

**Contributions of Social Support, Future Orientation and a School Transition to School Engagement
Among High School Adolescents**

by

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Abstract

This study examined how parental involvement, teacher support, future orientation, and a school transition contributed to the academic engagement of high school students. The current study was conducted using a nationally representative sample drawn from the National Educational Longitudinal Study dataset. The sample consisted of 10,364 adolescents from whom data were collected during grades eight, ten and twelve. We investigated how intra-and inter-personal attributes affected their engagement in homework in eighth and tenth grades, as well as growth in engagement from eighth to twelfth grades, above and beyond students' background factors of race, SES, behavior problems, and grade point average. Results revealed that students' parental involvement, teacher support, and future orientation were related to school engagement in 8th and 10th grades, but only future orientation is related to growth in engagement. Specifically, greater engagement during the last year of middle school and during high school was associated with higher levels of future orientation and more positive perceptions of social support in eighth and tenth grade. A drop in engagement from eighth to tenth grade was not found. Finally, it was expected that students who made a transition from a private school to a public school during the middle school to high school transition would show the greatest drop in engagement. Given how few students made the public to private school transition (4.8%) and how many students remained in public school from eighth to tenth grade (81%) it was difficult to test this hypothesis. Results indicated there was a modest difference between students who were in public school in both middle and high school compared with those who attended alternative school types in either eighth grade, tenth grade or both. However, our prediction that students who made the transition from private to public school would show a greater decrease in engagement in homework than did students who remained in public or private schools across the transition or who changed from public to private school was not supported. Given imbalance in cells, these results are not conclusive. Altogether, the set of predictors explained a

significant portion of the variance in engagement even after controlling for background variables. However, effect sizes were modest. Implications for future research and practice are discussed.

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“I have learned the final lesson, how to live and how to die, and shall take it everywhere I go.”

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I. INTRODUCTION

The problem of poor achievement in high schools in the 21st century has received much public and empirical attention. Likewise, the study of school engagement has emerged in the past decade as a prevailing interest among researchers because achievement is in large part tied to the lack of engagement of students (Boekarts, Pintrich, & Zeidner, 2000; Connell, Spencer, & Aber, 1994; Debaryshe, Patterson, & Capaldi, 1993; Jennings, 2003; Ladd & Dinella, 2009; Marks, 2000; Nystrand & Gamoran, 1991; Oyserman, 2000; Wentzel & Caldwell, 1997). According to the National Center for Educational Statistics, 38% of American school aged children are not able to read at their grade level. In 2006, the percentage of high school dropouts among 16 to 24 year olds was just under 10% (National Center for Education Statistics, 2006). For Hispanic students that number was 22%. Dropouts among African American students were 10.7% and among European American students were 5.8%.

Engaged students are in position to take advantage of the learning resources within the classroom (Ladd & Diniella, 2009), whereas students who disengage from the learning process are less likely to succeed (Connell, Spencer & Aber, 1994; Connell & Wellborn, 1991) and more likely to drop out (Janosz, Archambault, Morizot, & Pagani, 2008). Thus, prevailing research suggests that for students to be successful in school, engagement is essential. The aim of the current study is to examine change in student engagement over time and factors that predict this change.

Engagement speaks to participation, effort, and intention. More broadly, it encompasses students' interests in and ownership of their own learning, a skill necessary for responsible living (Shernoff & Hoogstra, 2001). Engagement in school refers to students' interests and participation in academic activities, which is generally divided into two dimensions: behavioral engagement and emotional engagement. Behavioral engagement includes students' physical efforts to be a part of the class and

contribute to the class, including focus, attention, and active participation during class activities, as well as the completion of assigned homework. Emotional engagement focuses on students' energy levels and attitudes regarding schoolwork (Connell & Wellborn, 1991; Skinner, Furrer, Marchand, & Kindermann, 2008), which can be more difficult to assess than behavioral engagement. A third but less often cited category of engagement is cognitive engagement, which focuses on students' investment in learning and beliefs about the importance of learning. Overall, low engagement is, in part, related to a lack of preparedness behaviorally, emotionally and cognitively.

A lack of preparedness can come in many forms, including students frequently coming to class unprepared to learn, without paper, writing utensils, the proper books, or completed homework. Coming to school without the basic materials reflects a lack of student effort that can lead to a variety of poor academic outcomes, and often serves as a strong predictor of high-school dropout (Bridgeland, DiIulio, & Morison, 2006). Students who do not believe that school offers them any meaningful learning experiences often falter in their engagement in the school context, which leads to alarming levels of student failure and more importantly student boredom. Indeed, statistics reveal that dropout is more often related to student boredom than to student failure (NCFES, 2007).

Unfortunately, there are many obstacles to engagement. Such obstacles include lack of perceived parental involvement, lack of perceived support within schools, failure to achieve academically at previous grade levels, and factors internal to students (such as depression, anxiety, and lack of hope for the future). However, despite these many barriers to engagement, lack of effort is not just an indictment on the students; it is an indictment on the societal institutions of family and school that are expected to compel students toward meaningful learning experiences, as well as on the adults who operate as agents of change within these institutions. This is perhaps why teacher support and parental involvement are believed to be important for student school engagement that is so essential for future academic success (Becker & Luthar, 2002; Davis-Kean, 2005; Eccles & Harold, 1993; Hill & Taylor, 2004; Hughes, Oi-Man Kwok, & Loyd, 2008; Natale, Aunola & Nurmi, 2009; Steinberg, Lamborn, Dornbusch, & Darling, 1992; Wentzel, 1997;1998).

Starting from the assumption that school engagement is an important building block to a successful school experience, and adding to that the magnitude of the problems with achievement at school, the need to understand the engagement of adolescents in school is critical. Such research will allow us to assess and improve the quality of education in America, giving us the capacity to promote more scholarship in fields like engineering, mathematics and medicine. Education may very well be the new wave of the Civil Rights Movement, in the sense that schools are the front lines for successful futures for our children and education creates opportunity that might not otherwise exist. Engagement may be predictive of students' readiness for college, readiness for work, and future civic engagement. Moreover, the impact of engagement may be particularly salient for students whose schools are in underserved communities (Cruce, Wolniak, Seifert, & Pascarella, 2006; Kuh, Kinzie, Cruce, Shoup, & Gonyea, 2006) because they lack other avenues toward financially successful futures.

Engaged students typically have more interaction with teachers, and are therefore challenged to perform and more likely to endure through school (Kuh et al. 2006). Students must be engaged in school to take advantage of the opportunities that a successful education provides. Thus, the practical utility of a study that looks at engagement in high school, as well as those factors contributing to and detracting from its growth, cannot be overstated. Engagement is a major goal of schools, and perhaps the best sign we have that students will make adequate progress throughout school and into their adult lives. Thus, the overall goal of the present study is to understand how a large, diverse sample of adolescents experience engagement over the course of their transition from middle school to high school and through the high school years. Behavioral engagement, in that it is more narrowly focused on those behaviors which would be considered necessary for academic success, is the form of engagement considered in this study. More specifically, time spent in homework was the focal behavioral engagement component.

Figure 1 demonstrates the relationship between context, self, action and outcomes (Connell & Wellborn, 1991). Connell and Wellborn propose a linear mediation model showing the associations between context, self, action and outcome. This linear mediation model inspires the thinking of this study; however, this exact model will not be tested. Rather, the focus of the current study will be on

relations between social context, self and action. How student engagement in homework is influenced by demographic factors and the presence or absence of changing school type during the transition from middle school to high school also will be explored. Figure 2 provides a conceptual model for the current study (the analytic model will test change in engagement over time and will test the influence of the predictor variables on change in engagement).

Figure 1. Linear Mediation Model (Connell, Spencer & Aber, 1994)

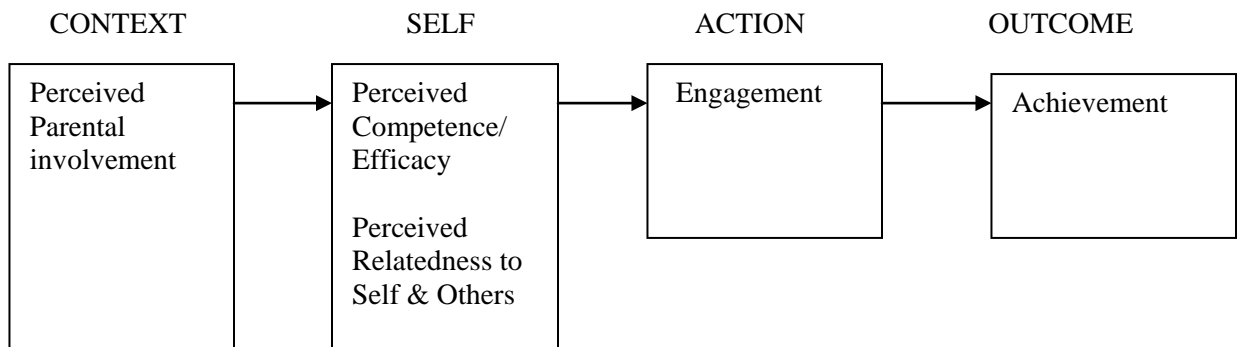
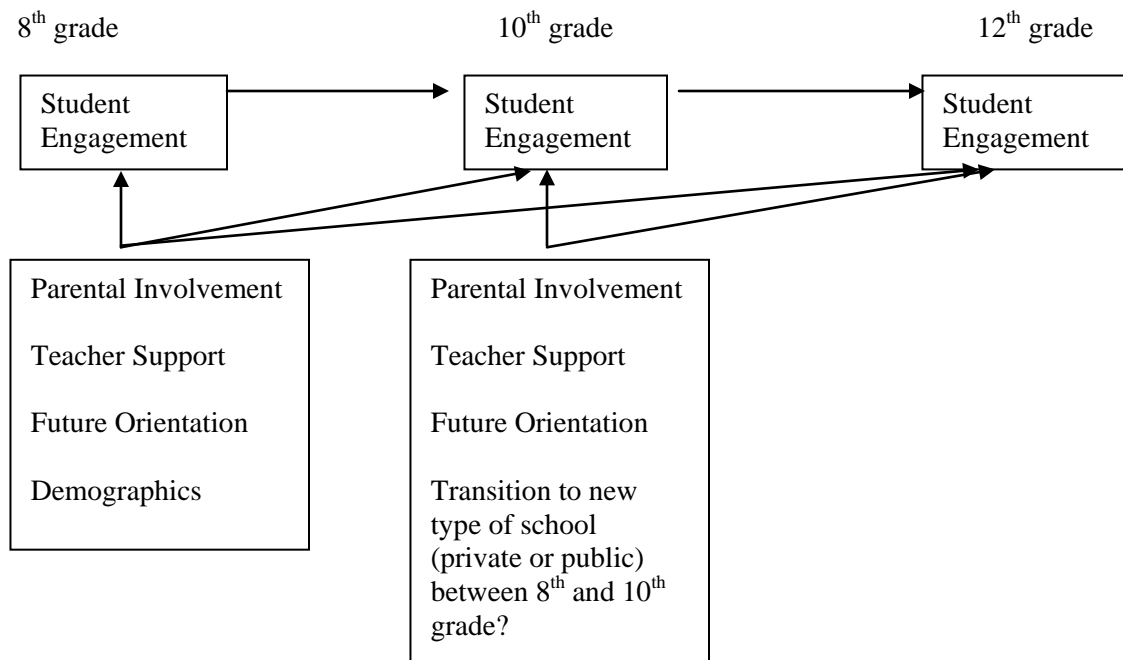


Figure 2. Conceptual Model for the Current Study



Ample research shows that there is a relationship between engagement and achievement, yet understanding variability in engagement is in its infancy. What will be tested in the present study is a model that incorporates social context variables of parental involvement and teacher support, and the action variable of school engagement. Future orientation is a self variable that is supported by current literature as a relevant influence on engagement and will be included in the model for the current study. Together, parental involvement, teacher support, and future orientation are the key predictors of change in classroom engagement over time. Additionally, demographic factors identified in the literature as influences on student engagement and achievement (e.g. family structure, gender, race, and the presence or absence of a transition from one school type to another when moving between middle school and high school).

Action: School Engagement

Of relevance to understanding engagement is examining how it changes over time and what influences such change. Cross-sectional studies on engagement have suggested that there may be variability in engagement over time. Several longitudinal explorations of engagement have surfaced within the last decade, in part, in response to the need for lasting reform to the educational system. As American education has sought to remain competitive with other industrialized nations across the world, interest in student engagement has risen as well. However, there have been only a handful of studies that have looked at influences on engagement. In many studies, engagement is included as a predictor and not as an outcome which limits our present understanding of the nature of school engagement. However, the few longitudinal assessments of engagement have revealed that engagement levels do not remain the same throughout school but are, instead, often subject to variability and even steep declines as students progress through their education, limiting their academic success (Archambault, Morizot, & Pagani, 2008; Lee & Smith, 1995; Janosz, Archambault, Morizot, & Pagani, 2008).

Several studies have shown a positive relationship between engagement behaviors and academic success in school (Janosz et al., 2008; Lee & Smith, 1995; Sirin & Rogers-Sirin, 2005; Wentzel, 1993). That is, students who engage more in school achieve at higher levels. These findings are consistent with

theory which would suggest that students' behavioral engagement behaviors are positively associated with students' academic behaviors, behaviors on which students are unofficially evaluated by their teachers and behaviors which lead to success on more formal evaluations. Both interpersonal and intrapersonal factors have been found to correlate with engagement measures (Finn & Rock, 1997; Janosz, et al.; Lee & Smith; Sirin & Rogers-Sirin). Lee and Smith helped demonstrate the relationship between student engagement and achievement in high school, and suggested that variability in engagement among students can be explained by both intrapersonal and interpersonal factors. In another study, Janosz et al. found a significant relationship between student dropout and student engagement, where lower engagement predicted greater likelihood of dropout. Similar to Lee and Smith, their results suggest that the pattern of engagement may be influenced by factors internal and external to the individual student. Other research has found that demographic variables (e.g., gender and ethnicity) explained substantial variance in academic performance (Finn & Rock; Sirin & Rogers-Sirin). And in one of her earlier longitudinal explorations of engagement, Wentzel (1997) found that student academic effort (which, according to her conceptualization, equates well with engagement) could be explained by student perceptions of teachers in eighth grade, even after controlling for other intrapersonal factors. Finally, ample evidence exists to support time spent on homework as a key facet of behavioral engagement that predicts achievement (Epstein, 1985; Walberg, Paschal, & Weinstein, 1985). In summary, longitudinal (Finn & Rock; Janosz et al.; Wentzel), and cross-sectional (Lee & Smith; Sirin & Rogers-Sirin) studies of student engagement help illustrate the salient role of engagement in the academic context. Additionally, although longitudinal studies that include engagement as a key variable are helpful to our understanding, it is important to note that few of these studies have looked at engagement as an outcome.

Time spent on homework. The relationship between time spent on homework and achievement has received some attention in the literature. Several studies, including a few that used National Educational Longitudinal Survey (NELS), have examined the relationship between time spent on homework and achievement and found this facet of engagement to predict student achievement and student learning (Epstein, 1985, Keith, Diamond-Hallam, & Fine, 2004; Singh, Granville, & Dika, 2002;

Walberg et al., 1985). Results from Trautwein, Koller, Schmitz, and Baumert (2002) demonstrated that the frequency of homework had a positive effect on homework gains. Time spent on homework has also been related to reading proficiency (Anderson, Mead & Sulliva, 1986). Time spent on homework has been found to be a critical aspect of homework's effectiveness (Keith & Page, 1985; Leone & Richards, 1989). Therefore, time spent on homework appears to be an important indicator of later success: the school engagement behavior of adolescents, as demonstrated in the effort they put forth in their homework, could lead to significant differences in adolescent learning and achievement.

Social Context: Parental Involvement and Teacher Support

The importance of the social context for student engagement and achievement, specifically teacher support and parental involvement, has been well established in the literature (Aunola, Stattin, & Nurmi, 2000; Eccles, Wigfield, & Schiefele, 1998; Grolnick & Slowiaczek, 1994; Heard, 2008; Natale, Aunola, & Nurmi, 2009; Stone, 2006). Most of the studies conducted, however, have been cross-sectional. Moreover, no known studies look at teacher support or parental involvement and time in homework. Classroom contexts affect student learning and student interest in learning, and teacher support often sets the context for a classroom. Parental involvement helps clarify and communicate expectations, as well as provides adolescents with the support and boundaries that are beneficial for academic success. Thus, teacher support and parental involvement can be strong predictors of engagement in school.

Parental involvement. Parental academic involvement is comprised of those behaviors and efforts put forth by parents to benefit their children academically. Specific categories of academic involvement are monitoring/regulation of the adolescent's schedule, communication with adolescents about school, and interaction with the school setting (Stone, 2006). Because of the ample research on the impact parents have on their children, there is well-established empirical support for a strong relationship between parental involvement and academic achievement (Aunola et al., 2000; Eccles, et al., 1998; Gonzales-DeHass et al., 2005; Grolnick & Slowiaczek, 1994; Williams & Holbein, 2005). Parent involvement also has been known to relate to adolescent selection of peer networks (Brown, Mounts, Lamborn &

Steinberg, 1993; Falbo, Lein, & Amador, 2001), homework completion and other kinds of academic engagement (Dornbusch, Ritterm, Liederman, Roberts, & Fraleigh, 1985; Eccles & Harold, 1993; Natale, et al., 2009; Steinberg, Lamborn, Dornbusch, & Darling, 1992) and disengagement from school/student dropout (Rumberger, Ghatak, Poulos, Ritter, & Dornbusch, 1990). Hill and Taylor (2004) noted that the majority of the studies on parental involvement have focused on elementary school students. They also noted that despite beliefs that parental involvement decreases significantly as students transition through school, parental monitoring and caring are sustained at least at some level throughout the child's high school years, and thus parental involvement continues to predict achievement in high school.

In a review of the literature on parents and their children's education, Eccles and Harold (1993) noted several articles that demonstrated the importance of parents to the education of their children. A separate review article by Gonzales-DeHass et al. (2005) further supported the relationship between parental involvement and student motivation/engagement. Looking at engagement as a motivational construct associated with parental involvement in studies of school-age adolescents, they found a consistent strong relationship between parental involvement and engagement. Becker and Luthar (2002) contributed a policy review article addressing the relationship between parenting, teaching and education, noting that the relationship between engagement and success can be particularly complicated by the stigmatization of disadvantaged students. These review articles help summarize the importance of parental involvement by showing that parenting behaviors relate directly and indirectly to children's school achievement and school engagement.

Several cross-sectional studies have examined the relationship between parents and student engagement, including Natale et al. (2009), whose results revealed significant correlations between parents' causal attributions of ability and children's academic performance. In another cross-sectional study, Steinberg et al. (1992) showed that parental involvement enhanced the academic performance of the adolescents in their sample, and emerged specifically as a predictor of adolescent engagement and higher GPA, showing that higher levels of parental involvement were related to academic performance.

And, Bong (2008) found that perceptions of parent-child relationships were predictors of performance in school among South Korean high school students.

