ABSTRACT

IMPACT OF PARENTAL INVOLVEMENT AND POVERTY ON ACADEMIC ACHIEVEMENT

by Jeff Lyman

Recent research has indicated that parental involvement can increase a student's academic achievement, but the literature still has not determined which specific aspects of parental involvement help to increase academic achievement for economically at-risk students. This study examined the impact of parental homework involvement and parental school involvement on the academic achievement for a sample of 219 economically disadvantaged students attending 36 schools in a Midwestern state. Parental involvement was measured using factors derived from a parent survey and academic achievement was measured using results from an individually-administered norm-referenced achievement test. Regression analyses were conducted to determine the relationship between a set of two parental involvement variables (i.e., parental homework involvement and parental school involvement) and an academic achievement outcome variable. Regression analyses revealed that parental homework involvement significantly predicted academic achievement, but parental school involvement did not. Implications for research and practice are discussed.

IMPACT OF PARENTAL INVOVLEMENT AND POVERTY ON ACADEMIC ACHIEVEMENT

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Introduction

As of 2009, 21 percent of children in the United States ages 0–17 lived in poverty (FIFCFS, 2011). Students who live in poverty face barriers to academic achievement and therefore need to be resilient in order to perform well in school (Lacour & Tissington, 2011; Martin & Walsh, 2009; Sandy & Duncan, 2010). Resilience is a term that refers to the attainment of positive outcomes (e.g., academic achievement) despite exposure to risks or adversities that threaten normal outcomes (e.g., poverty; see Noltemeyer & Bush, in press). More specifically, academic resilience refers to a student's capacity to overcome adversities that are seen as major barriers on educational processes (e.g. poverty; Martin & Marsh, 2009). Research has revealed several factors that may ameliorate adversity factors and promote resilience, referred to as protective factors. Although protective individual, school, and community factors exist (see Noltemeyer & Bush, 2013), family efforts also serve an important resilience-enhancing function. For example, family support with homework and commitment to education through positive home-school relations foster academic resilience (Catterall, 1998; Martin & Marsh, 2009). This study focused on parental involvement in school relationships with teachers and in assisting with homework for children who are considered economically at-risk. Specifically, this study examined the impact that these forms of parental involvement and poverty have on academic achievement. Findings from the study revealed implications for enhancing resilience and improving academic outcomes.

Review of the Literature

Parental Involvement

The increased pressures for high student academic performance emerging from initiatives set forth by the No Child Left Behind Act (2001) and Race to the Top (2009) initiatives have left parents and educators searching for ways to effectively increase student achievement. One factor that may facilitate academic achievement is parental involvement. Different types and definitions of parental involvement exist in the extant literature including general parental involvement, which can be defined as, "parental participation in the educational process and experiences of their children" (Jeynes, 2007, p.83). Jeynes (2007) indicated that this understanding of parental involvement aligns with other definitions commonly used to describe this construct in the research (Fan & Chen, 2001; Hill & Tyson, 2009; Jeynes, 2005; Jeynes, 2012). This definition transcends any one aspect of parental involvement – such as participation in school functions or homework assistance – encompassing a broad array of activities and attitudes.

General parental involvement has been shown to increase student academic achievement with moderate to large effect sizes (Fan & Chen, 2001; Hill & Tyson, 2009; Jeynes, 2007; Jeynes, 2012). Researchers have suggested different mechanisms through which general parental involvement leads to better academic achievement. Christenson, Rounds, and Gorney (1992) explained that parental involvement motivates students to increase the quality and efficiency of their work. Peng and Wright (1994) suggested that parental involvement contributes to the supportive environment needed for students to succeed. Other explanations for the perceived benefit of general parental involvement include the social capital it provides to the children (i.e. resources and knowledge on how to succeed academically; Hill & Tyson, 2009) and the high expectations for their child's academic success which indicate how parents highly value education (Christenson et al. 1992; Hill & Tyson, 2009; Jeynes, 2007).

General parental involvement has a differential impact on students' achievement based on student age (Fan & Chen, 2001; Hill & Tyson, 2009; Jeynes, 2007; Peng & Wright, 1994). Younger students tend to benefit from general parental involvement more than older students (Hill & Tyson, 2009; Jeynes, 2007; Peng & Wright, 1994). Parents are more involved in their young child's education than they are during the later years of a student's education (Jeynes, 2007). Younger students tend to have fewer teachers responsible for their instruction than older students, which allow parents to get to know their children's teachers better and makes parental involvement more likely (Hill & Tyson, 2009).

Just as general parental involvement for younger students results in higher achievement, general parental involvement for older students also positively impacts academic achievement. At the middle school age, general parental involvement is linked to academic achievement, but it does not have as great an impact as it does at the elementary school level (Jeynes, 2005). Students become more aware of their own strengths and weaknesses as they become older and parental involvement is perceived by the child to be less effective and welcomed (Hill & Tyson, 2009; Jeynes, 2007). Studies examining middle school students indicate that overall parental involvement increases academic achievement but parental assistance with homework is not helpful (Hill & Tyson, 2009). Academic socialization and school-based parental involvement had the strongest significant relationships with academic achievement (Hill & Tyson, 2009), with small (school-based) to moderate (academic socialization) effect sizes observed. When

secondary students experienced general parental involvement, grades increased by up to .40 standard deviations and standardized test scores increased by .47 standard deviations for studies examining both minority and non-minority students (Jeynes, 2007). Thus, the evidence indicates that the positive impact of parental involvement on academic achievement can vary depending on the age of the child. In addition, the positive impact of parental involvement on achievement can also vary based on the qualities of the parents involved in their child's education.

The impact of parental involvement varies depending upon the number of parents involved in the child's education and the gender of the parents and the child (Jeynes, 2005; Tan & Goldberg, 2008). Tan and Goldberg (2008) found that parental involvement from one highly involved parent resulted in the child having less anxiety in school than having two parents with low levels of involvement. Tan and Goldberg (2008) also found that the gender of the parent involved with the child influences the impact of parental involvement on achievement. Mothers are more involved than fathers in their child's education because fathers are more likely to have time constraints from work that limit their involvement (Tan & Goldberg, 2008). The gender of the child also can influence the impact of parental involvement. Jeynes (2005) found that the impact of general parental involvement on achievement was larger for elementary boys (effect size of.62) than for elementary girls (effect size of .52).

