued while proceeding to complete the later measures in their packet. This may have influenced the accurate completion of each instrument. The low reliability of instruments and fatigue related to instrument completion are threats to the internal validity of this study known as instrumentation (Kerlinger & Lee, 2000). Furthermore, future researchers may want to obtain matched samples of parents' and/or teachers' perceptions along with the students' own perceptions in the effort of having a more comprehensive set of findings.

Finally, the ancillary findings suggest that there are other variables not included in this study that contribute towards academic grades, school engagement, and academic self-efficacy. This is evident due to the predictor variables in this study accounting for such a small portion of the variance in relation to these criterion variables, respectively. Future research may investigate

other predictor variables to find which one or more explains most of the variance of the criterion variables in this study.

APPENDIX A**SURVEYS**

Demographic Questionnaire

Please circle what grade you are currently in: 9 10 11 12

Please circle your gender: Male Female

Please indicate your age: _____

Please circle the grade you most often get in school:

A A-/B+ B+/B B/B- B-/C+ C+/C C/C- C-/D+ D+/D D/D- E

Please circle/indicate your ethnicity:

Caucasian Middle Eastern African-American Asian Hispanic Multiethnic
Other: _____

Please circle the number of parents or parent-like figures you have at home:

1 2

Please circle the employment status of your parents/parent-like figures:

Mother: Employed Unemployed Father: Employed Unemployed

Please circle the amount of schooling your parents/parent-like figures have completed:

Mother:

Father:

None

None

Elementary School

Elementary School

Middle School

Middle School

High School

High School

Some College

Some College

Graduated College

Graduated College

School Engagement Questionnaire

Please answer the following 4 questions about your MATH classes. Circle your response.

1.) How much time do you put into homework each week, including reading assignments?

- 1 = None
- 2 = About 15 Minutes
- 3 = About 30 Minutes
- 4 = About an hour
- 5 = About 2 or 3 hours
- 6 = About 4 hours or more

2.) How often do you cut (an unexcused absence) each of these classes?

- 1 = Almost everyday
- 2 = Once or twice a week
- 3 = A few times a month
- 4 = A few times a year
- 5 = Never cut

3.) How often do you really pay attention during each of these classes?

- 1 = Never
- 2 = Seldom
- 3 = Fairly often
- 4 = Usually
- 5 = Always

4.) How often does your mind wander in each of these classes?

- 1 = Always
- 2 = Usually
- 3 = Fairly often
- 4 = Seldom
- 5 = Never

Please answer the next 4 questions about your ENGLISH classes. Circle your response.

5.) How much time do you put into homework each week, including reading assignments?

- 1 = None
- 2 = About 15 Minutes
- 3 = About 30 Minutes
- 4 = About an hour
- 5 = About 2 or 3 hours
- 6 = About 4 hours or more

6.) How often do you cut (an unexcused absence) each of these classes?

- 1 = Almost everyday
- 2 = Once or twice a week
- 3 = A few times a month
- 4 = A few times a year

5 = Never cut

7.) How often do you really pay attention during each of these classes?

1 = Never 2 = Seldom 3 = Fairly often 4 = Usually 5 = Always

8.) How often does your mind wander in each of these classes?

1 = Always 2 = Usually 3 = Fairly often 4 = Seldom 5 = Never

Self-Efficacy for Learning Form

Using the scale provided, for each item, please indicate how you typically are.
There is no right or wrong answer.

Definitely Can't Do It	Probably Can't Do It	<u>Maybe</u>	Probably Can Do It	Definitely Can Do It						
0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
___	1.	When you miss a class, can you find another student who can explain the lecture notes as clearly as your teacher did?								
___	2.	When your teacher's lecture is very complex, can you write an effective summary of your original notes before the next class?								
___	3.	When a lecture is especially boring, can you motivate yourself to keep good notes?								
___	4.	When you had trouble understanding your instructor's lecture, can you clarify the confusion before the next class meeting by comparing notes with a classmate?								
___	5.	When you have trouble studying your class notes because they are incomplete or confusing, can you revise and rewrite them clearly after every lecture?								
___	6.	When you are taking a course covering a huge amount of material, can you condense your notes down to just the essential facts?								
___	7.	When you are trying to understand a new topic, can you associate new concepts with old ones sufficiently well to remember them?								
___	8.	When another student asks you to study together for a course in which you are experiencing difficulty, can you be an effective study partner?								
___	9.	When problems with friends and peers conflict with schoolwork, can you keep up with your assignments?								
___	10.	When you feel moody or restless during studying, can you focus your attention well enough to finish your assigned work?								
___	11.	When you find yourself getting increasingly behind in a new course, can you increase your study time sufficiently to catch up?								
___	12.	When you discover that your homework assignments for the semester are much longer than expected, can you change your other priorities to have enough time for studying?								