There also have been longitudinal assessments of the relationship between parental involvement and academic success. For example, Stone (2006) used a nationally representative dataset to look at parent involvement longitudinally and found that communication with adolescents about academics at home related to higher grades and decreased likelihood of student drop out. Several other studies have found a direct relationship between parenting variables and academic engagement (Benner, Graham, & Mistry, 2008; Izzo, Weissberg, Kasprow, & Fendrich, 1999). Overall, such studies suggest that parent involvement is particularly important as student make the transition from middle school into high school.

Teacher support. In the past two decades, several researchers have examined the student-teacher relationship and school engagement and achievement. In their review article, Becker and Luthar (2002) found that student perceptions of teacher support were related to students' motivation to achieve academically and students' academic success. In an earlier study conducted by Wentzel (1997), it was found that student academic effort could be explained by student perceptions of teachers in eighth grade, even after controlling for other intrapersonal factors. In another study (Wentzel, 1998) found a positive relationship between teacher support and engagement. These two studies help demonstrate the important relationship between perceptions of teacher caring and engagement in school. In a longitudinal study of teacher support and student engagement, Hughes et al. (2008) found a relationship between teacher support, engagement and achievement. Specifically, they found a relationship between the support teachers provide students and academic achievement (which was assessed through reading and math scores) that was mediated by effortful engagement. Finally, in a large, cross-sectional study, Wooley and Bowen (2007) found that support from teachers, parents, and other adults was significantly correlated with engagement after controlling for several background variables (e.g. gender, socioeconomic status, race).

Extant literature on perceived teacher support helps illustrate the centrality of social factors in adolescents' academic success. Ultimately, students who perceive their teachers as supportive are more

likely to engage in academic activities. However, there is a need for more studies that look into how this support affects engagement at different times, including before and after the transition to high school.

Self: Future Orientation

In addition to the social context factors of parental involvement and teacher support, there are intrapersonal factors that can contribute to engagement in schools. Academic future orientation is an important intrapersonal variable to consider because of its relationship to academic outcomes.

Adolescents' future orientation has much to do with how an adolescent perceives his/her future, and therefore, may be an important precursor of growth in engagement. Nurmi and colleagues have conducted several studies examining future orientation and academic outcomes (Nurmi, 1987; 1991; 1993, Nurmi, Poole, & Seginer, 1995; Nurmi & Pullianen, 1991) and found that there is a strong relationship between what students feel about their future and how they perform academically. Oyserman and colleagues (e.g., Oyserman, Terry & Bybee, 2002; Oyserman, Brickman, & Rhodes, 2007; Oyserman & Fryberg, 2006) speak to the relationship between possible selves, similar to future orientation, and academic outcomes, suggesting that students with a stronger future oriented self will engage more in school and experience more academic success than their less future oriented peers. Research on possible selves helps demonstrate the link between future orientation and engagement by unpacking how this future oriented self contributes to effort in school (Destin & Oyserman, 2009; Oyserman & Fryberg, ; Oyserman et al.). Although they did not discuss 'time spent on homework' specifically, Oyserman & Fryberg expound on the link between engagement and possible selves, explaining that this future oriented self is linked with strategies that promote behavior change.

From the future orientation and possible selves literatures, we learn of the salience of future oriented thinking in the academic success of adolescents. When students are oriented to the future in positive ways, their chances of related success are higher than when students are low on future orientation. For this reason, future orientation appears to relate significantly to academic behaviors in the academic context. Students who have a firmer appreciation of their future educational goals are more likely to adopt strategies, such as spending time in homework, that lead to this end. Given this, it is

important to build on this understanding by continuing to look at future orientation at different age periods, as well as assessing the relationship between future orientation and academic behaviors over periods of transition and change for adolescents.

Middle School to High School Transition

Finally, the transition to high school may lead to a change in the average level of student engagement and may influence associations among social context (parent involvement, teacher support), self (future orientation), and engagement. For most students, the ninth grade/tenth grade year is the first year of high school, which means adolescents are thrust into new and previously unexplored terrain. This is particularly true for students transferring from one school type to another (e.g. private to public; Schiller, 1999). It is expected that engagement level in middle school on average will be higher than it is in high school, showing a drop in engagement from the eighth grade to tenth grade year of high school, and then showing a stabilizing or slight rise in engagement by the twelfth grade year (Rudolph, Lambert, Clark, & Kurlakowsky, 2001; Skinner, Furrer, Marchand, & Kindermann, 2008). Furthermore, those very low in engagement are likely to drop out prior to twelfth grade which may, in part, explain a slight increase in average engagement between 10th and 12th grades. Students high in future orientation and high in social support from significant adults are expected to have the best outcomes of all, regardless of sex or race. Studies that have looked into the transition between schools have typically focused on younger children (Barone, Aquirre-Deandreis, & Trickett, 1991; Berndt, Miller, & Park, 1989; Blyth, Simmons, & Bush, 1978; Cotterell, 1992; Felner, Ginter, & Primavera, 1982; Gutman & Midgley, 2000; Isakon & Jarvis, 1999; Rudolph et al., 2001). However, findings from Schiller, who focused on the transition from middle school to high school, and from Lee and Smith (1993; 1995) who compared students in public and private schools, suggest that the magnitude of the decline in engagement may be strongest for students who change from a private to a public school.

In summary, the rationale for looking at engagement during high school begins with an appreciation of the importance of engagement. Engagement has been shown to relate positively to academic achievement (Connell, Spencer, & Aber, 1994; Boekarts, Pintrich, & Zeidner, 2000; Marks,

2000), negatively to behavioral problems in school (Finn et al., 1995; Finn & Rock, 1997), and negatively to school dropout (Janosz et al., 2008). It is extremely important for research to explore the correlates and predictors of engagement. The salience of the relationship between parental involvement and academic achievement is well-established in the literature, and a few studies have found a relationship between parental involvement and academic engagement. Moreover, the study of student-teacher relationships has evolved into a powerful sub-discipline. Given their training, their frequency of contact with adolescents, their natural role as academic mentors, and their ability to affect students' thinking every day, teachers are likely to be very influential in influencing the course of a student's engagement. As we consider the interpersonal factors that are essential at this period of adolescent development, we must also consider intrapersonal factors. Future orientation connects with how adolescents see themselves, how they envision their academic and career futures, and the efforts they will engage in to move toward their goals. Taken together, these predictors, along with time, may lead to new understanding about the shape and direction of engagement from the end of middle school through the high school years.

The purpose of the current study was to shed light on the factors that contribute to growth in engagement in homework by looking at change in engagement longitudinally, during the middle school to high school transition and across the high school years, using a nationally representative sample from the NELS dataset. We also sought to add to current literature an understanding of how perceptions of social support, from parents and teachers, and self-perceived future orientation affect growth in engagement. Specifically, the following hypotheses were tested. It was expected that there would be variability in engagement from eighth to twelfth grade with the greatest engagement for students in eighth grade and the least engagement for students in tenth grade. A drop in engagement was expected from 8th to 10th grade (Hypothesis 1). Greater engagement during the last year of middle school and during high school was expected to be associated with perceptions of stronger social support in eighth and tenth grades (Hypothesis 2). Greater engagement during the last year of middle school and during high school was expected to be associated with higher levels of future orientation in eighth and tenth grade (Hypothesis 3). Finally, it was expected that switching from a private school to public school would be associated with

the greatest decrease in engagement from eighth to tenth grade and would be associated with the lowest 10th grade engagement (Hypothesis 4). Relevant demographic and background factors that may influence student engagement were identified and controlled.

II. REVIEW OF LITERATURE

The current study examined growth in engagement over the middle school to high school transition, and through the senior year in high school. This study was organized according to a model that links action (engagement), context (teacher involvement and parent support) and self (future orientation) as key factors that explain students' academic achievement. Of particular interest was examining how engagement changed over time and how parental involvement, teacher support and future orientation predicted that change. The review of literature is organized into four main sections. The first section includes a review of cross-sectional and longitudinal studies addressing school engagement, and a subsection addressing time spent on homework as a specific and important facet of engagement. The second section pertains to a more in-depth review of social support variables and engagement, beginning first with parent involvement followed by teacher support, and ending with studies of global social support. The third section addresses a review of future orientation and its relationship to engagement. The fourth and final section includes a review of research focusing on school transitions (elementary to middle school and middle school to high school), and on the presence or absence of a change in the type (public or private) of school during the transition from middle school to high school.

Action: Engagement

It is important to identify students with high levels of school engagement in order to then understand the factors that contribute to their success. However, before understanding the connection between engagement and factors related to its growth, one must understand the salience of engagement in the academic context. In this section of the review of the literature, the importance of engagement, including the relationship between engagement and achievement and other positive outcomes for adolescents, will be reviewed, beginning with the linear mediation model that inspires this study, and ending with in-depth reviews of articles assessing engagement as an outcome or a predictor.

There are several ways of conceptualizing engagement. The two main categories of engagement are behavioral (e.g. participation, note-taking) and emotional (e.g. energy for work, enthusiasm, attitudes). Cognitive engagement, a third category of engagement addressed in a few studies conducted during the past decade, focuses on student investment in learning and beliefs about the importance of learning. Globally, engagement refers to a student's interest and participation in classroom and school-related activities. Engagement is important because of its connection to an array of positive outcomes. Academically engaged students drop out less (Finn & Rock, 1997), engage less in problem behaviors and delinquency (Bryk & Thum, 1989; Hirschi, 1969; Jenkins, 1995; Newmann, Wehlage, & Lamborn, 1992), and experience higher academic achievement (Finn, Pannozzo, & Voelkl, 1995; Ogbu, 2003). Additionally, engagement helps facilitate classroom management from members of the class and draws class members into a community that can then facilitate more engagement. Engagement also can lead to a sense of belonging in class and a better interpersonal climate. Specifically, engaged students feel safe and comfortable discussing the class material in each others' presence and interacting with each other (Crosnoe, 2001).

Using a context-self-action-outcome model, Connell and Wellborn (1991) proposed that support is linked to self concept, and in turn, engagement in a given context. According to this model, social support leads to perceptions of competency which then leads to engagement. Engagement then mediates the relationship between adolescent perceptions of competence and academic adjustment. Although Connell and Wellborn were testing a mediational model, which is a departure from the goals of the present study, they did look at the relationship between adolescent self-perceptions and engagement, and the relationship between engagement and achievement, both of which are relevant to this review.

Connell et al. (1994) tested the linear mediation model (see Figure 1), with 552 African-American adolescents, ages 10 to 17, pulled from three samples: a sample from Atlanta, GA, a sample from New York, NY and other communities in New York state, and a sample from the Baltimore and Washington, DC area. In the 1989-1990 school year, demographic data (including gender and neighborhood risk; neighborhood risk was then further deconstructed into socioeconomic status, ethnic diversity and other

demographic variables), family economic risk (including a subcomponent for family structure), and educational outcomes (negative and positive outcomes) were collected using questionnaires. Three component processes of the self-system: perceived competence, perceived relatedness to self, and perceived relatedness to other students, were measured across the three samples. Engagement also was examined. The results revealed consistency among all three samples. Specifically, results from Connell et al. supported a model that looked at self and interpersonal contexts (perceived self-efficacy, general self-esteem and perceived quality of relationships with others) as predictors of engagement, which then predicted positive academic outcomes over time. This specific model is well supported in the literature (Buhs, 2005). The results from Connell et al. showed that there is a relationship between adolescents' perceptions and engagement, as well as a relationship between engagement and achievement. Thus, not only is the research of Connell et al. useful in adding further confirmation to the association between engagement and achievement, but their findings suggest the value of studies that examine relations between adolescents' views of self and others and engagement. The results support the value of testing models explaining changes in engagement over time that are based on the prior theorizing of Connell and Wellborn. To the author's knowledge, no such study has been conducted; however, there is existing empirical work that supports different facets of such models.

There have been notable cross-sectional studies on engagement. On three different high schools in Hong Kong, Chen (2005) tested a model that hypothesized that students' perceptions of academic support from parents, teachers and peers related directly to achievement, but that this relationship would be mediated by perceptions of engagement. In this cross-sectional study, Chen posited that the association between teacher-student relationship quality and academic engagement is evident in most educational contexts, including the United States and Hong Kong. Chen also noted the overwhelming support for the relationship between parental support and engagement and achievement in the literature. This study of 270 9th -11th grade students¹, studied in Hong Kong, included measures of perceived parental support, perceived teacher support, perceived academic engagement and perceived academic achievement. The

¹ Forms 3-5 in Hong Kong is equivalent to grades 9-11 in the US

parental support measure and teacher support measure were part of a multidimensional construct that included emotional, instrumental and cognitive support. Parental support was measured with 31 items: An example of perceived parental support was “my parents make sure that I spend the majority of time doing homework and studying.” For parental support, items focusing on parental monitoring and control were also included. According to Chen, monitoring and control are considered a part of parental support in Chinese culture. Teacher support was measured with 23 items: An example of perceived teacher support was “I feel comfortable sharing with my teachers about my school problems.” Measures of academic engagement included several behavioral items (e.g. number of hours reported on completing homework).

Relationships among all the observed variables were positive, and the ones of interest to this review, parental support, teacher support and engagement, were all significant. In particular, there was a moderate, significant correlation between teacher support and time spent on homework and parental involvement and time spent on homework. Further results supported the ecological theory that framed their research, such as the positive relationship between parent and teacher support and levels of engagement. Surprisingly, Chen (2005) found a significant, direct negative relationship between perceived parental support and student achievement, suggesting that the stronger the academic support from parents, the worse adolescents performed. Chen explained this odd result, noting that the students receiving the most support might also be the students that have the lowest performance, hence the need for the additional support. Chen referred to this as a reactive strategy interpretation. However, the expected mediation of academic engagement was found. Engagement partially mediated the relationship between perceptions of teacher support and achievement, and perceptions of parent support and achievement. This study points to the need for future research to consider the order of effects of parental and teacher support and student behaviors and outcomes.

In a cross-sectional study of middle school adolescents, Wentzel (1993) linked classroom behaviors with academic achievement. With a sample of 423 sixth and seventh grade students, Wentzel examined the connection between engagement (which, in this article, she referred to as prosocial and

antisocial classroom behavior) and academic achievement among sixth and seventh graders. Prosocial and antisocial behavior correspond with the classroom behaviors valued, such as shares and cooperates, or discouraged by teachers, such as breaks rules and starts fights. Wentzel also had a measure for academic behavior, which is more often used to assess classroom engagement in studies, which she assessed with questions such as, “How often does this student show an interest in school work?” Wentzel found significant correlations between prosocial, antisocial and academic behaviors and significant correlations between these behaviors and academic achievement. Moreover, academic behavior correlated with academic achievement more strongly than it did with prosocial or antisocial behavior. Multiple regression analyses confirmed that both prosocial and antisocial behavior were significant, independent predictors of GPA. However, this relationship was partially mediated by classroom behaviors. Classroom behavior mediated the relationship between prosocial/antisocial behaviors and academic achievement, even when teachers’ preferences for students did not.

In a more recent study, Sirin and Rogers-Sirin (2005) examined the various components of school engagement in a large, representative sample of 80 high schools and 52 middle schools, drawn from the National Longitudinal Study of Adolescent Health. Their cross-sectional study focused on a large subsample of 499 African-American students in grades 9-12. Three questionnaires were used, an in-home and an in-school questionnaire with the students, and a parent questionnaire. They looked at several demographic variables, including mother’s educational level and student grade level. Their primary measures were of academic performance (assessed by school grades for one year in four core classes), school engagement, and cognitive functioning.

Sirin and Rogers-Sirin (2005) separated school engagement into three components: The first two components included student participation (which is also known as behavioral engagement) and student identification (often referred to as emotional engagement). The third component, school expectations, included students’ perceptions of their educational future, a construct very similar to future orientation. Their index for the adolescents’ aspirations and expectations included two questions pertaining to adolescents’ feelings regarding their likelihood to attend college.

Results revealed that demographic variables explained 21% of the variance in academic performance and school engagement explained an additional 13 % of the variance. School participation and school expectations were both significant predictors of academic performance, but school identification specifically, a subcomponent of engagement, did not emerge as a significant predictor. When looking at possible moderator effects, Sirin and Rogers-Sirin (2005) found that gender did not significantly moderate the relationship between engagement and academic achievement. Gender was, however, related directly to school performance and school achievement; girls were higher on achievement than were boys.

The results of Sirin and Rogers-Sirin (2005) are important because they demonstrate the relationship between engagement and achievement in high school; however, there are limitations to this study. First, their study was cross-sectional and therefore it is not possible to determine the directionality of relationships. Second, it is possible that future orientation is qualitatively different from behavioral and affective engagement in school. It may be important for future studies to revisit the decision of Sirin and Rogers-Sirin to include future orientation as a measure of engagement. Studies have found a distinct relationship between adolescent educational aspirations/future orientation and engagement and such results speak to the necessity of separating out future orientation items from other measures of engagement (e.g. Brown & Jones, 2004; Carpenter, 1985). It is even plausible that orientation predicts engagement because an adolescent's orientation to the future could be expected to precede the behaviors and efforts the adolescent puts forth to reach those goals.

Lee and Smith (1993) using the NELS, selected a subsample of 8,845 eighth grade students from 377 schools (84 Catholic, 60 independent and 233 public) to assess engagement in a cross sectional study with a correlational design. Engagement was understood as having two dimensions. The first dimension included five indicators of behavior aimed at engagement in academic work. This measure of engagement did not include time spent on homework, but instead was focused on students coming to class prepared with their books, homework and other learning supplies. The second dimension measured the frequency of at-risk behaviors, indicating a lack of engagement. Lee and Smith found a significant, negative

correlation between the two measures of engagement, (i.e. participation in academic work (i.e. frequency of completed work) and at-risk behaviors (i.e. skipping class)). Lee and Smith also found a relationship between middle school engagement and middle school achievement.

The results from Lee and Smith (1993) showed differences both in engagement and achievement across school types. Independent school students (students who were in neither public nor catholic school) were more engaged than those in public schools, and independent school students performed better on all outcomes than those in public schools, with Catholic schools falling between the two. There were also differences in SES between the schools, and SES has been related to achievement in many studies. In Lee and Smith, achievement was strongly related to SES and academic background. SES was also related positively to engagement, and they found a positive relationship between engagement and achievement. There was also a moderate association between minority status and achievement. After controlling for SES and academic background, however, Lee and Smith found that the academic engagement of students was similar. The results underscore the importance of looking at engagement in a representative sample that includes different school types.

Similar to Lee and Smith (1993), Lee and Smith (1995) investigated the relationship between school type, achievement and engagement. In this study, however, they looked at the same students from eighth grade to tenth grade. With a sample of 11,794 high school students pulled from the NELS base year and the first follow up, Lee and Smith sought to elucidate the relationship between school-restructuring and student engagement and achievement in high school. Contending that different schools may have different resources, and that these differences may be strongly related to school size, they conducted the study with an eye toward all the reforms to which secondary schools have been subjected. Lee and Smith proposed that the basic differences between schools, communal versus traditional bureaucratic, would influence engagement in school. Communal schools are generally smaller schools with less emphasis on structure than bigger, more bureaucratically run schools. Schools with traditional practices are considered bureaucratic and least communal, schools with restructured practices are considered communal, and schools with moderate practices are considered in-between. Specifically, Lee

and Smith suspected that more communal schools would have more engaged students and that engagement would be more equitably distributed. In order to consider the role of restructuring, in their procedure they used a technique to separate the schools according to traditional practices, moderate practices and restructured practices, which proved to be a statistically and conceptually sound grouping.