Although research has suggested parental involvement impacts achievement differently based on age and gender of the parents and children, it also suggests parental involvement impacts achievement differently based on the type of parental involvement (Dumont et al., 2012; Fan & Chen, 2001; Jeynes, 2007).

Types of Parental Involvement

Although general parental involvement is important to consider, researchers define parental involvement in different ways, and Fan and Chen (2001) point out that different studies claiming to measure parental involvement have defined the construct in different ways. As a result of these variations parental involvement has been categorized into various subtypes in the research (Ballantine, 1999; Fan & Chen, 2001; Hill & Tyson, 2009; Jeynes, 2005; Jeynes, 2007, Jeynes 2012). Research indicates different types of parental involvement predict different types of achievement outcomes, and therefore need to be examined independently to obtain a clearer understanding of how each type predicts academic achievement (Fan & Chen, 2001; Grolnick, Benjet, Kurowski, & Apostoleris, 1997; Jeynes, 2005; Jeynes, 2007, Jeynes 2012). In alignment with the subtypes of parental involvement described in the literature (Fan & Chen, 2001; Jeynes, 2005; Jeynes, 2007, Jeynes 2012; Lee & Bowen, 2006), Fan and Chen define parental involvement as communicating with the teacher about how the child is doing in school and assisting the child with his/her homework. Further examination of the literature on these two types of parental involvement will help illustrate the impact of such parental involvement on academic achievement.

Parental communication with teachers. Several studies reveal the positive impact that parental communication with teachers and students can have on students' academic achievement (Jeynes, 2007; Jeynes 2012; LaRocque et al. 2011). Findings from a meta-analysis of secondary urban students (Jeynes, 2007) indicated a statistically significant effect size of parental communication with their children about their school activities on student achievement outcomes including grades, standardized tests, and teacher rating scales. Jeynes (2007) did not speculate reasons why the effect of parental involvement through communication on achievement was statistically significant; however, it may be that the communication enabled the parents to better

understand how to meet their child's educational needs at home, which is similar to other research findings (Jeynes, 2012; LaRocque et al., 2011).

Some research has also shown that parental involvement programs that promote home-school communication can lead to increased academic achievement. For example, Jeynes (2012) conducted a meta-analysis of Pre-K through 12th grade urban students to study the impact different types of parental involvement programs have on achievement. One of the types of parental involvement programs incorporated parental communication with the teachers about students' performance. Parents in this program communicated with the teachers about their child's curricular activities and clarified misunderstandings about his or her performance. This type of program resulted in statistically significant increases in achievement with an effect size of .28 (Jeynes, 2012). Jeynes (2012) concluded that this type of parental involvement can lead to greater academic achievement because it promotes teamwork and helps to gain an understanding of the child's curricular activities and performance. Jeynes (2012) also stated that specific types of parental involvement including communication with teachers should be examined further because parental involvement has subtle aspects that can lead to large impacts on achievement.

Supporting the findings of Jeynes (2007) and Jeynes (2012), LaRocque et al. (2011) found that family involvement in establishing relationships with their child's teachers helps increase student achievement. Specifically, LaRocque et al. (2011) stated that an increase in family involvement in a child's schoolwork and relationships with school personnel led to higher graduation rates, better student attendance, higher math and reading scores, and less grade retention. LaRocque et al. (2011) suggested that the reason family involvement in establishing relationships with their children's teachers results in higher academic achievement is that it is beneficial for both the parent and the teacher to have a mutual understanding of the child. By working together, both the parent and the teacher can provide better instruction for the child at school and at home. LaRocque et al. (2011) indicated that the teacher uses information given from the parent about the child to set instructional goals and learn more about how to better meet the educational needs of the child. The parent also can help their child achieve better by interacting with the teacher because some instruction is better done at home and collaborating with the teacher can help show the parent how to meet the child's needs at home (LaRocque et al., 2011).

However, although some researchers have suggested that parental communication with teachers can promote achievement because parents and teachers work together to ensure the student is learning the curriculum properly, other studies have found that this type of involvement can reduce student achievement. Tan and Goldberg (2008) found that grades were *lower* when fathers were involved by communicating with the child's teachers, attending parent-teacher conferences, helping in the classroom, and attending school events. To explain this surprising finding, Tan and Goldberg (2008) suggested that parents tend to become more involved when their child is having academic difficulties, which would indicate why the parental involvement was associated with lower grades. The researchers also added that parental involvement can be considered intrusive by the children, which may result in lower academic achievement and is aligned with the findings of Hill and Tyson (2009). Although they report parental school involvement had a negative impact on the students' grades, it had a positive impact on the child's anxiety and enjoyment of school. Tan and Goldberg (2008) concluded that parental involvement has many facets and that further research should explore how these facets relate to achievement.

Parental involvement through homework. Parental homework involvement is another type of parental involvement. In fact, it has been described as the most controversial subtype of parental involvement in the literature because it has lead to both positive (Jeynes 2007; Jeynes, 2012) and negative (Hill & Tyson, 2009; Jeynes, 2005; Peng & Wright, 1994) academic outcomes. For example, parental homework involvement has been found to contribute to negative outcomes for middle school students (Hill & Tyson, 2009) and minority students (Peng & Wright, 1994), positive outcomes for secondary students (Jeynes, 2007), and both positive (Jeynes, 2012) and negative (Jeynes, 2005) outcomes for elementary students. Given these inconsistencies, researchers have suggested that it is necessary to further explore the impact of parental homework involvement on academic achievement (Fan & Chen, 2001; Jeynes, 2005; Jeynes, 2007; Hill & Tyson, 2009).

Examining the positive impacts parental homework involvement has on academic achievement, Jeynes' (2007) meta-analysis of urban secondary students indicated that when parents checked over their child's homework before it was turned in to the teacher, a statistically significant effect size of .38 for academic achievement outcomes was found. Similarly, Jeynes' 2012 meta-analysis found that promoting parental involvement in checking their child's homework resulted in statistically significant increases in achievement with an effect size of .27 (Jeynes, 2012). The researcher concluded that parental involvement by means of checking a child's homework may lead to greater academic achievement. Jeynes (2012) stated that parental involvement that includes checking a child's homework should be encouraged by teachers and mentioned that pre-service teachers need to be trained on how to promote this type of parental involvement.