- ___ 13. When you have trouble recalling an abstract concept, can you think of a good example that will help you remember it on the test?
- ___ 14. When you have to take a test in a school subject you dislike, can you find a way to motivate yourself to earn a good grade?
- ___ 15. When you are feeling depressed about a forthcoming test, can you find a way to motivate yourself to do well?
- ___ 16. When your last test results were poor, can you figure out potential questions before the next test that will improve your score greatly?
- ___ 17. When you are struggling to remember technical details of a concept for a test, can you find a way to associate them together that will ensure recall?
- ___ 18. When you think you did poorly on a test you just finished, can you go back to your notes and locate all the information you had forgotten?
- ___ 19. When you find that you had to “cram” at the last minute for a test, can you begin your test preparation much earlier so you won’t need to cram the next time?

Parenting Style and Parental Involvement Questionnaire

Using the scale below, for each item, pick the number that best describes your:
MOTHER or MOTHER-LIKE FIGURE (Demandingness)

1	2	3	4	5
Very Unlike	More Unlike Than Like	Neither Like Nor Unlike	More Like Than Unlike	Very Like

1. My mother has rules for me about watching TV. _____
2. I would describe my mother as a strict parent. _____
3. It is okay with my mother if I do not follow certain rules. _____
4. When I do something that is wrong, my mother usually does not punish me. _____
5. I think my mother disciplines me a lot. _____
6. My mother usually wants to know where I am going. _____
7. My mother gives me a lot of freedom. _____
8. My mother makes most of the decisions about what I am allowed to do. _____
9. My mother gives me chores to do around the house routinely. _____
10. My mother lets me do pretty much what I want without questioning my decisions. _____
11. My mother rarely gives me orders. _____
12. My mother has few rules for me to follow. _____
13. My mother expects me to be home at a certain time after school or in the evening. _____
14. It does not really matter to my mother whether or not I do assigned chores. _____
15. My mother sometimes tells me that her decisions should not be questioned. _____

Using the scale below, for each item, pick the number that best describes your:
FATHER or FATHER-LIKE FIGURE (Demandingness)

1	2	3	4	5
Very Unlike	More Unlike Than Like	Neither Like Nor Unlike	More Like Than Unlike	Very Like

1. My father has rules for me about watching TV. _____
2. I would describe my father as a strict parent. _____
3. It is okay with my father if I do not follow certain rules. _____
4. When I do something that is wrong, my father usually does not punish me. _____
5. I think my father disciplines me a lot. _____
6. My father usually wants to know where I am going. _____
7. My father gives me a lot of freedom. _____
8. My father makes most of the decisions about what I am allowed to do. _____
9. My father gives me chores to do around the house routinely. _____
10. My father lets me do pretty much what I want without questioning my decisions. _____
11. My father rarely gives me orders. _____

12. My father has few rules for me to follow. _____
13. My father expects me to be home at a certain time after school or in the evening. _____
14. It does not really matter to my father whether or not I do assigned chores. _____
15. My father sometimes tells me that his decisions should not be questioned. _____

Using the scale below, for each item, pick the number that best describes your:
MOTHER or MOTHER-LIKE FIGURE (Responsiveness)

1	2	3	4	5
Very Unlike	More Unlike Than Like	Neither Like Nor Unlike	More Like Than Unlike	Very Like