Lee and Smith (1995) conducted multivariate analyses using the methodological approach of Hierarchical Linear Modeling (HLM). The standardized factor used to measure engagement included eight components, including measures of student behaviors and attitudes and the frequency of the two. They found that engagement was significantly higher for students in restructured schools. School size also mattered. Both engagement and achievement were consistently, positively associated with school size. More specifically, the smaller schools had students higher in engagement than the larger schools.

Overall, using several components to create a measure of engagement, Lee and Smith (1995) found that engagement was significantly higher for students in schools that had been recently restructured. In an earlier study, also looking at engagement across school types (i.e. parochial, public, private), Lee and Smith (1993) found that there is a relationship between school type, achievement and engagement. Their study revealed differences in engagement across school types, with engagement greatest in private school.

Cross-sectional studies tell us of the relationship between classroom behaviors, including engagement, and classroom achievement. They also help demonstrate the centrality of engagement in studies of adolescents in school. However, these studies are limited in their capacity to explain changes in engagement and factors associated with such changes over time. A few studies have looked at engagement longitudinally. Among them are Archambault, et al. (2009), Finn and Rock (1997), and Janosz et al. (2008). These studies show many of the same relationships evident in cross-sectional studies with correlation designs but provide the added benefit of observing engagement over time as well as pointing toward key predictors. Each of these studies is reviewed below.

In a longitudinal study conducted during the same time period as the Lee and Smith studies, Finn and Rock (1997) examined the relationship between psychological characteristics and school engagement

with a sample of 1,803 high school minority students pulled from the NELS dataset. They hypothesized that engagement would be an important aspect of why students persevere to succeed academically. The authors noted that engagement was essential, as it is an antecedent to achievement, and malleable in the sense that engagement, unlike race or SES, can be manipulated by practices within the school context. Achievement scores were collected at each data collection point. Self-esteem, locus of control, and engagement were assessed during the students' tenth grade year.

The engagement measure for Finn and Rock (1997) was drawn from a taxonomy of engagement behaviors identified in Finn (1989). Finn and Rock looked at three levels of engagement behaviors. Level 1 included behaviors related to the students' adherence to the stated school norms (e.g. refusal to complete assigned work, reverse coded). Level 2 included initiative taking, such as a student's enthusiasm for his work, help-seeking, or other forms of evidence of a student's eagerness to learn. Level 3 included involvement in extracurricular activities (e.g. sports, choirs, and clubs). Specific example items for level 2 and level 3 were not provided. The engagement items were selected from the student and teacher questionnaires when the students were in tenth grade. Using these aforementioned levels of engagement as a guide, they were able to use the NELS to create three sets of composite engagement measures, two of which reflected student compliance and student noncompliance with rules and the last of which reflected in and out of school initiative taking. Their plan of analysis included a series of multivariate analyses of variance (MANOVAs) and multivariate analyses of covariance (MANCOVAs).

Univariate and multivariate analyses revealed significant differences according to gender. Teachers perceived that the female students were more engaged than were the male students. Male students reported attending school more regularly than did female students. There were also significant race differences among the Hispanic and African-American students sampled. Hispanic students missed class or were late more routinely than were African-American students. The last set of engagement measures revealed that when it came to homework completion, Hispanic students reported completing more homework than African American students. There were also significant gender differences regarding extracurricular involvement, with male students more involved in sports than were female

students. It is interesting to note that although significant differences were found in engagement on the basis of race; however, whether students were resilient (resilient students were identified as school completers with academic success) or not was not significant.

Overall, Finn and Rock (1997) contribute to our understanding of the role of engagement in high school by looking at engagement in high school using a nationally representative dataset. Finn and Rock noted that a clear objective of future studies must be “to understand how such qualities develop. Engagement—not academic performance—would be viewed as the outcome, and research would seek to identify its determinants” (p. 231). They also noted the need to consider adolescents at younger ages as well.

In a recent study, Janosz et al. (2008) assessed engagement longitudinally in order to examine the relationship between student dropout and student engagement. In this study, in contrast with other longitudinal analyses of engagement mentioned in this review, engagement was the independent variable. Janosz et al. refer to the large body of work that relates high school dropout to a variety of factors, among them individual and institutional factors. However, given that previous studies have suggested that less engaged students are significantly more likely to drop out than are engaged students, Janosz et al. focused their attention on engagement as a major cause of school dropout, offering a study that might facilitate educational policy. To assess this, they considered factors affecting different life course pathways, including low-income areas, low educational aspirations, and poor parenting practices. They referred to the principle of equifinality, a principle that contends that there may be several ways to arrive at the same outcome and is a contrast to monocausal explanations of phenomena. Janosz et al. argued that differences between individuals in the nature and course of school engagement could help explain the relationship between engagement and school dropout.

To examine the relationship between school dropout and engagement, Janosz et al. (2008) used a longitudinal data set from the New Approaches New Solutions (NANS) study. Their ethnically homogenous sample consisted of 13,330 middle and high school students from schools in provinces across Quebec. All their information was obtained through student self-report. Several variables were

included in this study, among them, their independent variable, a global construct of engagement that included behavioral, affective, and cognitive dimensions. Example items include adolescents' school attendance, adolescents' compliance with rules, and adolescents' enthusiasm about school. The analytic strategy used was growth mixture modeling (GMM), an amalgamation of latent growth modeling and latent class analysis. This method is expected to reveal the differences in trajectories between participants qualitatively and quantitatively.

Results supported the authors' contention that there would be a significant, negative relationship between school engagement and school dropout. However, of particular interest to this review, Janosz et al. (2008) had important findings related to the growth trajectory of engagement for the different groups of individuals studied. The group referred to as the *normative* trajectory comprised 53% of the sample and revealed relatively high levels of engagement from 12-16 years of age. Their engagement remained fairly stable, with marginal decrease across the waves. There were also some interesting gender differences, with girls in this trajectory twice as likely to drop out as were boys, however the dropout rate in this group was low. The group referred to as the *stable moderate* trajectory, which comprised 24% of the sample, was similar to the normative trajectory, with slightly lower engagement over time. The group referred to as the *stable high* trajectory, which comprised 14% of the sample, included students with the highest, most persistent levels of engagement. The number of females in this trajectory was double that of the number of males. Among these three trajectories, the level of engagement was different but the shape of each trajectory remained flat overtime.

For the last three trajectories, *transitory increasing* (3% of the sample), *transitory decreasing* (3% of the sample) and *decreasing* (2% of the sample), the shape of growth in engagement varied as well as the initial level of engagement. Each of these groups made up a small portion of the total sample but tell an interesting story in terms of the potential between-person variation to be explained when assessing engagement. The transitory increasing trajectory were low in engagement at the first wave (average age of 12), reached normative levels at the second wave (average age of 14), and then decreased in their levels at the third wave (average age of 16). This trajectory was comprised of the highest percentage of school

dropouts. The transitory decreasing trajectory had moderate levels of engagement at the first wave, lower than the transitory increasing group, had the lowest level of all engagement groups by the second wave, and then returned to moderate levels of engagement by the third wave. Dropouts in this trajectory were high, but not as high as the previous trajectory, and almost all the dropouts were male students. The last trajectory, the decreasing group, had high levels of school engagement at the first wave and experienced rapid decline over the next two waves, making them the group lowest in engagement by the last/third wave of the study.

Janosz et al. (2008) contribute considerably to our understanding of longitudinal assessments of engagement. The benefits are twofold: One, by empirically demonstrating the relationship between school dropout and engagement, the essentiality of engagement is reinforced for researchers and policymakers alike. Two, their results point to the importance of examining the role that the school, the family and the individual student play in the development of these differing patterns of engagement. It is worth noting that the majority of the students had fairly high levels of engagement which were sustained over time. Yet for those students for whom this was not true, there was variability among them, which points to the need to continue looking at the between-individual and within-individual variance that leads to differences in growth in engagement. Moreover, as informative as the specific trajectories found were, the results of Janosz et al. emphasize the need for future studies to examine the growth and shape of engagement over time and key factors that predict change in engagement over time.

Noting that dropout often occurs just prior to tenth grade, emphasizing the often detrimental impact of school transitions, Archambault et al. (2009) tested the contribution of global engagement longitudinally as a prospective predictor of school dropout on 11,827 seventh to ninth graders. The school engagement measure included 18 self-report items representing 3 dimensions of engagement, behavioral, affective and cognitive. The behavioral dimension included school attendance and discipline, the affective dimension included liking school and interest in work, and the cognitive dimension included willingness to learn French language arts and willingness to learn mathematics. Results underscored the importance of behavioral engagement, revealing that only behavioral engagement, and not cognitive or affective

engagement, significantly forecasted school dropout. However, all different dimensions of engagement were highly correlated with one another.

Time Spent on Homework as a Facet of Engagement. The relationship between engagement and achievement has been well noted in the literature. Likewise, time spent on homework, one facet of behavioral engagement, has also been related to achievement. Time spent on homework is particularly important as it is a variable that reflects motivation and time spent on instructional activities, factors that have been known to predict student achievement (Singh et al., 2002). There is ample evidence to support time spent on homework as a predictor of achievement and parental involvement as a predictor of time spent on homework (Epstein, 1985; Walberg et al., 1985). When achievement is measured by grades or standardized test scores, several studies have supported the positive effect of time spent on homework on student learning (Cooper & Valentine, 2001; Foyle, 1984; Keith, 1982; Keith & Benson, 1992; Keith & Cool, 1992; Natriello & McDill, 1986; Trautwein, Koller, Schmitz, & Baumert, 2002; Trautwein & Koller, 2003). Moreover, a few studies have shown time spent on homework as a critical aspect of homework's effectiveness (Keith & Page, 1985; Leone & Richards, 1989). A meta-analysis looking into the relationship between homework and achievement conducted in 2006 also pointed to the importance of homework, generally, in its relationship to educational outcomes (Cooper, Robinson, & Patall, 2006).

Although cause-and-effect were impossible to determine, Anderson and others working on the 1986 National Assessment of Educational Progress (NAEP)² learned that almost two-thirds of the students sampled reported spending time on homework and that the amount of homework done was positively related to reading proficiency. Time on homework was assessed with one item: "How much time did you spend on homework yesterday?" The relationship between time spent on homework and reading was particularly salient in grades 4, 8, and 11. Distinctions were made among students who had homework assigned and students who did not. The relationship between time spent on homework and

² In 1986, the NAEP was an ongoing national survey funded by the Office for Educational Research and Improvement (OERI), whose primary goal was to report the status of and changes in the educational attainment of American students

reading proficiency was based on students who reported having had homework assigned; interestingly, students with no homework assigned were the poorest readers.

Several studies have used the NELS to demonstrate the important relationship between time spent on homework, as a factor of engagement, and achievement. Using data from the base year (1988), first follow-up (1990), and second follow-up (1992) of the NELS, Keith et al. (2004) investigated the relative influence on students' grades of time spent doing homework. With a diverse sample of 13,546 students, they found that out-of-school homework significantly related to achievement, as measured by students' 12th grade GPAs. Also using the NELS, Singh et al. (2002) drew a sample of 24, 599 eighth graders to examine the relationship between four school-related constructs and achievement, all of which explained a significant amount of variance in mathematics and science achievement. Pertinent to the current study, the strongest effects were for time spent on homework.

In another longitudinal study, Keith (1982) sampled 20,364 seniors drawn from the National Center for Education Statistics' High School and Beyond Longitudinal Study (HSB) to examine the causal effects of homework time on high school seniors' achievement. Time spent on homework significantly contributed to academic achievement, as measured by grades. In fact, the time variable explained an additional 32% of the variance in grades, after accounting for race, background and ability. The 'time spent on homework' measure consisted of student responses to: "Approximately what is the average amount of time you spend on homework a week?" The analysis also revealed that an increase in time spent in homework had a significant, positive effect on student achievement.

Using data from the Learning Processes, Educational Careers, and Psychosocial Development in Adolescence conducted at the Max Planck Institute for Human Development in Berlin, Germany, Trautwein et al. (2002) collected data from 1976 German 7th-graders in 125 classes to investigate the relationship between homework and mathematics achievement. Using a repeated-measurement technique, results revealed that, whereas the monitoring of homework and the length of homework did not significantly contribute to achievement, the frequency of homework had a positive effect on homework gains. Questions were posed about three aspects of homework. Two questions pertained to the frequency

of homework assignments, “How often are you usually assigned math homework?” and “How long does it usually take you to finish your math homework?,” which investigated the time a student typically spent on homework when it was assigned. Although not assessing the frequency of homework in the present study, results from Trautwein et al. (2002) do point to and support the importance of homework on positive and negative academic outcomes.

In a meta-analysis, Cooper et al. (1998) searched the ERIC, PsycINFO, Sociological Abstracts and Dissertation Abstracts electronic databases and found 4,400 studies focused on homework. Cooper et al. discovered that past meta-analyses on the same topic indicated that students who did more homework had better achievement outcomes; in Cooper et al, all possible effects of homework were considered. Acknowledging that homework is an important part of the routine of school-aged children, Cooper et al. unearthed the positive relationship between time spent on homework and grades, while also suggesting that the influences on homework are perhaps more complex than homework’s influence on achievement. Cooper et al. found that studies employing exogenous manipulations (studies that manipulated homework and no homework conditions) revealed that homework positively affected unit grades.

Cooper et al. also incorporated a section on studies using the NELS with waves collected during 88, 90, & 92 and found 9 studies that looked into homework: “Examined as a group, the studies using NELS data use a wide variety of outcome measure configurations and different sets of predictor variables, in addition to homework. Still, every regression coefficient associated with homework was positive, and all but one were significantly different from zero” (p.21). Results from these studies confirm that students who reported doing homework also reported higher achievement scores than students who reported doing no or little homework. Thus, time spent on homework is a valuable facet of behavioral engagement.

In summary, the existing literature on engagement suggests that the quality of classroom engagement is associated with factors that lie within and between individuals. Students who are high on support, for instance encouragement by teachers, appear to be higher in academic behaviors. Students who report higher achievement are also likely to report higher academic engagement. The research does not address, however, the factors that lead to behavioral engagement specifically. Moreover, few

longitudinal explorations of engagement look at engagement as an outcome instead of as a predictor. It is not entirely clear what the factors are that influence engagement, especially as students make the transition from middle school to high school. However, the Connell and Wellborn (1991) theoretical model offers some guidance. A different trajectory of engagement might be expected for students who are high on positive self-beliefs, such as future orientation, and high on social support than for students who are low on social support and/or low on future orientation. Specifically, it is likely that the quality of engagement is associated with adolescents' perceptions of their future and the support they receive from parents and teachers.

Context: Social Support

Parent involvement. Parents play a significant role in the success of their children in many domains, especially the academic domain. Eccles and Harold (1993) contributed a review article demonstrating the ways parents and teachers can and often do come together to promote the development of the adolescents in their care. The authors clearly document the importance of parents to the education of their children by showing that the behaviors of parents are strongly related to their adolescents' success in school. Parents' beliefs and behaviors are related to academic achievement, and this relationship appears to be affected by several factors, including socioeconomic status (Davis-Kean, 2005; Jimmerson, Egeland, & Teo, 1999). However, in terms of the role parents can play in facilitating the academic success of their students, parental involvement plays perhaps the biggest role of all. This section will begin with a definition of parental involvement, and then will cover the relationship between parental involvement and engagement. Studies reviewed span elementary through high school.

The definition of parental involvement in their children's academic pursuits has evolved in the literature. According to Hill et al. (2004), parental involvement in academic matters is largely defined as the efforts parents put forth to stay involved with their children academically to the benefit of those children. Parental academic involvement has been operationalized to include actions like helping the child study, checking homework, attending school meetings, volunteering at school, and communicating with teachers (Hill and Taylor, 2004).

By and large, studies investigating parental involvement and academic engagement measure engagement with behaviors related to acting out, work efficacy, quality of academic effort, task orientation, tolerance, focus, and coping with failure. Gonzales-DeHass et al. (2005) contributed a review article on the relationship between parental involvement and student motivation/engagement. They noted the wide body of research documenting the relationship between parental involvement and academic success in adolescence and conducted a literature review to look more narrowly at how this involvement shapes student motivation and participation in school. They listed engagement as one of a handful of motivational constructs that has a meaningful relationship with parental involvement across studies of school-age adolescents.

They also noted that although the research on parental involvement has been fairly extensive, engagement as a consequence of parental involvement has only recently increased in prominence in research. To conduct their review, they searched all related articles from 1967-2005 in the ERIC and PsycINFO online databases. After a thorough selection process, thirteen articles were considered in their review. Two of the articles identified by Gonzales-DeHass et al. (2005) that are relevant to the current study are discussed in more detail below (i.e., Izzo, Weissberg, Kaspro, & Fendrich, 1999; Steinberg, et al., 1992). In addition, two more recent longitudinal studies, (Benner, et al., 2008; Stone, 2006), and a recent cross-sectional study (Natala, et al., 2009) also are reviewed.

Some researchers have looked at the relationship of parental involvement on academic achievement and academic classroom engagement jointly. Steinberg et al., 1992 examined the impact of parenting practices (including parental involvement in school) on adolescent achievement and academic engagement. They used a socioeconomically and ethnically diverse sample of 6,400 high school students in Wisconsin and northern California. Information pertaining to parenting practices was collected from the students only. They noted that parental encouragement is a common predictor of status-attainment, used mostly in sociology. Their study was longitudinal as it tracked the relationship between school performance and parental behaviors (i.e., encouragement, involvement) across two time points, the first in the 1987-1988 school year and the second in the 1988-1989 school year. They studied adolescents with

disengaged parents as well as adolescents with engaged parents.

Their acceptance/involvement scale contained 36 items measuring adolescents' perceptions of the involvement of their parents. They justify the use of adolescent report to obtain the information based on the likely difficulty of acquiring this type of information from disengaged parents. The parent involvement in school scale looked more narrowly at the frequency with which parents participated in student academic activities. Examples include assistance with homework, coming to the adolescent's extracurricular activities and assisting with the selection of the adolescent's courses. Classroom engagement was one of three academic outcomes considered in their study. The other two were time spent on homework and grade-point average. Time spent on homework has been used as a type of engagement in some studies. For classroom engagement, adolescents were asked to assess the frequency of concentration, attention and efforts in school in four subject areas (math, English, social studies and science).

Their analyses yielded results that supported the relationship between parental involvement and academic engagement. Parental encouragement; however, did not appear to enhance school performance or school engagement after controlling for parental involvement. Parental involvement did lead to enhancement of academic performance of the adolescents studied, and emerged specifically as a predictor of adolescent engagement and higher GPA. It does not appear as if the authors examined the relationship between parental involvement and time spent in homework specifically, as such a finding was not reported. The work of Steinberg et al. (1992) demonstrates the very clear and significant relationship between parental involvement and academic success, suggesting that the two do not merely accompany one another but that one predicts the other. However, the analyses revealed little effect of parental involvement on adolescent engagement, when not mediated through school performance. Parental involvement results in better student performance which, in turn, results in greater engagement. Thus, although parent involvement in school resulted in student engagement in school, it may be important to control for prior academic performance. Another surprising result is that the expected link between parental involvement and academic achievement was not found among the subsample of African-

American adolescents in their study. In this group, neither parental involvement nor parental encouragement correlated significantly with school performance or classroom engagement. This is consistent with an earlier finding that authoritative parenting is not a good predictor of academic achievement across African-American youth. Rather, better predictors of academic achievement in the school context are those parenting behaviors and involvement more closely associated with adolescent academic behaviors, such as completion of school work.