In order to foster academic achievement, parental homework involvement must be provided appropriately (Dumont et al. 2012). Research has shown that the quality of the involvement is more important in promoting achievement than the quantity of the involvement (Cooper et al. 2000; Dumont et al. 2012; Knollmann & Wild, 2007). Parents who provide homework support will help their child achieve if they are supportive of their child's autonomy, give structured support, and provide assistance with positive affect and emotional support. Parental homework support that is not provided appropriately does not lead to achievement. Therefore, students' perceptions of their parents' homework assistance have a large influence on determining how this assistance will impact achievement.

Unlike the findings from the meta-analyses by Jeynes (2007) and Jeynes (2012), the findings from the meta-analysis by Hill and Tyson (2009) revealed a significant negative correlation between parental involvement in homework and middle school students' academic achievement. Hill and Tyson (2009) suggested that because middle school students are at an age where taking ownership for one's actions is important towards creating autonomy, it might be perceived as being overbearing for a parent to become involved in the child's homework. Other researchers have found that homework assistance may not be helpful to a child who is already struggling to achieve. Students who received help on their homework from their parents might already have been poor achievers, so parental homework involvement might not be beneficial to them (Dumont et al. 2012; Hill & Tyson, 2009; Jeynes, 2005). When students struggle to achieve, they are likely to perceive additional parental homework involvement negatively and causing conflict and they will continue to struggle. In contrast, students who are high achievers are more likely to perceive parental homework involvement positively and benefit from it (Dumont et al., 2012). The different results from these meta-analyses indicate that there might be

a possible link between parental involvement in homework and improved academic achievement, but it needs to be studied in more detail (Hill & Tyson, 2009).

Dumont et al. (2012) examined parental homework involvement in more detail and found that it did not serve as a mediator between family background and academic achievement. However, the researchers found that family background significantly predicted parental homework involvement, but with small to moderate effect sizes. Highly educated parents provided significantly more parental homework involvement than less educated parents. Parental homework involvement also significantly predicted academic achievement as long as the parents were perceived as being competent and helpful. Parents who were not perceived by their children to be supportive and competent contributed to negative achievement, a finding which is supported by other literature (Cooper et al. 2000; Fan & Chen, 2001; Hill & Tyson, 2009; Jeynes, 2007).

Research has found that other family background variables such as race also influence parental involvement and academic achievement. Lee and Bowen (2006) examined whether different levels and types of parental involvement would result in different academic achievement outcomes according to racial backgrounds. The researchers found differences in levels of parental involvement, which had an impact on achievement for different races of families in the study. The researchers found that high levels of homework help for Latino, African American, and European American students resulted in similar achievement, but that lower levels of homework help resulted in higher achievement for European Americans than for Latino and African American students. Latino and African American students achieved similarly with high or low levels of homework help. The results suggest that Latino and African American students can benefit as much as European American students when given high levels of homework help, but suffer when they only receive a low amount of homework help. Just as the amount of parental involvement and race can influence the impact of parental involvement, socioeconomic status can also influence the benefit of parental involvement.

Parental Involvement and Socioeconomic Status

Research has documented a positive relationship between socioeconomic status (SES) and parental involvement. (Hango, 2007; Dumont, 2012). For example, a higher level of familiarity and time spent in the educational system for a parent with a higher SES may contribute to increased amounts of parental involvement (Hango, 2007). Yet, there is not always a clear indication in the literature of what constitutes SES. Although Hango (2007) described SES as the amount of years of formal schooling the parent received, she acknowledged that different studies examining parental involvement and SES use different definitions of SES. Hango (2007) declared the need for further description and explanation of SES to describe its impact on parental involvement and academic achievement. Also, most studies do not mention how specific types of parental involvement differ based on SES (Hango, 2007). Further examination of operationally defined SES and parental involvement variables will help clarify their influence on each other.

When examining how parental involvement impacts students living in poverty, Jeynes (2007) explained that disadvantaged students benefit from parental involvement. Because poverty itself negatively influences achievement, the researcher suggests that parental involvement can serve as a powerful protective factor for students who come from poor families. However, Jeynes (2007) found that students who live in poverty have parents who have less education and lower amounts of parental involvement and indicated that parents who have higher

SES backgrounds have more education and therefore will be more likely to value the education of their children by becoming involved in their endeavors.

Similarly, Hill, Castellino, Lansford, Nowlin, Dodge, Bates, and Pettit (2004) found that parents with less education tend to be less involved in their child's education. They stated that because parents from lower SES backgrounds tend to have less education, it is reasonable to assert that they will display less parental involvement in their child's homework and weaker school relationships with their teacher (Hill et al., 2004). Therefore, these researchers suggest students who live in poverty are also at risk for lower levels of parental involvement.

In contrast to the literature documenting a positive relationship between SES and parental involvement, Sui-Chu and Willms (1996) found only a slight relationship between SES and parental involvement, especially when looking at particular types of involvement. For example, family SES (described as a combination of parental education and income) had a small but statistically significant relationship with the parental involvement variable of home supervision (which included a question about whether the parent is involved in monitoring the student's homework), with an effect size of .024. The school communication parental involvement variable, which assessed the school and the parent contacting each other about the child's performance, had an effect size of .175. Both variables were statistically significant but had very small effect sizes. The researchers stated that the results indicated that higher SES did not necessarily result in much higher amounts of parental involvement for communication with the school. It also indicted that higher SES did not increase the amount of parental homework involvement. Although SES does not strongly predict the amount of parental involvement with children, it does predict the children's academic achievement.

Effects of Poverty on Academic Achievement

There is a large body of research indicating that students living in poverty also are likely to have lower academic achievement (Sirin, 2005; Lacour & Tissington, 2011). A review by Lacour and Tissington (2011) noted that the U.S. Department of Education had examined 71 high-poverty schools and on average students performed below age and grade norms when tested. In addition, students who lived in poverty performed significantly worse than students who did not live in poverty. The researchers also indicated that students who lived at 50% below the poverty line scored 7 to 12 points below students who were in borderline-poor households on national achievement reading assessments according to the Early Childhood Longitudinal Study, and students who lived between 50-100% of the poverty line scored 4 to 7 points lower on these assessments. (Lacour & Tissington, 2011). The researchers also indicated how poverty may predict worse academic outcomes by stating that students who live in poverty lack the resources to succeed in school (Lacour & Tissington, 2011).