1. My mother sometimes criticizes me for what I do. _____
2. My mother expects me to tell her when I think a rule is unfair. _____
3. My mother encourages me to look at both sides of an issue. _____
4. It is hard for my mother to admit that sometimes I know more than she does. _____
5. My mother does not think that I should help with decisions in our family. _____
6. My mother encourages me to talk with her about things. _____
7. My mother does not believe that she should have her own way all the time anymore than she believes I should have mine. _____
8. My mother would rather I not tell her my troubles. _____
9. My mother expects me to do what she says without having to tell me why. _____
10. My mother seldom praises me for doing well. _____
11. My mother believes I have a right to my own point of view. _____
12. My mother takes an interest in my activities. _____
13. My mother encourages me to talk to her honestly. _____
14. My mother usually tells me the reasons for rules. _____
15. My mother does not believe I should have a say in making rules. _____

Using the scale below, for each item, pick the number that best describes your:
FATHER or FATHER-LIKE FIGURE (Responsiveness)

1	2	3	4	5
Very Unlike	More Unlike Than Like	Neither Like Nor Unlike	More Like Than Unlike	Very Like

1. My father sometimes criticizes me for what I do. _____
2. My father expects me to tell him when I think a rule is unfair. _____
3. My father encourages me to look at both sides of an issue. _____
4. It is hard for my father to admit that sometimes I know more than he does. _____
5. My father does not think that I should help with decisions in our family. _____
6. My father encourages me to talk with his about things. _____
7. My father does not believe that he should have his own way all the time anymore than he believes I should have mine. _____

8. My father would rather I not tell him my troubles. _____
9. My father expects me to do what he says without having to tell me why. _____
10. My father seldom praises me for doing well. _____
11. My father believes I have a right to my own point of view. _____
12. My father takes an interest in my activities. _____
13. My father encourages me to talk to him honestly. _____
14. My father usually tells me the reasons for rules. _____
15. My father does not believe I should have a say in making rules. _____

Using the scale below, for each item, pick the number that best describes your:
MOTHER or MOTHER-LIKE FIGURE (Values toward achievement)

1	2	3	4	5
Very Unlike	More Unlike Than Like	Neither Like Nor Unlike	More Like Than Unlike	Very Like

1. My mother tries to get me to do my best on everything I do. _____
2. My mother thinks that education is a very important part of adolescence. _____
3. My mother usually sets high standards for me to meet. _____
4. My mother thinks I should go to college. _____
5. Hard work is very important to my mother. _____
6. My mother has high aspirations for my future. _____
7. My mother thinks that getting ahead in life is very important. _____
8. My mother does not think I should be concerned about what kind of career I may have. _____

Using the scale below, for each item, pick the number that best describes your:
MOTHER or MOTHER-LIKE FIGURE (Interest in schoolwork)

1	2	3	4	5
Very Unlike	More Unlike Than Like	Neither Like Nor Unlike	More Like Than Unlike	Very Like

1. My mother seldom looks at my tests and papers from school. _____
2. It does not really matter to my mother what grades I get. _____
3. My mother thinks homework is a very important part of school. _____
4. When I get poor grades, my mother encourages me to try harder. _____
5. My mother makes sure that I have done my homework. _____
6. My mother usually knows the grades I get. _____
7. My mother does not think that she should help me with my homework. _____
8. When I get poor grades, my mother offers help. _____
9. When I ask for help with homework, my mother usually gives it to me. _____

Using the scale below, for each item, pick the number that best describes your:
MOTHER or MOTHER-LIKE FIGURE (Involvement in school functions)

1	2	3	4	5
Very Unlike	More Unlike Than Like	Neither Like Nor Unlike	More Like Than Unlike	Very Like

1. My mother usually goes to parent-teacher conferences. _____
2. My mother is not involved in school programs for parents. _____
3. My mother sometimes does volunteer work at my school. _____
4. My mother usually does not go to school functions. _____
5. My mother usually goes to activities in which I am involved at school. _____

Using the scale below, for each item, pick the number that best describes your:
FATHER or FATHER-LIKE FIGURE (Values toward achievement)

1	2	3	4	5
Very Unlike	More Unlike Than Like	Neither Like Nor Unlike	More Like Than Unlike	Very Like