The work of Steinberg et al. (1992) demonstrates that higher levels of parental involvement are related to academic performance, although not for all adolescents. It also demonstrates that higher levels of parental involvement are related to academic engagement, and it points to the importance of considering variability according to racial/ethnic background. Additional research has established a relationship between parenting behaviors (i.e. parental involvement) and adolescent's subsequent school effort/engagement.

In a 3-year longitudinal study of kindergarten through third grade children, Izzo et al. (1999) looked at the relationship between earlier parent academic involvement and later social and academic functioning. Izzo et al. looked also at the relationship between parent involvement and engagement, predicting that parent involvement leads to engagement, which included behaviors like not acting out, and remaining focused amidst distractions. Included in their assessment of parent involvement was measurement of the frequency of contact between parent and teacher (a potential pitfall of this approach is discussed below), as well as parents' involvement at the school and parent's assistance with homework.

Results supported the relationship between parent-teacher involvement and school engagement. Parent participation predicted school involvement but, interestingly, results revealed a significant negative association between the frequency of teacher contact and school engagement. The greater the parent-teacher contact, the lower the school engagement. This result might be explained by the authors' inclusion of frequency of contact between parent and teacher as an assessment of parent involvement. Frequent contact could be more of an assessment of problem behavior than an assessment of parent involvement in academics in general. Finally, results suggest that parent involvement may precipitate academic

performance.

In a short-term longitudinal study (Fall to Spring of the 9th grade year), Benner et al., 2008 looked at the proximal processes that occur within the school and family contexts. *Proximal processes* form an ecological construct meant to capture the complexity of the interactions between the individual and the environment in which the individual is embedded (Benner et. al.). They used an ethnically diverse sample of 1,120 9th-grade students from metropolitan Los Angeles. Two of the subscales that comprised the family process construct were a family monitoring subscale and a family environment subscale, (i.e. items on the family monitoring scale, in particular, were coded so that higher scores indicated parental academic support and parental monitoring). They also looked at school process variables, including perceptions of school climate and sense of belonging. Student engagement was conceptualized as a proximal adolescent outcome.

Student engagement was assessed in ninth grade with two measures. The first was a teacher report questionnaire in which teachers reported their perceptions of the degree of student engagement, and the second measure was a student self-report questionnaire in which students rated their perceptions of their own engagement. Results revealed a significant negative relationship between teacher reports of engagement and student self-report of peers' engagement.

Specifically, the more academically involved students rated their peers, the less engaged the teacher perceived those same peers to be. Although this finding is counterintuitive, and there is no clear explanation for this negative association, the authors noted that there could be a self-enhancing effect, in that students reported unrealistic levels of engagement for themselves and their peers. Results also showed that family structure affected family processes (such as parental monitoring). Family process behaviors were highest for adolescents living in a two-parent home with both biological parents. The effects of a positive school climate on students' performance academically were explained in part by students' perceptions of their engagement (e.g., paying attention in class). Results further revealed that there was a positive significant relationship between students' perceptions of engagement and grades. The authors did not examine whether engagement predicted grades, but they did note that grades were a distal

outcome, whereas engagement was a proximal outcome. Finally, the authors found that greater adolescent-and teacher-reported school engagement in the fall of 9th grade were associated with higher grades in the spring of 9th grade. This study contributes to the literature on engagement in two important ways. First, their study helped clarify the relationship between parental involvement and engagement. Family processes, including parental involvement, were related to adolescents' proximal outcomes. Families higher in these processes had children higher in engagement. Second, it specified processes between parents and their adolescents that weigh on engagement: family support for academics and family monitoring.

Stone (2006) used the NELS to look at parent involvement longitudinally. The goal was to investigate the influence of different characteristics on parent involvement. The measures were student-reported change in parent involvement (home communication about school, monitoring, and direct parent interaction with school), parent/family characteristics (family structure, family size, parent expectations, general home/parenting environment, family stressors reported between eighth and tenth grade, whether a sibling dropped out of school, and parents' education), child characteristics (demographic background, school behavior and academic performance), and academic outcomes (change in student reported cumulative grade average). In a first step, to model changes in parent involvement, HLM techniques were employed. In a second step, the authors determined the extent to which changes in parent involvement related to student outcomes. Although the effect size was small, Stone found that communication with adolescents about academics at home related to higher grades and decreased likelihood of student drop out. Stone also found that changes in parental monitoring between eighth and tenth grade related to child and parent/family characteristics; there also was a significant decline for students from largely minority schools. Change in monitoring neither varied across schools nor related to student academic outcomes, which Stone contends may reflect that a change in this type of involvement is a normative developmental process. Finally, changes in parental involvement appear to be related more to parent/family characteristics than school characteristics.

Other recent research focusing on academic achievement also points to the need to take into

account family background characteristics when examining the association between parent involvement and student engagement. Heard (2007) used a large representative sample from the National Longitudinal Study of Adolescent Health to look at the relationship between family structure, parental involvement and school achievement. Specifically, Heard wanted to know if the effects of family structure, which had been found to significantly relate to achievement in several previous studies, were comparable across racial groups. Heard found differences in family structure between racial groups, but concluded that, generally, academic deficits are greater for students who spend extended periods of time in non-two parent families. She also noted that the negative effect was greater for white American students. In addition, Heard found that adolescents with more involved parents had higher grades. Finally, her results showed that students who reported greater social support reported higher academic achievement. Although this particular study lacks a clear link to engagement, it does suggest the need to control for family structure and ethnic background when considering the benefits of social support to adolescents in the academic realm.

Taken together, the extant literature on parent involvement suggests that the quality of parental involvement is associated with the quality of adolescents' academic experiences. Adolescents who have parents who monitor their work, communicate with them about school, and offer help as needed are more likely to succeed in school. The research does little to address, however, how these effects play out as students make the transition between grades and schools. Given research that suggests a change in parent involvement as adolescents get older, it would also be helpful to know how parent involvement in middle school affects growth in engagement in high school. For instance, does parent involvement at earlier ages continue to significantly predict the level of engagement of adolescents at later ages? Or is there a point in which the effect of parental involvement as a predictor of engagement tapers off?

Teacher support. The relationship between teacher support and student engagement has received limited attention in the literature. Becker and Luthar (2002) offered a policy review article that integrated ideas about various factors that contribute to the academic success of middle school students. Drawing on an ecological/transactional perspective, they contended that a student's environment consists of several co-occurring levels that influence academic success. Becker and Luthar noted the need for teachers to

receive essential professional development in becoming sensitive to the specific developmental needs of middle school adolescents. They also noted that the relationship between engagement and success can be complicated by the stigmatization of disadvantaged students. Motivation to learn may have as much to do with access to supportive teacher-student relationships as it does access to competent teachers.

Becker and Luthar (2002) argued that student perceptions of teacher support were related to motivation to achieve academically and to academic success. As evidence, they point to the many experts and researchers that have concluded that positive academic outcomes result from the perceptions students have of this support, which is a determinant of subsequent behavior. In recent years, several researchers have looked into this relationship, including Wentzel, whose work helps to elucidate the link between teacher support and engagement (Wentzel, 1997; 1998). She gives empirical support to the wide body of work suggesting the link between student belonging and feelings of being cared for and internalization of teacher/classroom/school goals.

Wentzel (1997) examined adolescents' perceptions of teacher caring and how those perceptions affected social and academic outcomes. In her study of 248 adolescents beginning in the sixth grade year and ending in the eighth grade year, she asked two research questions, the first assessed the extent adolescents' perceptions of teachers predicted outcomes, and the second examined how middle school students describe caring teachers. Engagement was assessed first in sixth grade and second in eighth grade, with questions like, "How often do you really try in [class]?" and "How often do you really pay attention in [class]?" Perceptions of teacher caring, also assessed at two time points, included questions such as, "My teacher cares about how much I learn." Results showed that student academic effort could be explained by student perceptions of teachers in eighth grade, even after controlling for other intrapersonal factors. Additionally, perceived teacher caring in sixth grade predicted student motivational outcomes (e.g. pursuit of social goals and academic effort) in eighth grade.

Wentzel (1998) examined adolescents' perceived support from teachers as well as other important figures in the adolescents' lives. In this cross-sectional study, she included 167 sixth grade students. Results showed a relationship between perceived teacher support and interest and responsibility in school

for girls and boys but the effect was even greater for girls. Interest was assessed first in terms of students' general interest in school and second in terms of how students actually persist and engage in the classroom. Wentzel hypothesized a relationship between perceived social support, more generally, and students' motivation and academic success. She found that the relationship between social support from teachers and others, and school interest and effort was mediated by psychological distress. However, there were direct links between perceived social support and motivational outcomes, academic efforts and pursuit of social goals.

The longitudinal study of middle school adolescents (Wentzel, 1997) and the cross-sectional study of sixth grade students' perceptions of teachers (Wentzel, 1998) helped demonstrate the important relationship between perceptions of teacher caring and engagement in school. Wentzel's work also helped demonstrate the importance of a supportive classroom environment in schools seeking to meet academic objectives. Her work reminds researchers in this field that engagement is not just good for students, but it is good for schools, as it aids them in meeting learning objectives.

In recent work, Hughes et al. (2008) used measures of teacher-student relationship quality to examine the relationship between teacher support, engagement and achievement. In this longitudinal study, Hughes et al. began with a sample of 671 first grade students in three school districts in Texas and followed them for three years. Engagement and teacher student relationships were both assessed with teacher report. Engagement was deconstructed into two main components, effortful engagement and conduct engagement, which were assessed with different scales. For effortful engagement, Hughes et al created a 10 item scale that was adapted from the California Child Q-sort. Items on this scale reflected student effort and attention. For conduct engagement, Hughes et al. used a 24 item scale that asked questions related to externalizing behaviors and impulsivity in the classroom. Teacher-student relationships had dimensions of support (assessed with 13 items), intimacy (assessed with 3 items), and conflict (assessed with 6 items).

Results demonstrated a relationship between the support teachers provide students and academic achievement (which was assessed through reading and math scores). However, this relationship was

mediated by effortful engagement. Hughes et al. found this relationship even when controlling for prior achievement. When testing these pathways across two time periods, Hughes et al. found support for reciprocal effects between engagement and teacher student relationship quality from the second to third year, but not from the first year to the second year. One interpretation of this result, provided by Hughes et al, is that the more stable teacher-student relationships become, the more stable academic achievement becomes. Conversely, the less stable teacher-student relationship becomes, the less stable academic achievement becomes.

Using the National Institute of Child Health and Human Development Survey of Early Care and Education, O’Conner and McCartney (2007) examined teacher-student relationships among a group of children from preschool through third grade and assessed the relationship between that and achievement in third grade. O’Conner and McCartney found that high-quality teacher student relationships between preschool and second grade fostered academic achievement in third grade. High quality teacher-student relationships appeared to diminish the effect of other obstacles (e.g. insecure maternal attachment). Results were consistent with what other studies have found. However, of particular interest to this review, they utilized an ecological model that supports the relationship between teacher support and achievement. Moreover, it demonstrates that this effect, albeit at younger ages in this study, can be potent enough to partially compensate for other deficiencies. It certainly lends credence to looking at a similar relationship in older adolescents.

Overall, teacher student relationships benefit adolescents socially and academically (Resnick et al., 1997). Teacher support has been linked to a number of academic factors; in particular, teacher support has been associated with greater academic achievement (Davis-Kean, 2005; Hughes et al., 2008; O’Conner and McCartney, 2007; Wentzel, 1993; 1997; 1998). Studies that have included teacher support among other types of social support also have shown that the specific support of teachers matters.

Global social support. Several studies have looked at social support more globally, including both parental support and teacher support in the same studies. Using an ecological framework, Marks (2000) evaluated the effect of engagement on school reform but looked also at the relationship between

social support and engagement. The sample included 3,669 students representing 24 schools; specifically, 143 social studies and math classrooms in several states. Marks looked at students across grade levels, elementary, middle school and high school. Student engagement, the dependent variable, contained four components: student effort, attentiveness, lack of boredom in class, and assignment completion. Social support was subdivided into three measures: school support for learning, 2) classroom support, and 3) parental support. The parental support measure included both general parental involvement and frequency of discussion about academic matters.

Results indicated that there were grade-level differences in engagement. As grade level increased, engagement behaviors decreased. The amount of social support adolescents reported varied by grade level and subject, with students in math classes reporting greater perceived school support than students in social studies classes. In terms of parental support, elementary school students reported receiving greater parental involvement than did middle and high school students. Students in high school reported more parental involvement pertaining to future plans and school programs than did middle school students. According to Marks' results, little of the variability in engagement was attributable to personal background factors. Results from multivariate HLM analyses revealed that most of the variance in engagement in elementary, middle and high school occurred within classrooms. Marks found that the between-person variance to be explained was greatest for elementary school students (12%), and slightly lower for middle school students (9%), and for high school students (8%). Across all grade levels, girls reported more engagement than did boys. There was no significant relationship between race/ethnicity at any of the three grade levels. Personal background variables, including gender, race/ethnicity, SES, and prior achievement, accounted for less than 10% of the within-person variance in each grade level. Consistent with their theoretical framework, social support significantly contributed to engagement at all three grade levels. Specifically, social support accounts for 18% of the variance in engagement in elementary school, 20% of the variance in engagement among middle school students, and 22% of the variance in engagement among high school students.

In a recent study, Wooley and Bowen (2007) examined the relationship between social support and academic engagement for middle school students most at risk for academic failure. This study utilized two theoretical frameworks, a bioecological resilience perspective and a social capital perspective. The bioecological model posits that the proximal processes that surround an adolescent connect the environments of that adolescent with outcomes for that adolescent. The social capital perspective posits that supportive adults add meaningfully to the resources middle school adolescents have and subsequently increase the likelihood of reaching desirable academic outcomes.

The sample consisted of 8,410 middle school students from schools spanning five states. The school engagement measure captured dimensions of both psychological and behavioral engagement. Specifically, the measure consisted of 11 items, such as “I look forward to new things,” and “What kind of grades did you make on your last report card?” Contextual risk factors included 20 indicators of risk in the students’ neighborhood, school environment, family relationships and peer relationships. One example indicator included high risk peer affiliations. The social capital/social support measure included 20 items assessing the students’ positive adult relationships with teachers, family members, and neighborhood adults. Students reported a range of contextual risks from 0 to 18 out of the possible 20, with a mean contextual risk score of 5. Students reported the full range of social capital indicators from 0 to 20, with a mean score of 14.6.

Regression analyses were used to assess the relationship between exposure to risk factors and the presence of supportive adults. These analyses revealed that all demographic and control variables related significantly with school engagement, students with some risks had lower school engagement than students with no risks and students with high risks had even lower engagement. Social support mediated the negative influence of contextual risks on school engagement. In Block 3 the effect of contextual risk reduced significantly when social support was added to the model. When the social capital index was entered, the most significant change in the model was that the coefficients for the risk groups dropped by approximately 50% for both the middle-risk group and the high-risk group. These results suggest that social capital assets mediate the negative influence of contextual risks on school engagement. Overall, the

authors found support for the relationship between supportive adults and school engagement. Taken together, demographic and control variables (gender, grade, race/ethnicity, lunch program, race/ethnicity) accounted for 12% of the variance in school engagement. Social support explained an additional 9% of the variance.

In summary, existing research reveals that social support has implications for students' academic behaviors in school. Less support appears to predict negative academic outcomes for students and more support appears to predict positive academic outcomes for students. Specifically, parent involvement in the home context and teacher support in the school context both have bearing on student engagement. Although the research documenting this particular relationship is sparse, together, the effects may even be greater.

Self: Future Orientation

Future orientation is an adolescents' regard for his/her future. Students who have high, realistic goals and positive perceptions of their future are generally considered to be high on future orientation. Future orientation relates to engagement in high school because how a student behaves academically often is associated with what that student perceives is possible for his/her future education and career.

Nurmi et al. (1995) explain that there is a content dimension and a temporal extension dimension to future orientation. The content dimension, also known as the thematic structure, has to do with the interests, goals and expectations adolescents have of their future lives. In the education domain, this would include expectations of college enrollment, future job success, and, more generally, a projection of who they will be as they mature after school is over. Temporal extension refers to the timetable adolescents give themselves to meet these goals and realize their expectations. For example, adolescents might be asked when they expect to begin a family or begin a career related to their educational goals. Because adolescence serves as a transitional period, future orientation may be a particularly salient predictor of academic performance and engagement in the high school years.

Nurmi et al. also note the marked differentiation across institutions during adolescence and points to the different institutional tracks on which adolescents find themselves that can affect their future

orientation. As an example, they note age-graded changes such as those that take place between freshmen year and senior year of high school. The type of transition that adolescents make when moving from middle school to high school might affect their future orientation. However, with developmental progress, future orientation is expected to develop as well. For this reason, high school adolescents can be expected to form their future orientation in consideration of where they fall in the developmental tasks of adolescence. The age-graded developmental tasks in high school would help the adolescent learn both the doable and the impossible goals before them (Nurmi, 1991; 1993; Nurmi et al., 1995). Thus, what they deem as impossible in the educational realm could be related to the level of parental involvement in their education or the experience of others' success and failures around them, which could put students devoid of the relevant social capital at risk of low future orientation.

Kalakoski & Nurmi (1998) compared a sample of Finnish students who were a few months away from a school transition and another sample of Finnish students who were more than a few months removed from a school transition. They also looked at the relationship between the school transition and students' exploration of their educational futures. Their sample was comprised of 7th, 8th, 10th and 11th grade students, with an average of 55 students per grade level. To assess future education orientation, the participants were asked about the highest level of education to which they aspired. Aspirations for occupation and family were measured with the Exploration and Commitment questionnaire; a measure with questions that assessed the extent to which adolescents had sought information or made plans related to these domains. Using an exploration and commitment identity scale, the authors discovered that 10th and 11th graders had higher levels of exploration related to education than did 7th and 8th graders. Their results also indicated that educational aspirations were higher than occupational aspirations and family aspirations. This effect was true for both boys and girls, but higher for girls. This effect was also apparent across grade levels. However, paired comparisons revealed that aspirations related to education were higher for 10th and 11th graders. 10th graders also showed higher commitment to education than 7th graders.

In an Australian study, Martin (2007) looked into the relationship between student motivation, educational aspirations and engagement using a sample comprised of 12, 237 students in junior high school (which, in Australia, are the seventh and eighth grade years), middle high school (which, in Australia, includes ninth and tenth grade), and senior high school (which, in Australia, includes eleventh and twelfth grades). Students were approximately 12-14 years old, 14-16 years old, and 16-18 years old, respectively. Fifty one percent of the sample was male. Students were pulled from two types of Australian high schools, government and independent. The independent schools included a mix of denominational and non-denominational schools, but we're all mixed ability, similar to the other schools in the study. The authors noted in the literature review the wide body of literature that has demonstrated that students higher in engagement are more likely to express intentions related to continuing with coursework in the future. Among other objectives, their study sought to establish that there was a within-person effect on engagement. They looked for interactions between age, gender and engagement. The authors hypothesized that middle school students would demonstrate higher levels of engagement than high school students, and that girls would demonstrate more engagement behaviors than would boys. They did not pose a hypothesis for a relationship between boys and girls at different grade levels. They did hypothesize, however, that there would be a relationship between class participation and educational aspirations.