Additional research has also supported the finding that families with a lower socioeconomic status (SES) are more likely to have lower student achievement (Sirin, 2005). A meta-analysis by Sirin (2005) indicated that academic achievement and low SES were significantly positively correlated with an effect size of .22. In addition, the meta-analysis by Sirin (2005) showed that when SES was divided into three to seven differing groups in a hierarchy of low to high SES, the effect size was .28. This research indicates that differing levels of poverty may differentially have negative impacts academic on achievement.

Sirin (2005) suggested that higher-SES families are able to provide for their children's basic physiological needs and provide them with social capital. Social capital is described as supportive relationships among structural forces and individuals (i.e. parent-school relationships)

that promote the sharing of values and societal norms, which are necessary to do well in school. In his meta-analysis, Sirin (2005) also found that family SES was a significant indicator of academic achievement and influences the quality of the relationship between school personnel and parents. Therefore, families that can provide for basic physiological needs and provide social capital may help promote academic achievement for their children.

There was also a difference in the relationship between SES and academic achievement for different grade levels. Overall in his meta-analysis, Sirin (2005) found that as students reached the higher grades, there was a larger effect size for the correlation of academic achievement and SES, except at the high school level. The researcher asserted that younger students in low SES backgrounds tend to achieve at a lower rate than students from higher SES backgrounds. This finding contrasts some other studies, which found that the correlation between achievement and SES reduces over time due to students with low SES backgrounds either adapting to school or dropping out of school (see White, 1984). Sirin (2005) concluded that when students from low SES backgrounds struggle to achieve because of a lack of social capital and resources, that they are likely to continue to struggle to achieve over time. Sirin (2005) also concluded that students from low SES backgrounds who struggle academically are more likely to drop out, which lowers the statistical correlation between SES and achievement at the high school level. These findings by Sirin (2005) could mean that the negative impact that poverty has on academic achievement needs to be dealt with as early as possible in order to help younger students achieve. School based programs that provide resources for students in poverty can help promote achievement and may be a possible solution to ameliorate the negative aspects brought on by living in poverty.

Intersection of Poverty, Achievement, and Parental Involvement: BCSP

The Butler County Success Program (BCSP) is a local school-based program located in a Midwestern state that promotes achievement by providing disadvantaged families with the basic resources they need to succeed. Community liaisons in the program work with families to ensure that their basic needs (e.g., poverty) are being met to provide a better chance for their children to achieve academically. One goal of the BCSP is for the liaisons to work with the families to make sure they are providing as much as they can for their children's well-being by having them become involved in their child's education. Parental involvement is promoted in the program through the help of the liaisons, who serve as the bridge between school and home. Parents learn more about what is going on at the school by communicating with teachers and attending meetings about their child's performance. Parents become more aware of what is going on at school by communicating with the teachers and liaisons, which allows them to assist their children with homework.

The BCSP has been shown to be effective at promoting parental homework involvement and communication with teachers about the child's performance (Bush & Bergen, 2011).The students of families who participated in the program, all of whom were living in poverty, took a pre-test and post-test measure on the Mini Battery of Achievement (Woodcock, 1994), which is a shortened version of the Woodcock-Johnson Tests of Achievement. The parents of the families in the program took a pre-test survey and post-test survey examining various constructs including parental involvement and children's social, cognitive, reading, and behavior competence. The teachers also took a pre-test and post-test survey examining their perceptions of the parents using these same constructs. The researchers found that the program did significantly increase parental involvement in a child's homework and parental relationships with teachers.

Bush and Bergen (2011) also found a statistically significant increase in students' Reading and Basic Skills post-test scores from the Mini Battery of Achievement. Bush and Bergen (2011) hypothesized that by providing access to services to meet the students' basic needs, they were able to provide the students with the right source of motivation to achieve without having to worry about meeting their basic needs. The researchers explained that their findings reflect the basic notion in Maslow's Hierarchy of Needs such that once deficiency needs are met, people become more motivated to satisfy their growth needs, one of which is considered to be academic achievement (Bush & Bergen, 2011). The researchers also hypothesized that programs similar to the BCSP would have similar results (Bush and Bergen, 2011).

Rationale and Purpose

Although recent research has indicated that general, homework, and school communication types of parental involvement increase academic achievement, there still exists a need in the literature to examine which aspects of parental involvement significantly predict achievement and whether the relationship between parental involvement and achievement is influenced by SES (Dumont, 2012; Fan & Chen, 2001; Izzo, Weissberg, Kasprow, & Fendrich, 1999). There also exists a need in the literature to determine whether differing amounts of poverty predict lower amounts of achievement (Sirin, 2005). This study will examine how at-risk students' achievement is impacted by parental homework involvement and communication with teachers about school performance. It will also examine if students living at different levels of poverty experience different levels of achievement. In addition, this study will examine the relationship between parental involvement and achievement when controlling for SES. This study builds upon the current body of literature examining how parenting and family variables have influenced the achievement of at-risk students (Dumont, 2012; Fan & Chen, 2001; Jeynes, 2005; Jeynes, 2007; Jeynes, 2012; Noltemeyer, et al., 2012; Tan & Goldberg, 2008) through extending the investigation to include how students with various levels of poverty achieve based on parental involvement (Fan & Chen, 2001). Fan and Chen (2001) concluded their meta-analysis of parental involvement's impact on academic achievement by calling for future studies to examine the impact of parental involvement on academic achievement before and after factoring out SES variables. Fan and Chen (2001) indicated that such a study would reveal the strength of the relationship between parental involvement and academic achievement above and beyond the impact of SES. Hango (2007) also suggested that the defining of SES variables for future studies will help describe its impact on parental involvement. Accordingly, this study defined lower SES according to the federal poverty level and annual income of the participant's family, which will also highlight whether parental involvement protects children from the risks of poverty. The latter has important implications for enhancing academic resilience in students experiencing the adversities associated with poverty.

More specifically, three research questions were explored in this study: (1) Does parental involvement (checking homework and parental school communication with teachers) predict academic achievement in a sample of economically disadvantaged students?; (2) Does living in more severe poverty predict lower achievement?; and (3) Does parental involvement predict achievement after controlling for SES? From the findings that greater parental involvement predicts greater academic achievement (Fan & Chen, 2001; Hill & Tyson, 2009; Jeynes, 2005; Jeynes, 2007; Jeynes, 2012; LaRocque et al., 2011), it was hypothesized that parental involvement would predict greater academic achievement, serving a protective function within this population. This hypothesis is also based on the finding that programs which promote

parental involvement result in an increase in both parental involvement and academic achievement (Bush & Bergen, 2011; Jeynes, 2007; Jeynes, 2012). Second, it was predicted that the lower the students' SES background is, the lower their achievement will be. This hypothesis was made based on research indicating a positive relationship between SES and achievement, especially at the elementary age (Lacour and Tissington, 2011; Sirin, 2005). Lastly, it was hypothesized that parental involvement would predict an increase in academic achievement after controlling for SES (thereby serving as a protective factor to poverty). This prediction was made based on research indicating that parental involvement increases academic achievement although its positive impact may be reduced as poverty becomes more severe (Fan & Chen, 2001; Jeynes, 2005; Jeynes 2007; Jeynes 2012, Lacour & Tissington, 2011).