1. My father tries to get me to do my best on everything I do. _____
2. My father thinks that education is a very important part of adolescence. _____
3. My father usually sets high standards for me to meet. _____
4. My father thinks I should go to college. _____
5. Hard work is very important to my father. _____
6. My father has high aspirations for my future. _____
7. My father thinks that getting ahead in life is very important. _____
8. My father does not think I should be concerned about what kind of career I may have. _____

Using the scale below, for each item, pick the number that best describes your:
FATHER or FATHER-LIKE FIGURE (Interest in schoolwork)

1	2	3	4	5
Very Unlike	More Unlike Than Like	Neither Like Nor Unlike	More Like Than Unlike	Very Like

1. My father seldom looks at my tests and papers from school. _____
2. It does not really matter to my father what grades I get. _____
3. My father thinks homework is a very important part of school. _____
4. When I get poor grades, my father encourages me to try harder. _____
5. My father makes sure that I have done my homework. _____
6. My father usually knows the grades I get. _____
7. My father does not think that he should help me with my homework. _____

8. When I get poor grades, my father offers help. _____
 9. When I ask for help with homework, my father usually gives it to me. _____

Using the scale below, for each item, pick the number that best describes your:
 FATHER or FATHER-LIKE FIGURE (Involvement in school functions)

1	2	3	4	5
Very Unlike	More Unlike Than Like	Neither Like Nor Unlike	More Like Than Unlike	Very Like

1. My father usually goes to parent-teacher conferences. _____
 2. My father is not involved in school programs for parents. _____
 3. My father sometimes does volunteer work at my school. _____
 4. My father usually does not go to school functions. _____
 5. My father usually goes to activities in which I am involved at school. _____

Perceived Teacher Caring scale

Using the scale below, for each item, indicate how you feel about your teacher by circling a number.

1 & 7 = Very Strong Feeling

2 & 6 = Strong Feeling

3 & 5 = Weak Feeling

4 = Undecided

1.) Cares about me	1	2	3	4	5	6	7	Doesn't care about me
2.) Has my interest at heart	1	2	3	4	5	6	7	Doesn't have my interest at heart
3.) Self-centered	1	2	3	4	5	6	7	Not self-centered
4.) Concerned with me	1	2	3	4	5	6	7	Not concerned with me
5.) Insensitive	1	2	3	4	5	6	7	Sensitive
6.) Understanding	1	2	3	4	5	6	7	Not understanding
7.) Unresponsive	1	2	3	4	5	6	7	Responsive
8.) Understands how I feel	1	2	3	4	5	6	7	Doesn't understand how I feel
9.) Doesn't understand how I think	1	2	3	4	5	6	7	Understands how I think

Academic Press scale

Using the scale below, for each item, select the number that is most true. Write your answer in the space after each item.

1	2	3	4	5
Not at all true		Somewhat true		Very true

1. When I've figured out how to do a problem, my teacher gives me more challenging problems to think about. _____
2. My teacher presses me to do thoughtful work. _____
3. My teacher asks me to explain how I get my answers. _____
4. When I'm working out a problem, my teacher tells me to keep thinking until I really understand. _____
5. My teacher doesn't let me do just easy work, but makes me think. _____
6. My teacher makes sure that the work I do really makes me think. _____
7. My teacher accepts nothing less than my full effort. _____

Peer Influence Questionnaire

Conventional involvement

Using the scale below, for each item, pick the number that best describes your FRIENDS.

0	1	2	3	4
None	A few	Some	Most	All

1. How many of your friends like to play sports? _____
2. How many of your friends get all good grades at school? _____
3. How many of your friends like school? _____
4. How many of your friends do homework after school at night? _____
5. How many of your friends want to go to college? _____
6. How many of your friends are in clubs or other organizations such as scouts? _____
7. How many of your friends like to read books after school? _____

Peer trouble

Using the scale below, for each item, pick the number that best describes your FRIENDS.