To assess engagement, teachers administered the Motivation and Engagement Scale –High School (a 44-item scale that assesses the cognitive and behavioral dimensions of engagement and motivation) to their student participants during class. The scale also assesses maladaptive behavioral dimensions, including disengagement, e.g. “I often feel like giving up at school.” Their results demonstrated that disengagement was markedly negatively associated with class participation (which could be considered an indicator of engagement) and educational aspirations (which could be considered an indicator of future education orientation). Results also revealed that there was a significant gender difference. Girls reflected more adaptive patterns of motivation and engagement, and boys were significantly higher on maladaptive behaviors, specifically disengagement and self-handicapping

behaviors. Grade level differences emerged as well. Middle school students reflected less engagement than their older peers, which was the opposite of the authors' expectations and counter to other findings in the literature.

Work with the construct of possible selves in the last decade provides further insight into the relationship between adolescents' perceptions of their futures and their engagement in school. Although future orientation and possible selves are defined differently, they are related concepts. Through possible selves, adolescents visualize possible futures. Oyserman (2002) defines possible selves as the component of self that is future oriented. In several of her works, Oyserman helps to demonstrate the link between future orientation and engagement by unpacking how this future oriented self contributes to effort in school (Destin & Oyserman, 2009; Oyserman, et al., 2007; Oyserman & Fryberg, 2006).

The source of possible selves varies. According to Oyserman and Fryberg (2006), one's future oriented self is connected to processes that take place in the academic domain because they are partly rooted in the beliefs important others have of the adolescent. Teachers have varying levels of contact with students throughout the life course but often act as significant adults in that they provide regular feedback for adolescents. Possible selves are also rooted in students' own sense of self and other intrapersonal processes. Oyserman and Fryberg expounded on the link between engagement and possible selves, explaining that this future oriented self is linked with strategies that promote behavior change. For instance, students with a college oriented possible self may be more likely to adopt engagement strategies that they perceive will lead to this outcome. Oyserman and Fryberg also acknowledged that other influences on engagement can be both external, as well as internal to the school context. For instance, parents also likely influence the relationship between possible selves and engagement.

In three, low-income Detroit middle schools, Oyserman, et al. (2007) conducted a possible selves intervention that took place during the eighth grade year. After two years, a follow up study examined the effects on academic outcomes, including engagement in school. Oyserman et al. proposed that there would be a relationship between parental involvement and academic success. Although it was not tested in the study, they assumed that adolescents with involved parents would be more likely to have possible

selves that were consistent with the academic objectives of the school, and that these possible selves would manifest themselves through engagement in the school context. Oyserman et al. found a relationship between possible selves and engagement. For the group that received the intervention, Oyserman found significant changes in time spent on homework, which increased, and class disruptiveness, which decreased. There were also significant differences between this group and the control group. Those who received the intervention had significantly higher grades and better classroom behaviors.

Destin and Oyserman (2009) sampled 48 seventh graders pulled from two different classes in an urban, low-income Chicago school. They hypothesized that children from low asset families have lower expectations and a non-academic-oriented possible selves, (e.g. because of structural barriers, and their perceptions that this opportunity is not available to them) and thus plan to engage less in school. Results supported both parts of their hypothesis. First, students from low asset families did have lower expectations for their academic success than did students from families with more assets. Second, students with lowered expectations related to their future orientation planned to exhibit less effort in school, as measured by student self-reports. Moreover, to ascertain the role of expectations, Destin and Oyserman induced the low asset students to perceive that they could go to college via financial aid and other opportunities. This mindset manipulation led to students stating different plans for engagement in school. These relationships were replicated in a second, different sample (N=48) after controlling for age and previous academic success, in that the mindset manipulation led to more plans for engagement. Destin and Oyserman found that, for students who were not already behind, believing that an educational path was open improved their plans for engagement.

In summary, the extant literature on future orientation and academic outcomes suggests that the quality of a student's future oriented self is associated with success in the academic realm. Adolescents who have a future orientation that includes academic-oriented selves may be more likely to succeed in school. Work in the area of possible selves has helped us to build on this understanding. However, more can be learned about the specific relationship between future orientation and engagement. From this

author's understanding, few studies have looked at this relationship and no study has looked at this relationship across the transition from middle school to high school. Given research that suggests that changes in future orientation occur as adolescents age, it would be helpful to know how future orientation in eighth grade relates to student engagement before and after students make the transition to high school. For instance, does future orientation at earlier ages continue to significantly predict the level of engagement of adolescents at later ages?

School Transitions

In addition to considering the influences of intrapersonal and interpersonal factors on change in engagement, it also is important to consider the role school transitions play in the academic behavioral engagement of adolescents. To be clear, there are two ways of viewing the transition that students make as they leave the eighth grade, each of which is equally important to adolescent outcomes post-transition. The first issue is the transition itself from middle school³ to high school. The second issue is the change of schools that may accompany this transition; many adolescents will have to leave their school environment completely and enter into a new one as they move into high school. Some may make a change in school type, such as moving from a public to a private school or a private to a public school.

For students in the United States, high school represents a period of considerable challenge and growth. For most students, the ninth grade/tenth grade year is the first year of high school, which means adolescents are thrust into new and previously unexplored terrain. The teachers are new forces with which to be reckoned, and the school environment and many of the students in the high school may be unfamiliar. Often, classes are bigger and expectations are greater. Students' perceptions of their peers and their school, of their teachers and of their own potential may vacillate. School transitions also can result in lower levels of achievement, negative attitudes toward learning, and problematic outcomes such as reductions in self-esteem (Rudolph et. al., 2001).

³ 8th grade can be part of a middle school or junior high school (or even remain part of an elementary school), but for simplicity sake I will refer to 8th grade as middle school throughout the paper.

Whereas many students may participate actively and eagerly in school during the middle school years, engagement may not remain at the same level as students make the transition to high school. As students progress through school, their chances of becoming disaffected increase (Alspaugh, 1998). The factors that affect the classroom engagement of high school adolescents, including self-variables such as future orientation and social context variables such as parental involvement and teacher support, may be influenced by students making the transition from one school type to another. It should be noted that there are few studies that have focused on the transition to high school and student engagement; most studies that have examined school transitions and student outcomes have addressed the elementary to middle school transition. Both points of transition (elementary to middle school, and middle school to high school are addressed in this review).

Predictors of student engagement and achievement during school transitions. In one study of students making the transition from elementary school to middle school, Gutman and Midgley (2000) used a sample of 62 African American families living at or below the poverty line, and followed a subsample of adolescents from these families beginning the last year of elementary school (fifth grade) and the first year of middle school (sixth grade). Gutman and Midgley found that middle school students who felt more academically efficacious had higher grade point averages across the transition from elementary to middle school than did their less efficacious peers. In consideration of previous research detailing the struggles of African-American students experiencing the transition from elementary to middle school, the authors credit poor academic performance of some poor minority youth to a combination of psychological, biological and social factors and changes in school structure that converge during early adolescence. For this reason, their study explored protective factors that the authors believed might support the achievement of poor African-American students as they transition from elementary school to middle school.

The predictors in Gutman and Midgley (2000) were fifth grade GPA, academic self-efficacy, parental involvement, perceived teacher support and feelings of school belonging. The participants were drawn from a larger southeastern Michigan longitudinal study, designed to examine how school and

classroom traits impact students' psychological and academic outcomes as they make the transition from elementary to middle level school. Their academic self-efficacy scale, borrowed from the Patterns of Adaptive Learning Survey, assessed student perceptions of whether they could master the tasks assigned to them in school. The parental involvement scale, adapted from the Family School Survey Study, assessed student perceptions of the academic involvement of their parents or other family members, both within the home and within the school. Perceived teacher support, borrowed from the Classroom Environment Scale, assessed student perceptions of the support they received in school from their middle school teachers.

Their main effects model accounted for 38% of the variance in sixth grade GPA. In their interaction effects model, Gutman and Midgley (2000) found interactions between parental involvement and feelings of school belonging and between parental involvement and perceived teacher support. Specifically, they found that students who were high in both parent involvement and teacher support in fifth grade had higher GPAs in sixth grade after controlling for previous achievement than did adolescents high on either one or none of these factors. The work of Gutman and Midgley (2000) helps point to factors that would be important to consider in any study looking at students making the transition from one school to another and from one developmental stage to the next. They also help illustrate that some factors may be even more salient for groups at risk, i.e. poor African-American students. Furthermore, their work helps underscore the important relationship between families and schools.

We learn from Gutman and Midgley (2000) that the transition between schools might contribute to a decrease in academic success. However, the last finding pertaining to the support system of the youth helps demonstrate the relevance of perceptions of social support(perceived parental involvement, perceived teacher support) on the effort and achievement of students. However, there were limitations to their work. Their study was not longitudinal (the student survey was only collected once and that was during spring of their sixth grade year) and therefore they were unable to look at the direction of these important relationships. In addition, their study was conducted on a small sample of only 62 participants, and they did not include an assessment of engagement, which is a key component in the learning process.

Although it is established that school transitions can weigh heavily on adolescents, ample research shows that parents can help to mitigate this negative effect. Several studies have found that adolescents who make the transition from one school to the next benefit from parental or other adult support (Barone et al., 1991; Berndt et al., 1989; Cotterell, 1992b, Felner et al., 1982; Isakson and Jarvis, 1999). One such study (Isakson & Jarvis) suggests that parent-adolescent relationships change as adolescents navigate a school transition, and is one of only a handful of studies that focus on the transition into high school. As impetus for their study, they noted that high schools are infused with new academic and social difficulties, contending that this new environment may influence the students' comfort level and ability to achieve. They address the adolescents' transition to high school in light of parent and adolescent variables that they assessed with four measures of school success, GPA, attendance, social adjustment, and academic adjustment.

Their sample consisted of 41 Central Illinois eighth grade adolescents attending a public, university-affiliated school. Their sample was primarily Caucasian, middle class students and a sprinkling of students from other racial/ethnic/SES groups. There were three time points, one in the eighth grade year, and the second and third in the ninth grade year. They hypothesized that stressors would increase during the middle to high school transition, and that the mediators between the stressors and adolescent adjustment would include social support, a sense of autonomy and other coping mechanisms. Social support from parents was assessed using Lamborn and Steinberg's (1993) measure of relationship support. Their social support variable was very similar to parental involvement, in that the 9-item scale included questions assessing how much support the students felt they received regarding school.

The first hypothesis for Isakson and Jarvis (1999) that academic adjustment (measured by student report of GPA and attendance) would decrease during the transition to high school was supported. Results indicated that GPA was highest in eighth grade (T1) and significantly different from the first time point in ninth grade (T2). However, there was no significant difference between GPA in the beginning of ninth grade (T2) and at the second ninth grade time point (T3). Additionally, T1 attendance rates were significantly different from T3 attendance rates. Although adolescent attendance actually improved after

the transition to high school, they fell by T3, and, at that point, the attendance rates were significantly lower than rates during T1. The second hypothesis that stressors would increase in ninth grade and contribute to poorer adjustment also was supported. For example, stressors at T2 indicated lower GPA at T2, indicating that transition from middle school to high school does indeed have a negative effect on academic performance. However, stressors significantly decreased from the beginning of the ninth-grade year (T2) to the end of the ninth grade year (T3). There may be reason to suspect that the stressors used in this study, though important, may have been short lived. Finally, there was a significant relationship between perceived support from parents and adolescents' adjustment during the middle school to high school transition. Perceptions of parent support did not appear to be time-varying. Further, results in their study lend to support to the work of Berndt et al. (1989), who found through self-report that adolescents credited their parents with greater influence over their academic attitudes, behavior, and performance than they did their friends. In this study, where Isakson and Jarvis looked at both peer and parent support, parents emerged as the greater factor in adolescent adjustment across the transition.

The Isakson and Jarvis (1999) study followed adolescents across the transition to high school but would have benefitted from a longer timeframe to the study. For instance, the differences between the eighth and ninth grade year were significant but there were few significant differences between the two time points during the ninth grade year. A study that follows adolescents across high school into their 12th grade year could better contribute to our understanding of the adjustment adolescents make across the transition to high school and throughout their secondary schooling. In addition, engagement would have been a helpful measure to considering this short-term, longitudinal study. Engagement may be a behavior more closely aligned with academic achievement than other forms of adjustment. An adolescent who is engaged in school in eighth grade and continues to be engaged across the transition may be better adjusted to the new school environment and therefore more successful academically. Similarly, an adolescent who is engaged in eighth grade, but drops in engagement in ninth grade may be less adjusted to the new school environment and therefore less successful academically.

Lastly, although it is helpful to know that a drop in GPA across the transition to high school may be normative, it is important to know what contributes to this decline. Preventative efforts, for instance, could be aimed in any number of directions. It may be important to begin with an examination of engagement across this transition, given its close link to academic performance. School transition appears to be negatively correlated with engagement. In theory, facilitating engagement could be more important than fostering school belonging, given that engagement is centered on habits related to academic achievement, whereas belonging, in and of itself, is vaguer and less attached to the habits that might lead to better performance.

Other studies have taken steps to pick up where studies like Isakson and Jarvis (1999) left off. Included among such studies is Gandara, O'Hara and Gutierrez (2001), who conducted a four year investigation following students from the beginning of their ninth grade year through the end of their eleventh grade year. Unlike Isakson and Jarvis (1999), however, they did not look at these same students in eighth grade; so we do not know about their performance pre-transition.

Gandara et al. (2001) worked with two California high schools to investigate adolescent perceptions of school, of their future (including post-high school and beyond), and of the influences on their developing identities as students. Their ongoing longitudinal study consisted of a small sample of 80 White and Latino students in two schools, one rural and the other urban. Their study incorporated both qualitative and quantitative measures, including questionnaires and focus groups. Although the white sample in the rural school was socioeconomically diverse, the students from the two schools were generally from low income households.

Gandara et al. (2001) found several developmental trends for urban and rural adolescents making the transition through high school. They found that many students entered high school without clear educational aspirations but that these aspirations grew stronger and clearer over time. However, actual academic achievement (measured by GPA) declined over time. They also found that the community that surrounded the adolescents in their lives outside of school related to the students' educational aspirations. For instance, students who reported having parents and/or siblings who had attended college were more

likely to report that they would go to college. That said, as the adolescents continued to move through school, college aspirations rose significantly for all groups, regardless of their surrounding community. Problems for these youth arose as they entered their eleventh grade year and still had not improved their grades. In fact, for many, students' grades continued to slip. Gandara et al. noted that these adolescents had an orientation of their future (college) that seemed distant to them, so distant that even in eleventh grade adolescents perceived graduation as a distal outcome that did not closely relate to present behavior. By way of their methodology that included focus groups, it appeared to the researchers as if processes related to college admissions procedures had not been considered fully by these adolescents.

Lan and Lanthier (2003) used the NELS to examine changes in personal attributes among high school drop outs. They noted the significance of the drop-out issue, citing costs both to the individual and to society. They also pointed to the causes of dropout identified in previous research, including, for instance, environmental factors like the characteristics of families and schools, poor academic performance, and low motivation to achieve. They also noted that in the NELS, students were asked to report on their reasons for school dropout. Among the 21 commonly identified reasons listed, many students reported "relationships with teachers," which were chosen by 34.6% and 25.7% in the second and third waves collected for the NELS project, respectively. Thus, in Lan and Lanthier, a longitudinal investigation following a group of student drop outs from their ninth grade year until their final year in high school was conducted.

Lan and Lanthier (2003) selected 1,327 high school drop outs, specifically students who remained in school in tenth grade but dropped out before the completion of their twelfth grade year. 53% of the sample were males, 62% were non-Hispanic white students, 18% were Hispanic, and 16% were Black. They examined nine personal attributes they believed were related to school dropout: academic performance, motivation, effort expenditure in school work, participation in school activities, relationship with teachers, relationship with peers, perception of school, self esteem, and locus of control. Lan and Lanthier also looked at gender as a potential moderator of longitudinal changes in personal attributes. Analysis of variance (ANOVA) on each individual dependent variable was used as the analytic strategy.

Results showed that relationships with teachers changed significantly for the students who dropped out. Although relationships with teachers were not below the national average in eighth grade, they became significantly negative in tenth grade, and, for those students still in school, fell even more in twelfth grade. A similar decreasing trend was seen for students' perceptions of school over time, motivation for school work, and participation in school activities, but was not significant for any other variables. Significant gender differences also were found for self esteem and relationship with peers only, with female students having less positive self esteem and less positive relationships with peers than males had.

Akos and Galassi (2004) assessed the influence of gender and other demographic variables in school transitions. 173 sixth grade students pulled from one middle school and 320 ninth grade students pulled from one high school were administered the School Transition Questionnaire (STQ), a retrospective measure of student perceptions during the transition from one school to another. Questions were adapted from the National Longitudinal Study of Adolescent Health (1998). Among other outcomes related to school transitions, students were assessed about which significant persons were helpful to them during the transition. The ninth grade sample was predominately Caucasian (57.2%), followed by African-American students (19.7%), and then Asian American and Latino students, each of which comprised approximately 8% of the sample. The sixth grade sample was predominately Caucasian (76.3%), followed by African-American students (10.3%), and a small percentage of other ethnicities, including Asian and Latino students.

Results were enlightening in several ways. First, students did not perceive the transition as difficult. Race, but not gender, was significant in students' perceptions of the transition. In addition, high school students reported that they were as connected to their high school as middle school students were connected to their middle school. Given what has been found in previous studies, it is a somewhat surprising result that these students did not find the transition to be particularly difficult. Thus, although it is important to note that Akos and Galassi (2004) asked retrospective questions of two distinct groups of adolescents, instead of following the same group of students across the transition, it is meaningful that these high school students did not find the transition to be difficult. Moreover, it is interesting to find that

the results were not significantly affected by the gender of the student. That said, it is not at all surprising that these results were affected by race. According to their results, Latino students found the transition to be more difficult when compared with Caucasian and African-American students. This result is to be expected because of their relatively small sample of Latino students, which would suggest Latinos were a statistical minority in their schools; for many Latino students, the problem with race could be compounded by language barriers that could make adjustments into high school more difficult than their mainstreamed peers.

Second, although boys and girls did not significantly differ in their perception of the difficulty of the transition, there were gender differences in school connection at post-transition. Post-elementary to middle school transition, girls felt more connected to their school than boys; whereas, post-middle school to high school transition, boys felt more connected to their school than did girls. Although engagement behaviors were not observed in this study, this last result may have implications for students' behavioral engagement in school, inasmuch as student adjustment to school after the transition has bearing on subsequent academic efforts. Third, the high school students reported that other students, first, and parents, second, were the persons most helpful to them in the transition. However, gender was significant in determining who was most helpful in the transition. More than girls, boys reported family members other than parents as helpful during the transition.

As students matriculate through high school, the consequences of academic failure are clearer and more immediate. Fresh out of middle school, ninth/tenth graders often are introduced to concepts like class ranking and competitive roles. Even beyond the ninth/tenth grade year, high school can be a harrowing, stressful experience. Adolescents transition into high school and transition through high school at the same time that they develop very real emotional and physical connections with friends and dating partners. Students have much to be engaged in, including academic, extracurricular, non-academic and out-of-school activities (Pedersen, 2005). Due to competing demands that accompany movement from one school type to another, academic activities may ebb and flow. Unfortunately for many, students' drops in engagement can have critical or meaningful short-term and long-term consequences for the high

school adolescent. Adding to the obstacles to engagement is the extent to which students experience a change in the school environment when they make the transition from middle school to high school.