Method

Participants

Participants in this study included all students in the Butler County Success Program (BCSP) for whom data on each of the variables were collected during the 2010-2011 school year. There were 774 students who participated in the BCSP, but only 219 students had enough data collected to include them in the analyses after removing outliers from the data set. Most of the students who were excluded from the analyses had missing data on their family income values, which was to be used as a predictor variable in the current study. Families who entered the BCSP program were required to provide data on how much income they had been receiving per month at the time of their enrollment in the program, but 387 of the participants did not have any family income data on file that could be located during data collection procedures. Additionally, some of the outcome variable scores were not collected because those students may have moved and left the program or were otherwise unable to participate (e.g., multiple absences, parents did not provide consent for data collection). Although some participants were excluded from the final analysis, the data was assumed to be roughly representative of the population for students in the BCSP because data that was available was an appropriate and approximately equal representation of the students in the program based on participants' demographics (i.e. grade, gender, etc)., levels of poverty, and achievement scores. Participants were students in kindergarten through sixth grade and came from 36 different schools in urban, suburban, and rural areas in a Midwestern US state. Approximately 10% of the students were in kindergarten; 14% were in 1st grade; 15% were in 2nd grade; 15% were in 3rd grade; 16% were in 4th grade; 14% were in 5th grade; and 16% were in 6th grade. Forty-eight percent of the participants were male and fifty-two percent were female. All participants lived in families qualifying for Temporary Aid to Needy Families (TANF) and were considered economically disadvantaged.

Materials

Parent surveys. The pre-test parent survey included 81 items answered using a 4-point Likert scale format (see Bush & Bergen, 2011, for more details). The post-test parent survey included the same 81 questions from the pre-test and also an additional 20 retrospective questions looking back on how certain constructs were either provided or not provided throughout the entirety of the BCSP. The constructs examined in these 20 questions examined whether the BCSP provided childcare, basic needs (i.e. food, healthcare, transportation), children's academic skills and abilities, improving family life, improving parenting skills and parent-child relations, and improving parental school involvement. The responses on the scale ranged from strongly agree (4 points) to strongly disagree (1 point). Higher scores on the scale

indicated higher ratings of parental involvement. The questions on the survey were taken from the survey used in Bush and Bergen (2011) and Noltemeyer, et al. (2012) and addressed love and belonging needs, parenting behavior, parental involvement, family togetherness, parental optimism, and children's social, cognitive, reading, and behavior competence. The questions on parenting behavior were derived from 7 items from the *Parenting Behavior Measure* (Peterson, Bush, & Supple, 1999). Family togetherness was derived from 2 questions from the *Family Adaptation and Cohesion Scale* (Olson 1991) . Love and belonging needs and parental involvement were created by the researchers in Bush and Bergen (2011) and used again in Noltemeyer et al. (2012). Parental optimism was taken from 5 questions from the *Life Orientation Test* and the questions on children's social, cognitive, reading, and behavior competence was derived from *Harter's 1982 Perceived Confidence Scale.*

Procedure

Data were collected between September 2010 and June 2011. The data were gathered after families enrolled in the BCSP. The BCSP had 13 liaisons who worked with the families and explained upon their first home visit that they could participate in the study if they desired. The participants who agreed were given their informed consent by the liaisons and pre-test surveys were given to the parents and were administered by the liaisons or a trained research assistant. The Woodcock-Johnson III Tests of Achievement Brief Battery (Woodcock, Schrank, McGrew, Mather, 2007) was administered at the school to the students in the BCSP by either the liaisons (90%) or a trained research assistant (10%). Post-test surveys were administered to teachers and parents after at least three months had passed.

Predictor variables. An exploratory factor analysis was conducted by Noltemeyer et al. (2012) using items from the parent survey. Although 16 factors were revealed, the two constructs relevant to this study were titled SCHOOL and HOMEWORK (see Noltemeyer et al., 2012 for more details on the factor analysis procedures).

The SCHOOL variable, which represents the average score from three items, described how involved the parent is with the child's teacher. For example, these items asked the parent about how the child is doing at school, knowing the teacher's name at school, and finding out from the teacher how to help the student with their schoolwork. The HOMEWORK variable, representing of the average score from three items, described how involved the parent is helping the child with their homework on a regular basis. For example, items find out the parent enjoys helping the child with their homework, and are aware of what homework was assigned each day for their child. Reliabilities of the two variables fell within an acceptable range (Chronbach's alpha = .784 for SCHOOL and .760 for HOMEWORK) and are similar to values found in Tan & Goldberg (2008).

The other predictor variable was poverty. This variable designated the parent-reported dollar amount of income the family received on a monthly basis, which was based on the question asking each family how much money they were receiving per month at the time of enrollment in the BCSP. Every family's income met the criteria to be on the federal poverty line (U.S. Department of Health and Human Services, 2011).

Outcome variables. ***Woodcock-Johnson III Tests of Achievement Brief Battery.*** The Woodcock-Johnson III Tests of Achievement Brief Battery is a shortened version of the Woodcock-Johnson III Tests of Achievement Battery and measures Reading, Writing, and Math skills. It is an individually-administered norm-referenced assessment designed for individuals ages 2 through 90. It was normed with a nationally represented sample of 8,782 individuals. It

has established reliability and validity with other similarly designed tests. Its reliability for all the Cluster subtests on the Brief Battery including the Brief Achievement Cluster are all above .90 (Grenwelge, 2009). The subtests on the Brief Battery also have established concurrent validity for all ages ranging from .80 to .96. The reliability and validity of the Brief Battery and Brief Achievement Cluster meets or exceeds the basic standards for reliability and validity, (Grenwelge, 2009). A pre-test and post-test were conducted using the Woodcock-Johnson III Tests of Achievement Brief Battery and the standard minimum of three months time passing between pre-test and post-test as shown in Bush and Bergen (2011) was implemented to reduce practice effects.