0	1	2	3	4
None	A few	Some	Most	All

1. How many of your friends do things that might get them into trouble with the law? _____
2. How many of your friends have ever used a weapon (like a gun, knife, or club) in a serious fight? _____
3. How many of your friends have been in trouble with the police because of alcohol or drugs? _____
4. How many of your friends have quit or want to quit school? _____
5. How many of your friends have damaged other peoples' property on purpose? _____
6. How many of your friends have ever been stopped or picked up by the police? _____
7. How many of your friends do things that might get them into trouble at school? _____

APPENDIX B

PARENT INFORMATION SHEET

Parental Permission/Research Informed Consent/Information Sheet

Title of Study: The mediating influence of school engagement between an adolescent's contextual environment and academic accomplishment.

Purpose:

You are being asked to allow your child to be in a research study at High School to see how an adolescent's environment at home and in school can affect academic achievement. Your child has been selected because s/he is an adolescent attending high school. The estimated number of study participants to be enrolled is 250 students in grades nine through twelve. The knowledge gained by this study will improve our understanding of how to foster academic success. The results will be used as part of a doctoral dissertation at Wayne State University, College of Education, Department of Educational Psychology. Please read this form and ask any questions you may have before agreeing to allow your child to be in the study.

This study is being conducted by Najim Ahmed, M.Ed., Doctoral Candidate in the College of Education from Wayne State University.

Study Procedures:

If you decide to allow your child to take part in the study, your child will initially have the study explained to him/her and be given the opportunity to agree to participate. If your child agrees as well, he/she will be asked to fill out a packet of the following seven surveys:

1. A short demographic questionnaire, including questions about the grades he/she typically receives in school.
(For example: age, gender, grade in school)
2. A questionnaire about behaviors related to school engagement
(e.g., "How much time do you put into homework each week, including reading assignments?")
3. A questionnaire about academic self-efficacy
(e.g., "When a lecture is especially boring, can you motivate yourself to keep good notes?")
4. A questionnaire about a student's beliefs regarding teacher academic expectations
(e.g., "My teacher presses me to do thoughtful work.")
5. A questionnaire about a student's belief's regarding his/her teacher's being responsive to him/her
(e.g., "My teacher understands how I think.")

6. A questionnaire about a student's beliefs regarding his/her parents expectations for achievement
(e.g., "My mother tries to get me to do my best on everything I do.")
7. A questionnaire about peer influence
(e.g., "How many of your friends like school?")

Your child's participation in the study will take approximately one class period (60 minutes) and will be conducted during the school day. Students will have the option to refuse to participate at any time.

After completing the surveys, no further information is needed from your child. Copies of the surveys are available for review at the main office. They may also be requested by contacting Mr. Ahmed at the information below.

Benefits: There may be no direct benefits for your child; however, information from this study may benefit other people now or in the future.

Risks: By taking part in this study, your child may experience the following risks:

1. Some students may perceive a loss of confidentiality due to their participation with other students in their classes. This situation can be controlled by cautioning the students not to discuss their survey responses among other participating students or with students who did not participate in the study.
2. In the unlikely event that some students experience negative reactions or feelings from their participation in the study, those students will be seen by the school counselor.

Costs: There are no costs to you or your child to participate in this study.

Compensation: You or your child will not be paid for taking part in this study.

Confidentiality:

- All information collected about your child during the course of this study will be kept without any identifiers.

Voluntary Participation /Withdrawal:

Your child's participation in this study is voluntary. You are free to withdraw your child at any time. Your decision about enrolling your child in the study will not change any present or future relationships with Wayne State University or its affiliates, your child's school, your child's teacher, your child's grades or other services you or your child are entitled to receive.

Questions:

If you have any questions about this study now or in the future, you may contact Najim Ahmed or one of his research team members at the following phone number . If you have questions or concerns about your rights as a research participant, the Chair of the Institutional Review Board can be contacted at (313) 577-1628. If you are unable to contact the research staff,

or if you want to talk to someone other than the research staff, you may also call (313) 577-1628 to ask questions or voice concerns or complaints.

Participation:

If you do not contact the principal investigator (PI) within a 2-week period, to state that you do not give permission for your child to be enrolled in the research, your child will be enrolled into the research. You may contact the PI by email _____, by phone _____, or by returning the tear off sheet below to the school office.