Changing schools. There can be vast differences between different school types. Students moving to a new school may find that the school culture and the expectations that accompany it to be very new and different. In a recent, short-term longitudinal study of younger students beginning in Spring of 5th grade (T1) and ending in Autumn of 6th grade (T2), Rudolph et al. (2001) followed 329 adolescents (Mean=11.2 yrs) who fell into two comparison groups: 1) 187 adolescents who made the transition to a new school and 2) 142 adolescents who experienced no school transition as they moved from fifth to sixth grade. The sample was drawn from three Midwestern school districts. With these 329 students (168 girls, 161 boys), Rudolph et al. looked at the characteristics and effects of school transitions. Whereas previous research on school transitions has looked at mean changes in functioning over time, Rudolph et al. used the individual differences approach, which allowed them to observe trends for at-risk students specifically.

The dimensions of academic engagement measured were all teacher-rated and all behavioral. Engagement was understood as persistence in the face of challenge, academic effort and academic performance. An example item rated by teachers aimed at assessing classroom persistence and effort is, “When he/she encounters an obstacle in school work, he/she gets discouraged and stops trying.” Other questions tapped varied combinations of persistence, effort and performance. Results revealed that adolescents who made the transition from one school to another experienced “more hassles” than students who remained in the same school and showed poorer outcomes such as worse academic performance in the transition group and more general failure to make positive gains, such as increases in academic engagement.

There were a few limitations to this study. First, although a longitudinal study with two time points is preferable to a cross-sectional design, there are limitations to what can be learned about the directionality of relationships. Second, several questions included in their measure of engagement seem to speak to efficacy, perhaps more than engagement itself. Third, teacher ratings taken alone may not be the

most reliable assessment of classroom engagement, in part, because of the number of students any given teacher has to attend to and the different ways students may engage the material. Also, there could be potential race biases or personal biases, as teachers may subconsciously rate the students with whom they identify the most higher than students with whom they do not identify. A similar proximity bias is possible for teachers who have mentor relationships with some of their students. Students that are not as closely connected with other teachers may be ranked lower simply because the teachers do not know those students as well. Fourth, and finally, an average of different subject areas (e.g., math, reading, science) was taken to help determine the level of engagement of a student. Given the likelihood that students produce more effort in the classes in which they feel the most capable and the most likely to succeed, an average of these scores may not represent students' true engagement or commitment to school, especially if one class where the rating was particularly low would have lowered the students' average score substantially and underestimated his/her actual overall school engagement.

In an older study, Blyth et al. (1978) looked at how the social and psychological development of sixth grade students was affected by the grade level organization of schools. They also looked at these same students after the transition from sixth to seventh grade. With a longitudinal sample of 622 students, they found that K-to-6 students were more likely than K-to-8 students to report that teachers' expectations had changed over the years, suggesting further that there was the expectation to act more maturely and plan for a future career as students change schools as they move into higher grades. Although Blyth et al. did not measure future orientation specifically, their findings do suggest more internalized responsibility and heightened awareness over future outcomes for both groups. The sixth grade students at the K-to-6th school also seemed to emphasize modeling the behaviors and beliefs of adults, possibly because they were the oldest students at the school. In other words, adolescents experienced a more dramatic change when attending a different school in seventh grade.

According to the theory that guided Blyth et al. (1978), change in the school environment results in new socialization patterns which may be a better indicator of adolescent growth than physiological changes, which can vary widely from adolescent to adolescent. This transition often includes significant

changes in social position and socialization patterns. Blyth et al. found significant differences between the sixth and seventh grade year. Among other changes, there were differences in student perceptions of their school context and student academic participation. These changes also varied for students across the two different school types. The K-to-8th adolescents when in the seventh grade had a stronger self-concept, participated more in extracurricular activities and felt less anonymous. Conversely, in seventh grade, the K-to-6th adolescents had a weaker self-concept, decreased in their participation in extracurricular activities and felt a higher degree of anonymity. For all the seventh graders, regardless of school type, their perceptions of the school and of the individuals within the school changed as a result of entering the seventh grade. However, for those adolescents who had to move to a different school, their perceptions became decidedly more negative. These results speak to the importance of school transitions, especially to issues related to how the students view themselves, their futures and their participation in school.

Taken together, the research of Rudolph et al., 2001 and Blyth et al., 1978 contributes significantly to how we understand school transition, especially as it relates to looking at students longitudinally and across educational contexts. Research on school transition has continued to build on studies conducted in the seventies and eighties, but has focused overwhelmingly on the transition to middle school. A longitudinal design that follows students for a longer period of time could help determine whether effects are short term or longer lasting. Moreover, looking at students making the transition to high school would help us see the similarities and differences between middle school transitions and high school transitions. This is particularly relevant as students graduating from middle school and moving on to high school typically change schools, whereas students making the transition to middle school shows more variation regarding whether they change to a new school or stay in the same school. However, one additional change seen during the high school transition is some students changing school type, from private to public or from public to private.

Transitions also may have an effect on engagement because of differences between the schools for younger adolescents and the schools for older adolescents. For example, results from the Blyth et al. (1978) study revealed that when making the transition to seventh grade within their own school, the

adolescents in the K-to-8th grade sample reported less anonymity while those adolescents in K-to-6th grade, all of whom moved to a new school for seventh grade, reported more anonymity. The authors attribute this difference to school size effects, since junior highs typically have larger class sizes than a K-to-8th grade school. They also noted the increased departmentalization of classes at a junior high school, which requires students to work with different and all unfamiliar teachers. This explanation is supported by the fact that students at the new junior high felt that the students did not know them. They dispersed to different junior high schools and had new classmates. Participation in activities also was different across schools. Eighty-one percent of the students in the K-to-8th grade, compared to only 38% of the junior high students, participated in extracurricular activities, which the authors note may be important because of the larger number of activities provided at the junior high school level. These results suggest that although the transition to a different grade in and of itself may be important; the transition is perhaps more significant when students are leaving one school in order to attend a new school. However, differences between elementary and middle/junior high school may not be the same as difference between middle/junior high school and high school.

In a study addressing the middle school to high school transition and changes in the type of school attended, Schiller (1999) used a structural perspective to examine the changes students experienced as they moved into high school. Using the NELS, Schiller distinguished between six types of schools, four public and two private: vocational, magnet, choice, public, catholic, and private. To assess academic success, Schiller measured mathematics scores as the dependent variable. In tenth grade, Schiller measured mathematics grades, whether students had a choice as to which high school they would attend, whether students would go to high schools with many of their eighth grade peers or not, and whether students moved from a public middle school to a private high school or vice versa. All controls were measured in students' eighth grade year. Results show that eighth grade mathematics performance corresponded significantly with ninth grade mathematics performance. Moreover, students attending vocational and private high schools performed better in math than did students assigned to specific public high schools. Attending high school with many eighth grade peers is associated with lower mathematic

performance. However, further analysis revealed that, for students who received A's (or slightly below As) in middle school, they experienced greater success when attending high school with many peers from their middle school.

Overall, results confirm that the transition to high school is accompanied with changes to the social and academic environments of adolescents that may lead to achievement disruptions. Because educational trajectories are so sensitive to this period, it is important to look at changes in academic behaviors across the transition. In a study that includes the transition as a predictor of engagement or other academic behaviors, it may be important to consider also protective factors as predictors that might buffer the negative effects of this transition.

In summary, engagement in one school and then transition to the next school may predict a drop in engagement. This may be especially pertinent for students changing from private to public school where the size of the public school may be considerably larger than the size of the private school; the student may experience an increase in anonymity and perceive less support at the school. For all students, the transition to high school often represents a new set of teachers, peers and expectations, which may reveal itself in a change in the range of demands students experience (Rudolph et al., 2001). Thus, there is an empirical basis for looking at school transitions as a predictor of engagement.

III. METHOD

Sample and Procedure

Data for the present study were drawn from the National Educational Longitudinal Study (NELS), a large, nationally representative sample of eighth-grade adolescents who also were surveyed through follow-ups in tenth and twelfth grade, and post high school. The sample for this study consisted of 10,364 students; 53% of which are female, 71% of which are European American, 13.4% of which are Hispanic/Latino, and 9% of which are African-American. The NELS includes five waves, the first three of which (i.e., 8th, 10th, and 12th grades) were used for this study. The base year (8th grade) of the NELS is designated as time 1 (T1); time 2 (T2) took place in the students' sophomore year of high school and time 3 (T3) took place in the students' senior year of high school. Information at T2 indicates whether students changed to a new school type (e.g., public to private) or remained in the same type of school (e.g., public to public) during the transition from middle school to high school. This longitudinal study used adolescent self-report data to examine growth in engagement from the beginning of middle adolescence (8th grade) to the onset of late adolescence (12th grade). Engagement was measured as time spent on homework during T1, T2, and T3.

Predictors of growth in engagement were *time* (T1 eighth grade, T2 tenth grade, and T3 twelfth grade), *social support* (perceived parent involvement and perceived teacher support at T1 and T2), *future orientation* at T1 and T2, and whether the student moved from a private school to a public school, a public school to a private school, or remained in the same type of school, public to public or private to private during the middle school to high school transition (T2).

*Measures*⁴

⁴ See Appendix A for the full set of variables used in the current study.

Engagement. Assessments of the adolescents' engagement were completed by the adolescents at each wave (8th grade, 10th grade, 12th grade). The engagement scale contains similar items at all three waves. Wave 1 includes 5 items; the items assess time spent on homework in several classes—math, science, English, social studies, other subjects. Each item is scored on a 5-point scale (0 = 'none', 1 = "1-3 hrs", 2 = '4-6 hrs', 3 = '7-9 hrs', and 4 = 10 hours and above). Wave 2 and 3 include 10 items. Like Wave 1, the items in Wave 2 & 3 assess time spent on homework in several classes—math, science, English, social studies, other subjects, on the same scale as wave one. The scales were recoded so that engagement items at all three waves were on the same 5 point scale; higher scores indicate more time engaging in homework. More items were included at T2 and T3 because of the way questions were asked. For instance, time spent on homework in school and time spent on math homework out of school are two different items in waves 2 and 3, whereas they were consolidated into one item in wave 1. The reliabilities are as follows: $\alpha=.76$ at wave 1, $\alpha=.83$ at wave 2, and $\alpha=.83$ at wave 3. Examination of the variable distributions indicated minor skewness for engagement, which was moderately positively skewed. The unconditional means and unconditional growth model were fit before and after transforming engagement; a square root transformation was used. The transformed engagement variable was reduced from a skew of 1.43 to -.96.

Inter-item correlations revealed modest associations among all the engagement variables, wave by wave (see Appendix B). In-school homework items generally correlated strongest with other in-school homework items and out-of-school homework items generally correlated strongest with out-of-school homework items. Following a similar pattern, T1, T2, and T3 engagement correlations were generally strongest when looking at time spent on homework for the same subject across waves.

Future Orientation. Assessments of the adolescents' future orientation were completed by the adolescents at the first two waves (T1 and T2). Future orientation was measured with a single item. The item assesses adolescents' perceptions of how far in school they think they will get. The item is scored on a 6-point scale (1 = 'won't finish high school, 2 = will finish HS, 3=voc/trade/business after HS, 4 = will attend college, 5 = will finish college, 6 = 'higher education after college').

Teacher Support. Assessments of the adolescents' perceptions of teacher support were completed by the adolescents at each of the first two waves (8th grade and 10th grade). The teacher support scale contains 6 items at wave 1 and 7 items at wave 2; the items assess perceptions of positive teacher behaviors. Each item is scored on a 4-point scale (1 = 'very much disagree' to 4 = 'very much agree.' One item from both waves ('In class I feel put down by my teachers') was reverse-coded to fit the direction of the scale. Higher scores indicate more perceived support from teachers. The reliabilities at each wave are as follows, $\alpha = .79$ at wave 1, and $\alpha = .80$ at wave 2.

Parental Involvement. Assessments of the adolescents' perception of parental involvement were completed by the adolescents at the first and second wave (8th grade and 10th grade). The parental involvement scale contains 6 items at Waves 1 and Wave 2. These items are very similar across waves and assess academic parental involvement and parental involvement behaviors that relate to academic success. Specifically, the items assess parent-adolescent discussions about school (e.g., discuss school activities with parents) and parents' involvement with monitoring the adolescent (e.g. how often parents limit time watching television). Each item was standardized to fit on a 4-point scale (1 = 'not at all'/'never' to 4 = 'often'/'3 or more times'); Higher scores indicate greater parental involvement. The reliabilities are as follows, $\alpha = .58$ at wave 1, and $\alpha = .87$ at wave 2 (see Table 3). The reason the reliability is so much lower at T1 than at T2 is unclear; the measurements are taken by a single instrument on the same items, thus the items should be measured consistently. In T1, the items pertaining to discussions about school correlate with each other at .5 or above. In T2, the items pertaining to discussions about school correlate with each other at .5 or above, with inter item correlations that are a slightly higher than at T1. At T1, the correlation between how often parents limit going out with friends and how often parents limit watch television is .35.

Type of school change. Dummy codes were created to account for the different types of school change during the middle school to high school transition: (Dummy variable 1) students who remained in a private school from 8th to 10th grade were coded 1, all other types of school combinations were coded 0; (dummy variable 2) students who remained in a public school from 8th to 10th grade were coded 1, all

other types of school combinations were coded 0; (dummy variable 3) students who switched from private school to public school were coded 1, all other types of school combinations were coded 0; (dummy variable 4) students who switched from public to private school were coded 1; all other school combinations were coded 0. First, dummy codes were tested separately in the model to determine whether different types of school change (or lack of change) matter for growth in engagement. Second, dummy codes were entered into the model together. It was predicted that all students would show a drop in engagement from eighth to tenth grade, and that engagement would be lowest in tenth grade; however, students who changed from a private school to a public school would show the greatest drop in engagement when compared with the other groups.

Variation in school change. Crosstabs revealed that the majority of participants (81.2%) remained in a public school from the middle school to high school transition 11.9% moved from a private to private school. Only 4.8% of the sample moved from a private to public school and only 2.1% of the sample moved from public to private school. When using school consistency as a predictor, we focused our attention on students making the transition from public to public (81%), from private to private (12%), from private to public (4.8%), and from public to private (2%).

Control Variables—

Race is a time invariant dichotomous predictor, assessed through adolescent self-report. Dummy codes were created to account for the impact of race on engagement. (Dummy variable 1) European American students were coded 1, all other races were coded 0; (Dummy variable 2) African-American students were coded 1, all other races were coded 0. The majority of the sample (59.6%) is white, 9.8% is black and 12.5% is Hispanic.

Sex is a time invariant dichotomous control variable, 0=male, 1=female. It is assessed through adolescent self-report. The sample is 49% female and 51% male.

Family Structure was assessed with four dummy-coded items, each item yes/no: (1) mother lives in household of respondent, (2) father lives in household of respondent, (3) no parents live in household of respondent, and (4) no relatives live with respondent. Preliminary results revealed that the majority of

participants lived with at least one biological parent. 68% lived with both biological parents and 29% lived with one biological parent. 2.4% of the sample lived with no biological parents and only 0.3% lived with no relatives at all. Because of the small numbers for students in dummy codes 3 and 4, we focused on two comparisons: 1) students who lived with both biological parents in comparison to everyone else, and 2) students who lived with only one biological parent in comparison to everyone else. These dummy codes were entered together and separately, in order to examine the effects in multiple ways.

Behavior Problems were assessed at T1 and T2. The majority of participants, 56.6% received no behavior warnings in 8th or 10th grade. 34.4% of the sample did receive a behavior warning in 8th and/or 10th grade (15% of participants failed to report on this variable).

Socioeconomic status of the student was assessed by the family's yearly income. 1=none, 2=less than \$1,000, 3=\$1,000-\$2,900 up through 15=\$200,000 or more. The mean and median family income was between \$20,000 and \$35,000. 3% came from homes earning \$100,000 or more and only 3% of participants came from homes earning \$3,000 or less yearly income.

8th grade GPA was assessed by a grades composite score that ranged from low to high, where 1 = quartile 1, 2 = quartile 2, 3 = quartile 3, and 4 = quartile 4.

IV. RESULTS

The primary aim of the current study was to explore associations between one facet of behavioral engagement (i.e., time spent on homework) and future orientation, perceived parental involvement and perceived teacher support. Data analyses proceeded in several phases: first, preliminary analyses were conducted to examine the central tendencies and variations within the study's key variables. The descriptive statistics for non-continuous control variables also were examined. Second, each set of outcome and predictor variables also was subjected to factor analysis, as part of creating variables for the analyses that would test the study hypotheses. Third, correlational analyses of associations among the engagement in homework variables and then among the other predictor variables were conducted. Fourth, exploratory regression analysis was run on a random sample of participants in order to estimate the conditional expectation of engagement given time, and fifth, growth curve analysis was used to address the research questions and hypotheses.

Preliminary Analyses

Prior to conducting the primary analyses, descriptive statistics were computed for all potential predictor variables and the dependent variable, engagement. As shown in Table 1, all time varying variables remained relatively stable over time according to the patterns of means and standard deviations. Compared to the other variables, engagement in homework showed more variability. Scores were generally low on each of the scales, except future orientation. Associations between engagement and its predictors were quite modest (see Table 2). Small positive correlations between 8th grade engagement and 8th grade parent involvement and between 10th grade engagement and 10th grade parent involvement also were found, as were small positive correlations between 8th grade engagement and 8th grade future orientation and between 10th grade engagement and 10th grade future orientation. A weak, negative

association was found between 8th grade engagement and 8th grade teacher support and between 10th grade engagement and 10th grade teacher support.

Table 1. Means and standard deviations for all continuous variables.

	M	SD
Grade Point Average	2.6	1.14
SES (Yearly Family Income)	9.6	2.63
8 th Grade Teacher Support	2.1	.51
10 th Grade Teacher Support	2.2	.45
8 th Grade Parent Involvement	2.3	.40
10 th Grade Parent Involvement	2.0	.39
8 th Grade Future Orientation	4.6	1.29
10 th Grade Future Orientation	4.4	1.39
8 th Grade Engagement	.94	.36
10 th Grade Engagement	.97	.43
12 th Grade Engagement	1.24	.52

Table 2. Associations among Continuous Predictor Variables and Engagement.

	8 th Grade Engagement	10 th Grade Engagement	12 th Grade Engagement
8 th Grade Teacher Support	-.15***	-.10***	-.11***
10 th Grade Teacher Support	-.11***	-.17***	-.10***
8 th Grade Parent Involvement	.22***	.14***	.14***
10 th Grade Parent Involvement	.15***	.21***	.19***
8 th Grade Future Orientation	.17***	.13***	.13***
10 th Grade Future Orientation	.18***	.18***	.16***

*** $p < .001$

Empirical growth plots were computed among a random sample to examine individual changes in engagement across all waves. Given this study's interest in assessing change across time, as well as after the transition into high school, engagement was centered at the second time point (i.e., 10th grade), after the transition to high school. We expected the biggest difference in engagement would be seen at Time 2, given the transition taking place between middle school and high school. That is, we expected those with high social support and future orientation and those with low social support and future orientation to show the largest difference between them at time 2. However, although time was centered at 10th grade, we were able to observe the intercepts/means at every time point. The intercepts for 8th and 10th grade are reported. Eighth grade was included to help us better understand where students began in engagement.