Analysis

Descriptive statistics were conducted to learn more about the variables. Next, linear regression analyses were conducted to determine whether the predictor variables could significantly predict the outcome variable. Regression techniques were appropriate for this study because the research questions focus on the degree to which the value of a continuous outcome variable is predicted by the value of one or more continuous variables (Keeves, 1988). The research has used these techniques to understand the relationships between parental involvement and achievement (Desimone, 1999; Dumont, 2012; Peng & Wright, 1994), poverty and achievement (Sirin, 2005), and parental involvement and academic achievement after controlling for SES (Fan & Chen, 2001; Shi-Chu & Willms, 1996). Results of linear regression analyses have been used to influence education policy decisions, influence school reform efforts, and establish relationships between school climate and student achievement (W. Vesey, J.Vesey, Stroter & Middleton, 2011). The results of the linear regression analyses in this study will help contribute to the expanding research describing the relationship between parental involvement, poverty, and achievement. Post-test data were used for all analyses on the outcome variable and for the parent survey predictor variable.

Results

Descriptive statistics for the variables were conducted and include the mean, median, mode, standard deviations, and ranges (see Table 1). Overall, the mean post-test brief achievement score in this sample was slightly below the mean score for the norming sample. The family income variable contained a large range of different incomes and a large standard deviation. The mean monthly family income was much larger than the most frequently occurring income in this sample. The data indicated that 3.4% of the families had the same reported monthly income, which was much lower than the average monthly income for each family. The data suggest that a large portion of the participants came from families with greater amounts of poverty, which may have had a greater influence on producing lower achievement scores. The mean post-test parental school involvement score was 3.23 and the mean post-test parental homework involvement score was 3.17, indicating that parents mostly reported that they were involved in their child's homework and communication with their child's teachers. Table 2 presents the correlations between variables.

Additionally, the participants' grade level was not significantly correlated with parental homework involvement, $r = -.008$, $n = 489$, $p = .860$.

Table 1

Descriptive Statistics

	n	Mean	Median	Mode	Std. Deviation	Range
Post-test Brief Academic Achievement	675	92.43	94.00	97.00	18.50	133.00
Family Income	387	$1,277.48	$1,129.50	$336.00	$998.03	$4043.00
Parental Involvement in School	637	3.23	3.00	3.00	.56	4
Parental Homework Involvement	637	3.17	3.00	3.00	.67	4

Simple linear regression was conducted to analyze the first research question regarding the relationship between parental involvement and achievement. The predictor variables were the HOMEWORK and SCHOOL factors and the outcome variable was the Brief Achievement Standard Score from the post-test. The results from the data analysis indicated that parental school involvement did not significantly predict academic achievement, $\beta = .-.122$, $t\ (489) = -.335$, $p = .738$. However, homework parental involvement did significantly predict academic achievement, $\beta = .908$, $t\ (489) = 2.118$, $p = .035$. Parental homework involvement explained a statistically significant, but small portion of the variance in the academic achievement scores. ($R^2 = .009$, $F_{(1, 488)} = 4.486$, $p = .035$. The results indicate that for each unit increase in parental homework involvement, there was an observed .908 unit increase in the post-test Brief Achievement standard scores. Therefore, as parents were more involved in their children's homework, their children's academic achievement increased significantly, but it was responsible for a marginal increase in academic performance.

Simple linear regression was planned to be used to analyze the second research question regarding the relationship between poverty and achievement, but ultimately was shown to not be worthwhile to use in this study. The family income predictor variable was not related closely enough to the Brief Achievement post-test Standard Score outcome variable. Standard linear regression can only accurately estimate the relationship between dependent and independent variables if the relationships are linear in nature, and in this study the family income predictor variable and post-test brief achievement outcome variable did not share a linear relationship. A scatterplot of the residuals indicated that the two variables did not have a linear relationship and did not have a goodness of fit to the fitted regression line, $R^2 = .000002609$

Table 2

Correlations between variables

Variables	1	2	3	4
1. Parental Involvement in School	-	.47*	.01	-.02
2. Parental Homework Involvement	.47*	-	.07	.10*
3. Family Income	.01	.07	-	.03
4. Post-test Brief Academic Achievement	-.02	.10*	.03	-

*Note. * $p < .05$*

In addition, hierarchal linear regression was planned to be used to analyze the third research question regarding the relationship between parental involvement and achievement after controlling for SES. Hierarchical linear regression was planned to be used to allow the potential relationship between parental involvement and achievement to avoid being overly influenced by the income level of the family. It was also meant to demonstrate whether a positive relationship between parental involvement and academic achievement existed after controlling for poverty. However, hierarchal linear regression was not able to be used in this study because the necessary assumption that the predictor variables in the multiple regression analyses was not met and therefore this type of analysis was inappropriate to conduct (Salkind, 2000). As previously stated, the family income predictor variable was not related closely enough to the brief achievement outcome variable, and therefore the assumption was not met.

Discussion

Following the prediction laid out in the hypothesis for this study, the results indicated that homework parental involvement did significantly predict academic achievement, although it only marginally contributed to an increase in academic performance. Surprisingly, the results also contrast the prediction that parental school involvement would predict academic achievement. Other studies have also found parental homework involvement to significantly, but marginally increase academic achievement (Cooper, Lindsay & Nye, 2000; Jeynes, 2007; Jeynes, 2012), and

have found parental school involvement to result in no significant increase in academic achievement (Hill & Tyson, 2009; Tan and Goldberg, 2008).

The results of the current study indicate that parental homework involvement does significantly contribute to student academic outcomes, but does not have practical significance. This suggests that parental involvement is not the only factor involved in helping improve academic achievement. The literature indicates that there are many factors in addition to parental homework involvement that also significantly contribute to academic achievement such as SES (Lacour & Tissington, 2011; Sirin, 2005), social capital (Christenson et al. 1992; Hill & Tyson, 2009), and resiliency (Catterall, 1998; Martin & Marsh, 2009). Although looking at parental homework involvement in isolation may only indicate minor increases in academic achievement, its importance cannot be understated because it impacts other variables that influence achievement. Parental homework involvement has been shown to increase variables that are related to academic achievement such as students' academic self-concept and homework self-efficacy more so than increasing academic achievement itself (Dumont et al. 2012).