Optional Tear Off

If you do not wish to have your child participant in the study, you may fill out the form and return it to your child's teacher.

I do not allow my child _____ to participate in this research study.		
Name		

Printed Name of Parent		
_____	_____	_____
Signature of Parent	Date	

APPENDIX C

ADOLESCENT ASSENT FORM

Adolescent Assent Information Sheet (ages 13-17)

Title: The mediating influence of school engagement between an adolescent's contextual environment and academic accomplishment.

Study Investigator: Najim Ahmed

Why am I here?

This is a research study. Only people who choose to take part are included in research studies. You are being asked to take part in this study because you are a student at High School and the researcher is interested in your response. Please take time to make your decision.

Why are they doing this study?

This study is being done to find out what is the most important thing that influences good grades.

What will happen to me?

Your participation will consist of completing a packet of the following seven questionnaires:

1. Questions to obtain information about your age, grade, gender, and the kinds of grades you receive in school.
2. Questions about whether you believe your teacher cares about you as a person.
3. Questions about whether you believe your teacher wants you to do well academically.
4. Questions about good and/or bad peer influence you may have experienced.
5. Questions about academic self-efficacy, or how sure you feel about your ability to do well in school.
6. Questions about how much effort you put into schoolwork.
7. Questions about whether you believe your parents have your best interest in mind.

All students who are participating in the study will be asked to do so during class. Your participation will occur during the school day and take approximately one class period. During this time, you will complete a packet of questionnaires listed above. If you choose not to participate, you will be asked to work on an activity of your choice, such as finish homework or read a book.

Even if your parent/guardian gave permission for your participation, you are not required to participate if you do not want to, and you may stop part way through with no consequences. Additionally, if you choose, you can skip any questions that you do not feel comfortable answering.

How long will I be in the study?

You will be in the study for one class period (approximately 60 minutes).

Will the study help me?

- “You will not benefit from being in this study; however information from this study may help other people in the future by giving school teachers and administrators better information on how to foster academic success.”

Will anything bad happen to me?

You may perceive a loss of confidentiality due to your participation with other students in the class. This means that you may feel that other students have learned things about you that you wanted to keep private. To prevent this, please do not discuss your survey responses among other participating students or with students who did not participate in the study. In the unlikely event that you experience negative feelings from your participation in the study, you may stop your participation at any time. You can also see the school counselor.

Do my parents or guardians know about this? (If applicable)

This study information has been given to your parents/guardian. They had the option of responding if they did not want you to participate.

What about confidentiality?

The information that you provide on the surveys will not identify you. Your name will not be kept on any of the material.

What if I have any questions?

For questions about the study please call Najim Ahmed at . If you have questions or concerns about your rights as a research participant, the Chair of the Institutional Review Board can be contacted at (313) 577-1628.

Do I have to be in the study?

You don't have to be in this study if you don't want to or you can stop being in the study at any time. Please discuss your decision with the researcher. No one will be angry if you decide to stop being in the study.

Agreement to be in the Study

By filling out the surveys that are handed out to you in class, you are agreeing to be in this study.

APPENDIX D

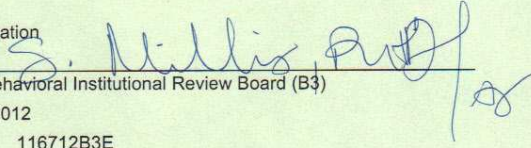
WAYNE STATE UNIVERSITY INSTITUTIONAL REVIEW BOARD APPROVAL

WAYNE STATE
UNIVERSITY

IRB Administration Office
87 East Canfield, Second Floor
Detroit, Michigan 48201
Phone: (313) 577-1628
FAX: (313) 993-7122
<http://irb.wayne.edu>

NOTICE OF EXPEDITED APPROVAL

To: Najim Ahmed
College of Education

From: Dr. Scott Millis 
Chairperson, Behavioral Institutional Review Board (B3)

Date: December 20, 2012

RE: IRB #: 116712B3E

Protocol Title: The Mediating Influence of School Engagement Between an Adolescent's Contextual Environment and Academic Accomplishment

Funding Source:

Protocol #: 1211011485

Expiration Date: December 19, 2013

Risk Level / Category: 45 CFR 46.404 - Research not involving greater than minimal risk

The above-referenced protocol and items listed below (if applicable) were **APPROVED** following *Expedited Review Category (#7)** by the Chairperson/designee for the Wayne State University Institutional Review Board (B3) for the period of 12/20/2012 through 12/19/2013. This approval does not replace any departmental or other approvals that may be required.

