



Investigating the Relationship between Parental Involvement and Student Academic Achievement in Barbados

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This study investigated the nature and strength of the relationship between parental involvement and student academic achievement, the relationship between parental involvement and active engagement of students and the extent to which parental involvement predicted Student Proximal Academic Outcomes as measured by active engagement of students. Parental involvement and student proximal academic outcomes were measured by Hoover-Dempsey and Sandler's model (1995, 1997, and 2005) and student academic achievement was measured using a standardized test, Barbados Secondary School Entrance Examination (B.S.S.E.E.). The sample was a cohort of 160 1st form students. The results indicated that there was no relationship between parental involvement and student academic achievement; however, there were significant positive relationships between parental involvement and student proximal academic outcomes.

Keywords: Parental Involvement, Modeling, Instruction, Encouragement Reinforcement, Student Proximal Academic Outcomes, Active Engagement, Barbados.

Introduction

A cursory read of the literature on parental involvement would reveal that there is an ongoing debate surrounding firstly definitions of parental involvement, and definitions of academic achievement and secondly, the nature of the relationship between student academic achievement and parental involvement, however defined. As it relates to definitions of parental involvement, Hoover-Dempsey and Sandler (1995) conceptualized it as having two expressions, home-based activities, which include helping with homework, monitoring the child's progress and engaging in activities that would promote the interest of the child, and school based activities, which include attending Parent Teacher Conferences, volunteering at school and attending school functions. Epstein (2009) has identified six key types, namely parenting, communicating, volunteering, learning at home, decision making and collaborating with the community. As it relates to definitions of academic achievement, some researchers have conceptualized academic achievement in terms of standardized test, Henderson and Berla (1994) while others have looked at indirect or distal outcomes, Hoover-Dempsey and Sandler (2005). In terms of relationships between the parental involvement and academic achievement the findings are varied. Some researchers found positive relationships, while other have found negative or no relationships between the variables.

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Objectives

The study was therefore designed to investigate the nature and strength of the relationship between parental involvement and student academic achievement, the relationship between parental involvement and Active Engagement of students and the extent to which parental involvement predicts Student Proximal Academic Outcomes. The research questions were as follows:

1. What are students' perceptions of parental involvement?
2. Are there relationships among the student independent variables of Modeling, Instruction, Encouragement, Reinforcement and the dependent variables of Achievement, Active Engagement and Teacher Relationships?
3. Are there statistically significant differences by gender in the level of parental involvement reported by students?
4. What are the combined and relative effects of modeling, instruction, encouragement, reinforcement, and teacher relations on active engagement of students?
5. What parental involvement variables best predict active engagement of students?
6. Is there a relationship between students' perceptions of parental involvement and student academic achievement as measured by standardized tests?

Theoretical Framework

This paper is grounded in the social cognitive and social learning theories as advanced by Bandura (1986) and the social development and socio cultural theory as advanced by Vygotsky, (1978) and expanded by Rogoff (1990). According to Pajares (2002) there are five central concepts associated with the social cognitive theory as follows:

1. Observational learning/modeling, which suggests that individuals learn through observation
2. Outcome expectations, which reflect individual's beliefs about what consequences are likely to ensue if particular behaviors are performed.
3. Perceived self efficacy, which is concerned with individual's beliefs about the ability to complete a given task successfully.
4. Goal setting, where individuals use forethought to envision the future, identify desired outcomes and generate plans of action.
5. Self regulation, which points to a student's management or control of his/her own learning behaviors through self observation or keeping track of his/her behaviors; self judgment, which evaluates the behaviors; and self reaction, where the individual rewards or discontinues the behavior.

Closely aligned to the foregoing is the social development theory. The central idea associated with this theory as advanced by Vygotsky (1978) is that social interaction plays a fundamental role in the development of cognition, and that the potential for cognitive development depends on the zone of proximal development, a level of development which is attained when children engage in social behavior. Full development of the zone of proximal development depends on full social interaction. Vygotsky (1978) was of the view that parents, caregivers and peers and cultural beliefs and attitudes influenced individual learning.