For the majority of cases, engagement did not rise above 2, and engagement increased or remained relatively stable as students moved from middle school to and through high school. The majority of cases were linear in form; however, there were exceptions to this pattern regarding engagement. Smooth parametric trajectories superimposed on the empirical growth plots revealed that the majority of points were at the low end of the scale. There appeared to be a relationship of direct proportionality such that as time increased, so did engagement scores. Thus, it was subjectively concluded that the majority of cases were characterized by an increasing linear change in engagement. Following

examination of the growth plots, ordinary least squares regression was used to fit separate linear change models to each student’s empirical growth record of engagement over the three waves. Coefficients revealed considerable variability in engagement among participants. Thus, time was doing a good job explaining variability in engagement.

In order to further examine changes in engagement over time both an unconditional means and unconditional growth model were fit to the data. We fit this model first with an untransformed engagement variable. Model A, the unconditional means model, estimated individual level variance in the intercept of engagement. In this model, engagement scores varied by individuals, but time was not considered. In Model B, the unconditional growth model, variance in the individual slopes and covariance between intercept and slope estimates were considered. In this model, time was the only predictor of engagement. We can see from Table 3 that the average initial status in engagement was .99, which was statistically significant at the $p < .001$ level, indicating that the average engagement score was statistically different from zero. Therefore, we rejected the null hypothesis that engagement is zero in the population. Both the within person and initial status variance statistics were statistically significant at the $p < .001$ level, which indicates that engagement varies over time and there were between-individual differences in engagement.

Table 3. Unconditional Means Model for Engagement Prior to Transformation

	Parameter	Model A	Model B
Fixed Effects			
Initial Status (π_{0i})	γ_{00}	.99*** (0.00)	1.02*** (.00)
Rate of Change (π_{1i})			.05***

(Table continues on next page)

(Table continued)

				(.00)
Variance Components				
Level 1				
Within Individual	σ^2_{ϵ}	.14***		.11***
		(0.00)		(0.00)
Initial Status	σ^2_0	.04***		.06***
		(0.00)		(0.00)
Rate of Change	σ^2_1			.02***
				(0.00)
Covariance	σ^2_{01}			.01***
				(0.00)

*** $p \leq .001$

Findings for the Initial Model

We ran an unconditional means and unconditional growth model with the transformed engagement variable, two models which allowed us to partition and quantify the outcome variation. In the unconditional means model, the intraclass correlation coefficient was .25, indicating that there was systematic variation in our outcome worth exploring. Next, we tested a liner growth curve model in order to examine how engagement, independent of intra- and inter-individual factors, developed over time. Both the intercept and the slope coefficient in this model were statistically significant at the $p < .001$ level, indicating that, on average, the intercept of engagement in homework was 1.02 and for each unit of time, in this case school waves, it increased by .05, a change that was statistically significant (see Table 4, column 4). The significant intercept represents the mean 10th grade point of engagement and implies that

adolescents, on average, scored above zero on the engagement in homework scale in tenth grade.

Variance statistics for the unconditional growth model were statistically significant for within-individual, initial status, rate of change variance, and covariance. Thus, engagement in homework showed within-individual and between-individuals variation over time. The Pseudo R^2 was .06, indicating that 6% of the within person variation in time spent on homework was explained by linear time. This model resulted in a good fit to the data (see table 5). The goodness of fit statistics chosen were tests between models. All seven models were ranked and the values with the lowest AIC, BIC and -2 log likelihood were considered the best. (Note: Model A was the unconditional means; Model B was the unconditional growth; Model C was a model with just controls; Model D was a model with controls and predictors; Model E was a model with the controls and predictors when T1 and T2 were averaged together; Model F was a model with the controls that were significantly related to the intercept and/or slope and predictors at each time point; Model G, the final model, was a model with the controls that were significantly related to the intercept and/or slope and predictors when T1 and T2 were averaged together. Variations on these models were also tested to include different dummy variables and different combinations of variables.) Model G was chosen because it was the best fit for a model, given the predictors that needed to be evaluated. See Figure 3 for a graphic showing of engagement over time without predictors. The pattern seen does not support hypothesis one, where a drop in engagement was anticipated, rather than an increase (the means in Table 1 also suggest a linear pattern). However, it is important to note that we could not fully test Hypothesis 1 given that we did not have enough data points to test a quadratic term.

Table 4. Unconditional Growth Model and Final Model for Engagement in Homework

	Parameter	Unconditional Growth	Final Model
Fixed Effects			
Initial Status (π_{01})	γ_{00}	1.98*** (.00)	1.63*** (.02)
Low P Involvement			1.93*** (.01)
High P Involvement			2.08*** (.01)
Low T Support			2.06*** (.01)
High T Support			1.98*** (.01)
Low Future Orientation			1.96*** (.00)
High Future Orientation			2.06*** (.00)
Public to Public Trans.			2.00*** (.01)
Other School Trans.			2.06*** (.01)
Sex			1.98*** (.00)

(Table continues on next page)

(Table Continued)

SES		2.00
		(.00)
GPA		2.00
		(.00)
Behavior Problems		1.98***
		(.00)
Rate of Change (π_{1i})	1.02***	0.99***
	(.00)	(.00)
Low Parent Involvement		1.02
		(0.00)
High Parent Involvement		1.02
		(0.00)
Low Teacher Support		1.02
		(.00)
High Teacher Support		1.02
		(.00)
Low Future Orientation		1.19***
		(.00)
High Future Orientation		1.35***
		(.00)
Public to Public Trans.		1.02**
		(.00)

(Table continues on next page)

(Table continued)

Private to Private			1.01
			(.00)
Private to Public			1.01
			(.00)
Variance Components			
Level 1			
Within Individual	σ^2_e	.03***	.03***
		(0.00)	(.00)
Level 2			
Initial Status	σ^2_0	.01***	.01***
		(0.00)	(.00)
Rate of Change	σ^2_1	.00***	.00***
		(.00)	(.00)
Covariance	σ^2_{01}	.00***	.00***
		(0.00)	(.00)
Goodness of Fit			
-2 Log Likelihood			-8889.675
AIC			-8849.675
BIC			-8696.013

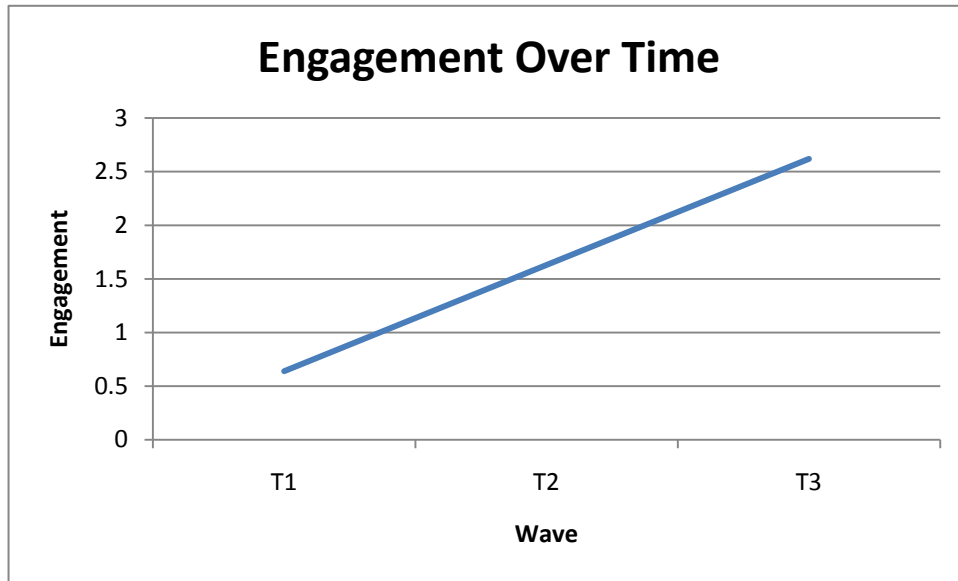
* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Table 5

Goodness of Fit Statistics

	-2 Likelihood	AIC	BIC
Model A	-8671.601	-8665.601	-8641.363
Model B	-9835.269	-9823.269	-9774.792
Model C	-9798.611	-9774.611	-9681.060
Model D	-9810.487	-9782.487	-9673.344
Model E	-9879.848	-9851.848	-9742.706
Model F	-8956.274	-8922.274	-8791.538
Model G (<i>Final Model</i>)	-8889.675	-8849.675	-8696.013

Figure 3.



Note: Values are corrected for skew

Findings for the Study Hypotheses

In the next step we tested our hypotheses by examining the role of our key predictors on engagement in homework over time among adolescents; this includes testing the final model with all the

predictors as assessed at 8th and 10th grade. This model showed good fit (see Table 5). The pseudo R^2 for the final model is .16, indicating that our final model explained an additional 10% of the within person variation in time spent on homework (6% of the variation was explained by linear time.) All estimates of these analyses are presented in Table 4. The final model included controls for gender, socioeconomic status, prior achievement (e.g. eighth grade GPA), and behavior problems in eighth or tenth grade. Other predictors discussed in literature review were removed because of their lack of relation to the intercept and/or slope.

Parental Involvement. Findings demonstrated that parental involvement was significantly and positively related to the intercept of time in homework ($\beta_0 = 2.01, p < .001$). Students high on parental involvement had a higher intercept for engagement in homework than those low on parental involvement (see Table 6). Parental involvement’s effect on the rate of change, however, was nonsignificant. When parent involvement was removed from the final model, the pseudo R^2 dropped to .15, indicating that the amount of within-person variation in time spent on homework explained by parental involvement alone was 1% .

Table 6. Engagement for Students with High and Low Predictors

	8 th Grade	10 th Grade	12 th Grade
Low Parental Involvement	.91	1.93	2.95
High Parental Involvement	1.06	2.08	3.10
Low Teacher Support	1.04	2.06	3.08
High Teacher Support	.96	1.98	3.00
Low Future Orientation	.94	1.96	2.98
High Future Orientation	1.04	2.06	3.08

For the sample as a whole, eighth and tenth grade parental involvement did predict differences in the 8th and 10th grade means in engagement in homework behavior; however, parental involvement did not significantly predict rate of change in engagement in homework. Thus, the amount of parental

involvement in eighth and tenth grade does influence intercept mean of engagement in homework but not the trajectory of subsequent engagement in homework behavior.

Teacher Support. Findings demonstrated that teacher support was significantly and negatively related to the intercept ($\beta_0 = 2.02, p < .001$). Students high on teacher support had a lower intercept of engagement in homework than those low on teacher support (see Table 6). The effect of teacher support on the rate of change, however, was nonsignificant. When teacher support was removed from the final model, the pseudo R^2 dropped to .14, indicating that the amount of within-person variation in time spent on homework explained by teacher support alone was 2% .

For the sample as a whole then, eighth and tenth grade teacher support did predict differences between the 8th and 10th grade mean engagement in homework behavior, albeit in an unanticipated direction; however, teacher support did not significantly predict change in engagement in homework. Thus, the amount of teacher support in eighth and tenth grade does influence intercept or mean of engagement in homework but not the trajectory of subsequent engagement in homework behavior.

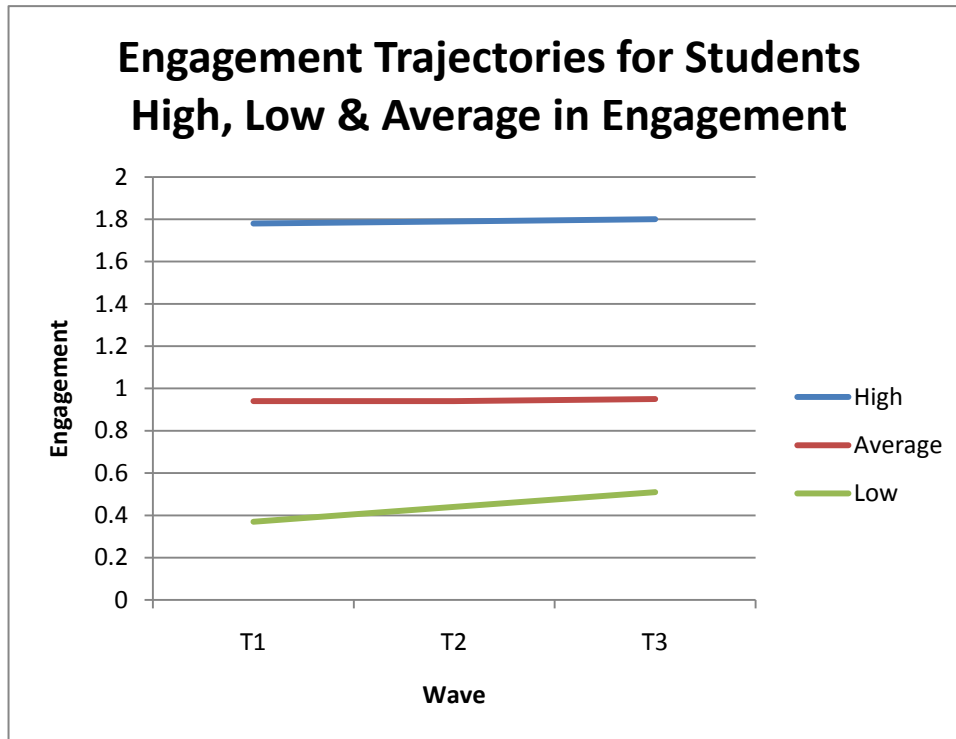
Future Orientation. Findings demonstrated that future orientation was significantly and positively related to the intercept ($\beta_0 = 2.01, p < .001$). Students high on future orientation had a higher intercept of engagement in homework than those low on future orientation (see Table 6). The effect of future orientation on the rate of change was positive and moderately significant (see Table 4). When future orientation was removed from the final model, the pseudo R^2 dropped to .13, indicating that the amount of within-person variation in time spent on homework explained by future orientation alone was 3%

For the sample as a whole then, eighth and tenth grade future orientation did predict differences between the 8th and 10th grade mean in engagement in homework behavior; additionally, future orientation did predict change in engagement in homework, with higher eighth and tenth grade values of future orientation being associated with faster increases in engagement in homework behavior over time. Thus, the amount of future orientation in eighth and tenth grade does influence the intercept of engagement in homework as well as the trajectory of subsequent engagement in homework behavior.

School Transition. When dummy variables for three of the four school transition groups were entered into the model together (private to public, public to public and private to private), all but the public to public group were nonsignificant. Those who transition from a public middle school to a public high school are lower in engagement than those in the other school type transitions. The private to public school did not show the greatest decrease in engagement in homework; however, testing this hypothesis was problematic given the imbalance in the cell sizes.

Subsequent Analysis. Analyses were also performed to examine engagement trajectories when considering the distribution of homework engagement based on the 8th grade intercept (see Figure 4). High engagement, low engagement, and average engagement subgroups were created. (e.g. 1 SD above the mean was considered high, 1 SD below the mean was considered low, and those who fell between the high and low group were considered average). When only students with high engagement were entered into the unconditional growth model, the intercept was 1.74. Rate of change was not significant. When students low in engagement were entered into the model, the 8th grade engagement intercept was .24, with a significant, positive rate of change. When only students with average engagement were entered into the unconditional growth model, the intercept was .94 with a significant, positive rate of change. When all students were entered into a model, the eighth grade intercept of engagement was .93. The rate of change of .05 for this group was positive and significant. This means that students average in engagement had an 8th grade intercept similar to that of the entire sample, while less engaged students had a much lower 8th grade intercept of engagement when compared to the entire sample, and more engaged students had a much higher 8th grade intercept of engagement. The rate of change was significant only for those students average in engagement and low engagement; those high in engagement did not change significantly over time.

Figure 4. Trajectories for Students High, Low and Average in 8th Grade Intercept of Engagement



Note: Values not corrected for skew

In a model with predictors (base year future orientation, parent involvement and teacher support, and first follow up future orientation, parent involvement and teacher support) the intercept was 1.53 for the high group, .22 for the low group, .87 for the average group, and .56 for the whole sample. Rate of change was negative and not significant for the high group, but positive and significant for the other groups (low group, average group, and the entire sample). Results indicate also that growth in engagement was different for students high in engagement when compared to students low in engagement and average in engagement, as the trajectory for students high in engagement was flatter than for those low in engagement.

Finally, in the full sample, all the predictors had a significant effect on the intercept, with teacher support being negative and all other predictors in the positive direction. When running the model with just those students high in engagement, none of the predictors had a significant impact on the intercept of

engagement. When running the model with just those students low in engagement, only 8th year teacher support, 10th grade future orientation, and 10th grade parent involvement were significant, and teacher support was negative, whereas the other predictors were positive. When running the model with just those students average in engagement, 8th year future orientation was the only predictor not to have a significant impact on the intercept; 8th and 10th grade teacher support was negative and significant, whereas the coefficients for the other predictors were positive and significant. The largest coefficients were for 8th grade parent involvement (.03) and 10th grade parent involvement (.02).

V. DISCUSSION

The results of the current study indicate that the association between engagement in homework and exposure to supportive adult relationships, future orientation and a school transition is a complicated one. Our hypotheses were weakly supported or showed patterns that differed from what was expected. Students higher on parental involvement and future orientation were significantly higher in engagement in homework after making the transition to high school than were students lower on these predictors. Furthermore, future orientation was associated with the rate of change in engagement. Higher future orientation was associated with greater increases in engagement in homework from 8th to 12th grade. Effect sizes were quite small. This is not surprising as larger effect sizes were not expected for this kind of study. In the education literature, it is understood that an outcome like adolescent engagement in homework is vulnerable to a wide body of influences (Jennings, 2003; Ladd & Dinella, 2009; Marks, 2000; Singh, et al., 2002; Sirin & Rogers-Sirin, 2005; Skinner, et al., 2008; Wooley & Bowen, 2007.) Moreover, there is a paucity of research addressing the factors we considered in this study, especially research using large, nationally representative datasets like the NELS. Our final hypothesis that the private to public school change during the transition from middle school to high school would predict the greatest decrease in engagement in homework was not supported. However, the overwhelming majority of the sample made a transition between a public to a public school and subsequently the cells being compared were too imbalanced to draw any conclusions. It is possible, however, that the public to public group predicted lower engagement than the other transition types because of factors related to size and school organization; students making the transition from public to public school may be moving to schools with bigger class sizes and may engage less in schoolwork because it is easier to slip through the cracks. Overall in the present study, we observed quite modest but nonetheless significant effects, which do offer directions for subsequent research.

The current study extends the research addressing school engagement by complementing the linear mediation model (Connell et al., 1994) which demonstrates the relationship between context, self, action, and outcome. As expected, compared with adolescents with less supportive teachers and less involved parents, adolescents with higher future orientation and for whom there was more social support engaged more in homework, irrespective of the adolescent's gender, socioeconomic level, grade point average or record of behavioral problems. This study is one of the first to use components from the linear mediation model to predict engagement as an outcome, and was successful in documenting that social support and future orientation are beneficial for students' academic behavior, as measured by time spent on homework. Results also showed that the involvement of parents was a more potent influence on time spent on homework than was the support of teachers, and only future orientation mattered for rate of change in homework engagement.