- Protocol Summary Form (received in the IRB Office 11/19/12)
- Protocol (received in the IRB Office 11/19/12)
- The request for a waiver of the requirement for written documentation of informed consent has been granted according to 45 CFR 46.117(1)(2). Justification for this request has been provided by the PI in the Protocol Summary Form. The waiver satisfies the following criteria: (i) The only record linking the participant and the research would be the consent document, (ii) the principal risk would be potential harm resulting from a breach of confidentiality, (iii) each participant will be asked whether he or she wants documentation linking the participant with the research, and the participant's wishes will govern, (iv) the consent process is appropriate, (v) when used requested by the participants consent documentation will be appropriate, (vi) the research is not subject to FDA regulations, and (vii) an information sheet disclosing the required and appropriate additional elements of consent disclosure will be provided to participants not requesting documentation of consent.
- Parental Permission/Information Sheet (dated 11/19/12)
- Adolescent Assent Information Sheet for Ages 13-17 (dated 11/19/12)
- Recruitment Script
- Data collection tools: Demographic Questionnaire, Academic Press Scale, Peer Influence Questionnaire, Perceived Teacher Caring Scale, School Engagement Questionnaire, Self-Efficacy for Learning Form, and Parenting Style and Parental Involvement Questionnaire

- Federal regulations require that all research be reviewed at least annually. You may receive a "Continuation Renewal Reminder" approximately two months prior to the expiration date; however, it is the Principal Investigator's responsibility to obtain review and continued approval **before** the expiration date. Data collected during a period of lapsed approval is unapproved research and can never be reported or published as research data.
- All changes or amendments to the above-referenced protocol require review and approval by the IRB **BEFORE** implementation.
- Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the appropriate form within the timeframe specified in the IRB Administration Office Policy (<http://www.irb.wayne.edu/policies-human-research.php>).

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ABSTRACT**THE MEDIATING INFLUENCE OF SCHOOL ENGAGEMENT BETWEEN AN ADOLESCENT'S CONTEXTUAL ENVIRONMENT AND ACADEMIC ACCOMPLISHMENT.**

by

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The current study explored several contexts that may influence an adolescent's academic performance in school, including school engagement, parenting behaviors, teacher behaviors, peer relationships, and academic self-efficacy. The outcome of interest was academic performance.

Participants in this study were 332 ninth through twelfth grade high school students (159 males and 164 females) from a suburban public high school in the midwestern United States. The average age of the students was 16.5. The participants completed seven surveys to measure academic performance in school, including school engagement, parenting behaviors, teacher behaviors, peer relationships, and academic self-efficacy.

Mediational analyses were used to investigate if school engagement mediated the relationship between the contextual variables and self-reported academic grades. Partial mediation of school engagement on self-reported academic grades were found for maternal responsiveness, teacher caring, maternal values towards education, paternal values towards education, and academic self-efficacy. School engagement fully mediated the relationship

between adaptive peer behaviors and self-reported academic grades. Additionally, three stepwise multiple linear regressions were performed to identify the most important contributor towards academic grades, school engagement, and academic self-efficacy. The most important contributors to academic grades were perceived teacher caring, mother values towards education, and conventional involvement. The greatest influence on school engagement were peer trouble, conventional involvement, perceived teacher caring, and mother responsiveness. Academic self-efficacy was most significantly influenced by conventional involvement, perceived teacher caring, and mother values towards education.

The findings of the current study suggest that multiple factors in the adolescents' life, such as parents, teachers, and peers contribute to personal beliefs about the possibility of success, student engagement in school, and subsequent academic performance. Caretakers of adolescents need to be aware of the multifactorial nature related to an adolescent's academic success.

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