Parental homework involvement also increases resiliency, which increases academic achievement (McMillan & Reed 1994). Parental homework involvement has been shown to be effective when it is provided in a supportive environment (Caterall, 1998; Waxman, Gray, & Padrón, 2002). Students are able to increase their academic resiliency when provided with caring and competent parents who discuss with their child the homework they are assigned, their expectations for their achievement, and how they can help them (Caterall, 1998; McMillan & Reed 1994). By providing this type of support, at-risk students who are struggling academically are more likely to improve their academic achievement and finish their schooling (Caterall, 1998).

Parental homework involvement may have only had a slight impact on achievement because the measures used to examine parental homework involvement in this study have differed from what has been used in previous research (Ballantine, 1999; Fan & Chen, 2001; Hill & Tyson, 2009; Jeynes, 2005; Jeynes, 2007, Jeynes 2012). Parental homework involvement has subtle aspects that can lead to large amounts of fluctuations on achievement, which is why researchers have continued to examine it differently (Jeynes, 2012). While the current study quantified parental homework involvement as the combination of whether the parent assisted their child with their homework on a regular basis and enjoyed helping the child with their homework, other studies examined this construct differently. Studies that have significantly predicted positive achievement from increased parental involvement examined the construct by determining whether parents checked over their child's homework before it was turned in to the teacher, which increased student achievement. (Jeynes, 2007; Jeynes, 2012). If the current study examined parental involvement by looking at whether parents checked over their children's homework, then the results may have predicted an increase in achievement. Similarly, this study indicated that economically at-risk students who were provided parental homework involvement at home made small gains in academic achievement, while the extant research has shown the largest gains in achievement coming from higher SES families providing homework involvement through school-based programs (Jeynes, 2012).

The current study also measured parental homework involvement differently than other studies by examining the frequency in which parents provided it but neglecting to examine its quality. It was predicted that more frequent parental homework involvement would produce better gains in achievement. The results of the study indicated that an increase in frequency in parental homework involvement did not predict practically significant results in achievement.

However, the quality of the homework parental involvement has been shown to impact students' academic achievement. An examination of the quality of the homework parental involvement may have predicted an increase in achievement. It is important to provide quality homework parental involvement by being supportive of their child's autonomy, giving structured support and providing assistance with positive affect and emotional support (Dumont et al. 2012). Parental homework support that is not provided appropriately does not lead to achievement (Cooper et al. 2000; Dumont et al. 2012; Knollmann & Wild, 2007).

In order to be effective, parents need to be involved in their child's homework by being competent enough to assist with homework, focused on teaching effective learning strategies that are familiar to the child, and being perceived as being supported by the child (George & Mensha, 2010). Students who do not perceive their parents as being competent enough to help with their homework end up rejecting any assistance offered to them by their parents (Dumont et al. 2012). Additionally, parents who provide homework assistance by demonstrating a different way to complete a task that is unfamiliar to the child (e.g. different ways to solve math problems) can cause interference and result in the child becoming frustrated (Dumont et al. 2012; George & Mensha, 2010). Therefore, parents and teachers need to be in communication on how to provide structured parental support with homework that is in alignment with how the child is being instructed at school. Often, students who are economically at-risk have parents who provide homework assistance with less autonomy and more interference than higher SES parents, which results in lower amounts of academic achievement (Cooper, Lindsay, & Nye, 2000). The at-risk students in the current study had parents who reported providing homework assistance, but may have done so without providing appropriate autonomy and support.

Students who do not want any parental homework involvement are more likely to get frustrated if it is forced upon them, and will experience a decrease in academic achievement. It is imperative that parents cautiously provide parental homework involvement based on their child's perception of their parents' support (Dumont et al. 2012). The amount and quality of parental homework involvement and the positive impact it has on achievement can also vary based on the age of the student (Hill & Tyson, 2009). The older students in the current study may not have benefited from parental involvement because they found it to be interfering with their autonomy, which has shown to occur as students get older (George & Mensah, 2010; Hill & Tyson, 2009).There is no way to know from our results whether students were provided quality parental homework involvement, but our results suggest that frequent parental homework involvement is necessary, but not sufficient to help students achieve at a higher rate. Contrasting the prediction laid out in the hypotheses for this study, the results indicated that parental school involvement did not significantly predict academic achievement. It is surprising that the findings of the current study did not predict increases in academic achievement, which would have been in alignment with the much of the extant literature on parental school involvement (Grolnick, et al., 1997; Hill & Craft, 2003; Jeynes, 2007; Jeynes 2012; LaRocque et al. 2011; Lengua, Kohl, & McMahon, 2000; Luster & McAdoo, 1996). Our results were also in alignment with the research which suggests that parental involvement at home is more strongly associated with positive academic outcomes than parental school involvement, (Izzo, et al., 1999). Our findings are surprising given the fact that research indicates that asking teachers how parents can help their child with their homework has been shown to increase achievement because it provides a mutual understanding of the child's educational needs and indicates the best ways to instruct the child at home and school (LaRocque et al., 2011). In addition, parental school involvement has been shown to predict academic achievement when parents communicate with their child's teachers

about the student's curricular activities and clarify misunderstandings about their child's performance (Jeynes, 2012). This type of parental involvement has been shown to predict greater academic achievement because it promotes collaboration and helps to gain an understanding of the child's curricular activities and performance.

However, it could be that the parents in the current study were able to collaborate with their child's teachers about how the child was doing in school and how they could help with their homework, but they did not effectively use that information from the teacher towards helping instruct the child at home. Just as indicated by the research on homework parental involvement, parental school involvement also relies on being provided with quality and positivity to both the child and the teacher. Parents who take the information they get from the teachers on how to help the child and provide that support to the child with warmth and positivity significantly help foster their child's academic achievement more so than parents who have similar levels of involvement but have negative parenting styles (Zellman & Waterman, 1998). It is important for parents to establish good relationships with their child's teachers because it helps establish a positive message to the child from school and home about the importance of education, which positively influences a student's learning and achievement (Izzo et al., 1999). Also, teachers' positive perceptions on the quality of the interactions with their students' parents also increases achievement more so than how often parents are involved with teachers (Izzo et al., 1999). If the current study examined whether the interactions between the parent and the teacher were provided with high quality, it might have predicted greater academic achievement.