There have been few longitudinal assessments of engagement. The few that have been conducted show that engagement levels do not remain the same throughout school; even steep declines have been observed as students progress through their educations (Archambault et al., 2009; Finn & Rock, 1997). Thus, another contribution of this study is that, although we see growth in engagement, this growth is relatively flat with very modest increases over time, similar to what was found in Janosz et al., 2008. It is possible to reconcile our findings with those of other studies. First, there were limitations to the approaches used by Finn and Rock and Archambault et al. Finn and Rock used multivariate regression which is not a technique designed to measure growth, and Archambault et al. looked at engagement as a predictor and not an outcome over a two-year period using structural equation modeling.

Second, Janosz et al., 2008 used a homogeneous sample and engagement was the predictor variable, although they also observed how it changed over time. To observe change in engagement, they used growth mixture modeling (GMM), an amalgamation of latent growth modeling and latent class analysis which revealed that, although students fell on different trajectories (normative, stable moderate, and stable high), the engagement of most groups remained relatively stable over time. Only 8% of the sample was subject to great variability, with a pattern that was quadratic in nature. Results from our

subsequent analysis indicated that growth in engagement is different for students high in engagement when compared to students low in engagement and average in engagement (see Figure 4). Our results are consistent with findings in Janosz et al. (2008), in which the engagement level of the majority of the student sample was sustained over time, but differed in that these students did not have high levels of engagement. Also similar to Janosz et al., the small percentage of students with lower levels of engagement experienced greater variability in engagement. Thus, our findings suggest that the shape of engagement is different from students with different 8th grade intercepts of engagement. Together, these studies point to the need to continue looking at the between-individual and within-individual variation that leads to differences in growth in engagement. Such results emphasize the need for future studies to examine the growth and shape of engagement over time for varied subsets of adolescents and key factors that predict and moderate change in engagement over time.

There were some unexpected results, and thus, the findings for the current study suggest important questions that need to be pursued in order to better address the associations between social support, future orientation and student engagement. Neither parental involvement nor teacher support was associated with growth in engagement. Social support only had a relationship with the mean levels of engagement in 8th and 10th grades, and teacher support showed a negative association with engagement. Thus, one question that follows from our results is, are we measuring the teacher/child side of school academic outcomes well enough? Perhaps we need more insights into the elements of the relationships supportive adults have with adolescents to consider the underlying features that may make for more helpful relationships for all students. Questions normally used to assess the support of teachers may not be broad enough to fully capture the association between the support and involvement of significant adults and adolescent engagement in homework in an academic context. Perhaps there is something going on with teachers in that their work with adolescents takes place in the school context that is unique from the involvement of parents in the home context (Aunola et al., 2000; Gonzalez-DeHass et al., 2005; Grolnick & Slowiaczek, 1994). Another possible explanation for this unexpected result for teacher support is that teachers typically spend more effort helping those students who are struggling with getting

their homework done. That is, the teacher may take more time to communicate with and help a student who is not doing well compared to a student who is doing well. Alternately, students who are more supported by their teachers at school may not need to spend as much time on homework because they are able to complete it faster. (It is important to note, however, that the relationship between teacher support and the magnitude of change in engagement in homework was nonsignificant).

Only future orientation was related to linear growth indicating that increases in engagement in homework of students is associated with their level of future orientation. This findings is consistent with the work of Oyserman and colleagues, suggesting that an adolescent's concern with his/her future relates to his/her positive school outcomes (Oyserman, Terry, & Bybee, 2002; Oyserman, Brickman, & Rhodes, 2007). Future research may benefit from looking at future orientation (and other key variables) as time varying predictors of engagement. The current study focused primarily on between person predictors, but future studies may benefit from looking at changes in predictors, such as future orientation, over time and how those changes affect engagement in homework.

Limitations

There are several limitations to this study. First, because of limitations of the NELS dataset, the growth trajectories for engagement in homework are limited to a linear 3-time point model. Although this model appeared to be a good fit to the data, exploratory regression did reveal a quadratic pattern for several students in a random sample (30%). A study with more time points considered would be helpful. A different pattern might have been observed had engagement also been measured in 9th and 11th grade. In particular, it may be that a drop in engagement may have been observed between 8th and 9th grades when many students make the transition from middle school to high school. Second, given the nature of the future orientation measure in the NELS, it was a single item predictor in the present study. As future orientation was a significant predictor of both where students begin in engagement in homework after the transition to high school and their rate of change, it is possible a more robust indicator of future orientation would strengthen these associations.

Third, we were not able to fully address our research question regarding the impact of a school transition on growth in engagement. It is difficult to fully understand school transition with the available school transition variables. Given the way the school transition variables were originally coded, it is not possible to distinguish students who remained in the same public or private school when they made the transition from middle school to high school. Past research has suggested that remaining in the same school compared with changing to a new school makes a difference in student engagement over time (Felner et al., 1982; Gutman & Midgley, 2000; Isakon & Jarvis, 1999). Moreover, we did not have enough in the different school type groups (i.e., public to private, private to public, private to private) given that most were in the public to public group (81%); therefore it was difficult to compare the other types of school transitions given the lack of balance in the sizes of these groups.

Fourth and finally, it is important to address the limitation of using only “time spent in homework” as an indicator of engagement. A broader construct for engagement will be important to include in future studies. The three dimensions of engagement are cognitive, emotional and behavioral (Connell & Wellborn, 1991). There is diversity in the dimensions, as each dimension speaks to a different facet of engagement. It is plausible that each dimension may relate to social support and future orientation differently. Social support, for instance, may relate better to emotional engagement, as emotional engagement focuses on students’ energy levels and attitudes regarding schoolwork, and cognitive engagement, as cognitive engagement focuses on students’ investment in learning and beliefs about the importance of learning. Teacher support, in particular, takes place in the school setting. A supportive teacher is uniquely positioned to inspire and motivate, which may lead to a relationship that could be amplified more in the apathetic student. This supportive relationship may not necessarily translate easily or quickly to behavioral changes. Future orientation, which has to do with how an adolescent perceives his/her future, may also relate to changes in beliefs and attitudes a student has about himself and his work; but a student who has not also learned specific behavioral strategies to accompany the changes in beliefs may still exhibit low levels of behavioral engagement. Thus, it is plausible that we would see a stronger relationship between students high and low in future orientation and students high

and low in cognitive and emotional engagement; in theory, these other forms of engagement could be a precursor to behavioral engagement.

Although the evidence for an engagement-achievement relationship has been strong, time spent on homework has rarely been investigated as an outcome. Moreover, it is not entirely clear that this particular aspect of engagement predicts achievement. Keith and Cool (1991) note that the relationship between time spent on homework and achievement is not as clear as it could be because, although homework and achievement have been found to relate in many studies, causation has not been determined. For instance, does a relationship between 'time spent on homework' and achievement indicate that 'time spent on homework' is meaningful, or rather, does it indicate that teachers assign more homework to more academically rigorous students?

To begin addressing some of our concerns, we conducted subsequent exploratory analyses that permitted examination of the more diverse assessment of engagement collected in 12th grade but not in 8th or 10th grades. In the first set of analyses, multiple regression was used to examine our set of predictors with three different forms of 12th grade engagement (e.g. A= pro-academic behavior including copying notes, listening to the lecture, frequency of paying attention, and frequency of doing more than required, B=time spent on homework, and C=preparedness for class). When predicting the different types of engagement in 12th grade with parent involvement, teacher support and future orientation in 8th and 10th grades, results revealed differences between the different engagement types.

Results showed the highest R^2 ($R^2 = .10$) for explaining engagement as pro-academic behavior, indicating that, for this facet of engagement, 10% of the variance can be predicted by the combination of independent variables (teacher support, future orientation and parent involvement). Results revealed an R^2 of .05 when engagement was time spent on homework, indicating that, for this facet of engagement, 5% of the variance can be explained by the combination of predictor variables. Finally, results revealed an R^2 of .03 when engagement is preparedness for class, indicating that, for this facet of engagement, 3% of the variance can be explained by the combination of predictor variables. These results suggest new ideas about the set of predictors were used and the nature of engagement. First, the set of predictors we

are using are not explaining more than 10% of the variance in engagement; which means, overall, we are only explaining a small part of what is going on in engagement. This would suggest that there is still more to understand in the structure of engagement and in the predictors we use to get at engagement. Second, our chosen predictors work best when behavioral engagement is a combination of pro-academic behaviors. See Table 7 for significance levels of each predictor when explaining engagement outcomes. Teacher support was only significant when explaining pro-academic behavior and preparation for class, but not time spent on homework. Parent involvement was only significant when explaining time spent on homework and preparation for class, but not pro-academic behaviors. The second wave of future orientation was only significant when explaining pro-academic behavior and preparation for class, but not time spent on homework. The first wave of future orientation was moderately significant when explaining time spent on homework, but did not significantly explain pro-academic behavior or preparation for class. These results demonstrate how important each predictor variable was in explaining each of the outcomes; however, they also show that different facets of engagement explain different forms of engagement in diverse ways. We note that the effects for parents and teachers are particularly interesting, as they seem to indicate that parents and teachers play complementary roles.

Table 7. Regression analysis predicting 12th grade engagement

Variable	Pro Academic Behavior		Time Spent on Homework			Prepared for Class			
	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Constant	1.64	.07		.60	.11		3.67	.08	
T1 Teacher Support	.07	.01	.06***	-.03	.02	-.03	-.12	.02	-.01***
T2 Teacher Support	.12	.02	.09***	-.03	.03	-.03	-.16	.02	-.12***
T1 Parent Involvement	-.04	.02	-.03*	.09	.03	.07**	.05	.02	.03***

(Table
Continues)

(Table
Continued)

T2 Parent Involvement	-.04	.02	-.03*	.17	.03	.13***	.23	.02	.14***
T1 Future Orientation	.01	.01	.01	.02	.01	.05*	-.01	.01	-.01
R ²	.10***					.05***		.03***	

* $p < .05$, ** $p < .01$, *** $p < .001$

Future Research

The concept of school engagement has received some theoretical attention, however there is need for more empirical research on its nature and course. Our findings provide evidence that the engagement behavior that leads to the academic success of adolescents benefits from time, the support of significant adults and future orientation. However, we also learn that there is much more to learn.

Earlier in the discussion we noted the need to continue looking at the between-individual and within-individual variance that leads to differences in growth in engagement. It would be desirable for future longitudinal studies to use the Context-Self-Action-Outcome model to assess a broader construct of engagement as an outcome, using both intrapersonal and interpersonal predictors. Along those lines, future studies should consider how the interaction of different intrapersonal and interpersonal predictors affects engagement. For example, would students high on other self-related variables, like self-concept, self-esteem and identity, be more engaged in school; and would they experience more dramatic changes in engagement? Moreover, it is worthwhile to understand the nature of the teacher practices and parent practices that contribute to adolescent perceptions of supportive adult relationships. Such information could lead to a better understanding of the social support-engagement relationship, as well as a better understanding of more effective engagement interventions. It may also be helpful for future studies to consider teacher self-report and parent self-report alongside student self-report of these key variables. Such information could enhance our understanding of what is happening in the parent-student relationship

and teacher-student relationship—for instance, do teachers and students have the same understanding of what constitutes supportive teacher-student relationships? Finally, we were not able to test the school transition hypothesis appropriately because of a lack of power and limitations to how the school transition variable was measured. Thus, future research will need to be conducted that has a greater balance among students who fall in the different school type groups, and additional information about the school context and whether a student stayed in the same school or changed to a new school when making the transition from middle school to high school also would aid in understanding how the transition from middle school to high school affects engagement.

Conclusion

The implications we can draw from this study are as follows. One, engagement is an important aspect of what goes on in schools and is key to the success of adolescents; thus, our lack of success in pinpointing those relationships that would be paramount to stable and high trajectories in engagement is as frustrating as it is illuminating. Clearly, the relationship between social support, future orientation and engagement is a complicated one. Thus, our results point to the need to further examine this relationship, especially with longitudinal designs and across the middle to high school transition. Second, we learn from our study that support does matter, and that the effect of parent involvement on engagement is unique from the effect of teacher support, especially when considering growth in engagement. Third, we learn that a student's future orientation does matter; how a student perceives his/her future does have implications for how he/she will engage in school. Ultimately, this study is important because it demonstrates several significant influences on student engagement, and highlights the importance of studies that examine the factors that influence this engagement.

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APPENDICES

Appendix A: MEASURES AT EACH WAVE

BASE YEAR

BASE YEAR ENGAGEMENT

TIME SPENT ON MATH HOMEWORK EACH WEEK
TIME SPENT ON SCIENCE HOMEWORK EACH WEEK
TIME SPENT ON ENGLISH HOMEWORK EACH WEEK
TIME SPENT ON SOC STUDIES HOMEWK EACH WK
TIME SPENT ON ALL OTH SUBJECTS EACH WEEK

BASE YEAR PARENT INVOLVEMENT

DISCUSS PROGRAMS AT SCHOOL WITH PARENTS
DISCUSS SCHOOL ACTIVITIES WITH PARENTS
DISCUSS THINGS STUDIED IN CLASS WTH PRNTS
HOW OFTEN PARENTS CHECK ON R^S HOMEWORK
HOW OFTEN PARENTS LIMIT TIME WATCHING TV
HOW OFTN PRNTS LIMIT GOING OUT WTH FRNDS

BASE YEAR FUTURE ORIENTATION

CHANCES THAT R WILL GRADUATE FROM H.S.
CHANCES THAT R WILL GO TO COLLEGE

BASE YEAR TEACHER SUPPORT

TEACHING IS GOOD
TEACHERS ARE INTERESTED IN STUDENTS

BASE YEAR FAMILY STRUCTURE

MOTHER LIVES IN HOUSEHOLD OF RESPONDENT
FATHER LIVES IN HOUSEHOLD OF RESPONDENT
PARENTS' MARITAL STATUS

BASE YEAR CONTROLS

RACE
SEX
HOUSEHOLD SES

FOLLOW UP 1

FOLLOW UP 1 ENGAGEMENT—

TIME SPENT ON HOMEWORK IN SCHOOL
TIME SPENT ON HOMEWORK OUT OF SCHOOL
TIME SPENT ON MATH HOMEWORK IN SCHOOL
TIME SPENT ON MATH HOMEWORK OUT OF SCHL
TIME SPENT ON SCIENCE HOMEWORK IN SCHOOL
TIME SPENT ON SCIENCE HOMEWRK OUT OF SCH
TIME SPENT ON ENGLISH HOMEWORK IN SCHOOL
TIME SPENT ON ENGLISH HOMEWRK OUT OF SCH
TIME SPENT ON HISTORY HOMEWORK IN SCHOOL
TIME SPENT ON HISTORY HOMEWRK OUT OF SCH
TIME SPENT ON ALL OTH SUBJECTS IN SCHOOL

TIME SPENT ON ALL OTH SUBJECTS OUT SCHL

FOLLOW UP 1 PARENT INVOLVEMENT
HOW OFTEN PARENTS CHECK R^S HOMEWORK
PARENTS LIMIT TIME WITH FRIENDS
DISCUSSED SCHOOL COURSES WITH PARENT
DISCUSSED SCHOOL ACTIVITIES WITH PARENT
DISCUSS THINGS STUDIED IN CLASS W/PARENT
HOW OFTEN DISCUSSED GRADES WITH PARENTS

FOLLOW UP 1 FUTURE ORIENTATION
CHANCES THAT R WILL GRADUATE FROM H.S.
CHANCES THAT R WILL GO TO COLLEGE

FOLLOW UP 1 TEACHER SUPPORT
TEACHING IS GOOD
TEACHERS ARE INTERESTED IN STUDENTS

FOLLOW UP 2

FOLLOW UP 2 ENGAGEMENT
TIME SPENT ON MATH HOMEWORK IN SCHOOL
TIME SPENT ON MATH HOMEWORK OUT OF SCHL
TIME SPENT ON SCIENCE HOMEWORK IN SCHL
TIME SPENT ON SCIENCE HOMEWRK OUT OF SCH
TIME SPENT ON ENGLISH HOMEWORK IN SCHL
TIME SPENT ON ENGLISH HOMEWRK OUT OF SCH
TIME ON HIST/SOC. STUD. HMWRK IN SCHL
TIME ON HIST/SOC.STUD. HMWRK OUT SCH
TIME SPENT ON ALL OTH SUBJECTS IN SCHL
TIME SPENT ON ALL OTH SUBJECTS OUT SCHL
TOTAL TIME SPENT ON HMWRK IN SCHOOL
TOTAL TIME SPENT ON HMWRK OUT SCHOOL

Appendix B

Associations among 8th grade Engagement Items.

	BYS79A	BYS79B	BYS79C	BYS79D	BYS79E
BYS79A	-	.41	.44	.41	.38
BYS79B	.41	-	.48	.48	.38
BYS79C	.44	.48	-	.48	.35
BYS79D	.41	.48	.47	-	.38
BYS79E	.38	.38	.35	.38	-

Appendix C

Associations among 10th grade Engagement Items.

	F1S36	F1S36	F1S36	F1S36	F1S36	F1S36	F1S36	F1S36	F1S36	F1S36
	A1	A2	B1	B2	C1	C2	D1	D2	E1	E2
F1S36A1	-	.24	.61	.22	.59	.21	.54	.18	.53	.21
F1S36A2	.24	-	.17	.53	.19	.51	.16	.47	.20	.43
F1S36B1	.61	.17	-	.33	.63	.18	.60	.18	.55	.20
F1S36B2	.22	.53	.33	-	.23	.46	.21	.50	.21	.45
F1S36C1	.59	.19	.63	.23	-	.26	.65	.20	.59	.19
F1S36C2	.21	.51	.18	.46	.26	-	.20	.48	.25	.49
F1S36D1	.54	.16	.60	.21	.65	.20	-	.27	.57	.17
F1S36D2	.18	.47	.18	.50	.20	.48	.30	-	.16	.46
F1S36E1	.53	.20	.56	.21	.59	.25	.56	.16	-	.43
F1S36E2	.21	.43	.20	.45	.19	.48	.17	.46	.43	-

Appendix D

Associations among 12th grade Engagement Items.

	F2S25	F2S25	F2S25	F2S25	F2S25	F2S25	F2S25	F2S25	F2S25	F2S25
	A1	A2	B1	B2	C1	C2	D1	D2	E1	E2
F2S25A1	-	.27	.65	.18	.60	.13	.59	.11	.46	.14
F2S25A2	.28	-	.20	.54	.15	.44	.15	.43	.15	.36
F2S25B1	.65	.20	-	.31	.63	.14	.64	.16	.51	.16
F2S25B2	.18	.54	.31	-	.13	.46	.17	.46	.16	.38
F2S25C1	.60	.15	.63	.13	-	.25	.67	.16	.52	.16
F2S25C2	.13	.44	.14	.46	.25	-	.15	.52	.15	.40
F2S25D1	.59	.15	.64	.17	.68	.15	-	.28	.54	.16
F2S25D2	.11	.43	.16	.46	.16	.52	.28	-	.16	.39
F2S25E1	.46	.15	.51	.16	.52	.15	.54	.16	-	.49
F2S25E2	.14	.36	.16	.38	.16	.40	.16	.39	.49	-