In addition, parents who communicate with their child's teachers about how to help their child may start working with the teachers when the students begin to struggle. Tan and Goldberg (2008) suggested that parents tend to become more involved when their child is having academic difficulties, which could indicate why parental school involvement did not significantly predict academic achievement. Parents need to know how to provide structured support for instructing their child at home before their child starts to severely struggle behind their peers. Parents in Asia have helped increase their children's academic achievement from an early age by maintaining a daily dialogue with their child's teachers through entries in a log that the child takes to and from school (Stevenson & Stigler, 1992). However, parents often do not know how to provide structured support for their child's educational needs and often stop asking their child's teachers for help as the student gets older (George & Mensha, 2010). The results from the current study indicated that parental involvement decreases as the students get older, which suggests that parents need to learn how to collaborate with teachers when their child is younger and work towards preventing parental involvement from decreasing as the child gets older. Parents who do not know how to help also feel that they are incompetent and unable to help their child at home (George & Mensha, 2010). Even when the parent becomes involved in communicating with the child's teacher, it is likely that the student is already struggling academically and will be more likely to reject help that is provided by parents and teachers (Dumont, 2012). Therefore it is imperative that parents collaborate with teachers before a student starts to struggle in order to find out how to help them at home. If students in the current study had parents who collaborated with their teachers early on in their academic career, it might have predicted a significant increase in academic achievement.

Limitations

There are some limitations to the current study that may have impacted the findings of our results. First, although useful and appropriate for the program evaluation purposes for which

the parent survey was created, the questions that made up the parental homework and school involvement composite variables might not have been the best questions to ask to determine whether these constructs have an impact on academic achievement. The parental homework involvement composite variable could have been more useful if it had been comprised of questions that ask whether parents provided parental homework support with quality, autonomy, and emotional support instead of asking whether parents provided support often and enjoyed helping their child with their homework. The findings from the results of the study can only suggest that parental homework involvement that is provided often and with enjoyment can have a limited significant impact on academic achievement.

Additionally, the parental school involvement variable should have examined more questions regarding how parents and teachers are collaborating to meet the needs of the child at home and school, which has shown to increase achievement (Izzo et al., 1999; LaRocque et al., 2011). The current study could have included an additional question regarding collaboration between teachers and parents to more accurately determine whether parental school involvement is helpful in promoting achievement. Research has indicated that parents may collaborate with teachers when their child starts to struggle in school, which may make it more likely that their child will be more likely to be a low achiever in school without additional supports. When examining the impact that parental school involvement has on predicting achievement, it should be noted that even when parents are collaborating with teachers, the students that already have academic concerns may continue to struggle to achieve.

Additionally, if the questions on the survey included a broader range of response options in the Likert scale format (e.g. 1 (strongly disagree) to 7 (strongly agree), there would have been more data to better differentiate how much reported parental involvement was needed to increase achievement and which questions on the scale were more useful for predicting achievement. Using questions in this type of format would also allow more confidence in the raters' responses by reducing the biases in their responses by allowing the rater to provide greater degrees of reported parental involvement, which could allow for more honest answers in responses than using a 1 to 4-point Likert scale format used in this study.

In addition to the types of questions that comprised the variables in the study, another limitation of the study was the sources of data provided that did not lead to proper analysis of the research questions. The current study was not able to examine the research questions regarding the impact of SES on academic achievement and the potential relationship between parental involvement and academic achievement after controlling for SES. The family income predictor variable was not related closely enough to the Brief Achievement post-test Standard Score outcome variable. Although the reasons for this can only be speculated, it may be because all families in the sample were living in poverty and thus the income variable did not represent the full range found in the general population most often studied. It was also discovered during the data collection process that there was no verification of the reported family income values. Parents were required to report the amount of monthly income they were receiving at the time of their enrollment in the BCSP, but there was no way to confirm that the parents were receiving the amount of income they reported they had received. Without any verification of family income values, families may have reported lower amounts of income received in order to be included in the BCSP, which may have affected the relationship between the family income variable and the achievement scores. Hierarchal linear regression was not able to be used in this study because the necessary assumption that the predictor variables in the multiple regression analyses was not met and therefore this type of analysis was inappropriate to conduct (Salkind,

2000). The family income predictor variable was not related closely enough to the brief achievement outcome variable, and therefore the assumption was not met. The data did not support the analysis of these questions, and therefore the study was limited to the analysis of only one of the three original research questions.

Another important limitation to consider is that the study only utilized the parent's responses to determine whether they provided involvement. The fact that involvement was reported by the parents may have prevented a full range of possible scores and created a positively skewed set of scores. The parents might have reported more positive involvement to impress the liaisons and university students listening to their responses creating a halo effect. The study should not have relied on one single source of self-report data to analyze the variables, but instead should have included input from the teachers and students to indicate their perceptions of the parental involvement that was provided. Using multiple sources of data on the parental involvement that was provided would have strengthened the confidence in the results of the study. Additionally, the implications from the findings of the results may only be applicable to the low SES families included in the study and not be able to be generalized to students that come from higher SES families. When discussing the implications of the findings of the current study, it should be mentioned that because the research questions were analyzed using linear regression, no causal inferences between parental involvement and academic achievement should be made.

The limitations of the current study suggest that several questions about the impact on parental involvement on academic achievement remain unanswered. The extant research has shown that an increase in parental involvement provided with quality, autonomy, and emotional support can improve academic achievement, but it has not shown how parents can provide this type of support. Further research should examine how many hours per week they are involved with the child's teachers or homework, which could provide information on the necessary amount of time to provide parental involvement and predict better academic achievement. Additionally, further research could use more qualitative approaches to examine how parents provide involvement through open-ended surveys which could reveal how parents provide successful involvement.

Conclusion

The current study demonstrated the importance of considering the various factors that contribute to academic achievement when providing parental homework involvement. Results indicated that parental homework involvement significantly predicts academic achievement, but it only provides a small portion of increases in academic achievement. This suggests that other factors are related to achievement (e.g. SES, race, etc) and need to occur in conjunction with parental homework involvement to see a larger increase in academic achievement. The current study also revealed that parents need to initiate more conversation with their child's teachers in order to improve academic outcomes. Parents will not help their child achieve solely by knowing their teachers' name, asking how they are doing in school, and asking how they can help out with their school work. Instead, parents need to collaborate with their child's teachers on what they believe the child's needs are and how they can be met at school and at home. Future research can build upon the findings in the study to examine parental homework and school involvement in more detail and identify possible links to these constructs and academic achievement.

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