Socio cultural theory also has its genesis in the work of Bandura 1978 and Vygotsky (1978). This approach expands the theory a bit more and suggests that children's development is embedded in the social relationships, sociocultural tools and sociocultural practices that surround them. (Rogoff, 1990). In other words, as pointed suggested by Green (2008) the social environment that surrounds a child and the individuals (e.g. family members) in it provide information necessary for the child to learn.

Since this paper focuses on parental involvement and student academic achievement it is fitting that one considers the notion of academic achievement in the context of socio cultural theory. Parents, peers and teachers are all part of the cultural space of students and as a consequence they are in prime position to influence student academic achievement. Social cultural and social cognitive theories therefore provide a useful framework for investigating parental involvement and its impact on student academic achievement.

Relevant Literature

Parental involvement and academic achievement

There are those researchers who argue, and indeed, have provided empirical evidence which support the view that there is a positive and direct correlation between parental involvement and student academic achievement, as measured by standardized tests. Henderson and Berla (1994); Epstein (1997; 2001). Other researchers, looking at the link between achievement in elementary and secondary schools have identified the significant role of families and, family-school relations, and parental involvement in education, (Fan & Chen, 2001; Seginer, 2006; Jeynes, 2007; Hill and Chao, 2009 ;).

Jeynes (2007) whose study included 52 studies that involved more than 300 000 participants found a positive relationship between parental involvement and academic achievement. In this study parental involvement was defined as parental participation in the educational processes and experiences of children (Shute, Hansen, Underwood and Razzouk, 2011). Specifically, the Hedges measure was reported and indicated that for overall academic achievement, the effect size for parental expectations was the largest among all the other variables (Hedge's $g = .88$, which represents a large effect size). The remaining variables (i.e., parent-child communication, parents checking homework, and parental style) showed medium effect sizes, Hedges' $g = .32, .38$, and $.40$ respectively, (Shute et al.)

A meta-analysis on the existing research on parental involvement in middle school by Hill and Tyson (2009) found that across 50 studies, parental involvement was positively associated with achievement, and that involvement that reflected academic socialization had the strongest positive association with achievement. Overall, the meta- analysis of the correlational studies demonstrated a positive relation between general parental involvement and achievement in middle school. The correlations ranged from $-.49$ to $.73$; the average weighted correlation across the 32 independent samples was $r = .18$, 95% confidence interval (CI) = $.12, .24$, $Q(31) = 1,581.10$, $p < .0001$ (Hill and Tyson, 2009). These researchers also found that whereas school based involvement- including visiting the school, volunteering at school, and attending school events- was moderately positive in its association with achievement, the evidence suggested that the most salient type of parental involvement was involvement that related to achievement, and involvement that resulted in socialization around the goals and purposes of education and that provided adolescents with useful strategies that they could use in semiautonomous decision making (Hill and Tyson, 2009).

Later research by Altschul (2012) widened the debate and looked at the link between socioeconomic status academic achievement and parental involvement specifically among Mexican American Youth. This study found, among other things, that parental involvement in education mediated the influence of both family income and maternal education on youth's academic achievement, and secondly, that pathways between socioeconomic status, parental involvement and youth academic achievement suggest that Mexican American parents' abilities to invest economic, social, and human capital in their children's education lead to higher academic achievement among youth.

Gender and parental involvement

It has been suggested that gender of parents could be a factor that moderates the level of involvement. Shumow- and Miller (2001) found that fathers and mothers were equally involved at home, but mothers were more involved at school than fathers; that the higher the their education level the more mothers were involved at school, while fathers of all educational levels were less involved at school than mothers; student gender did not make a difference in the level or type of involvement and the more parents were involved at home, the more students felt it was important to perform well in school. Goldman (2005) conducted research involving British parents and found that fathers were more involved than mothers in specific types of activities in their children's out of school learning: such as building and repairing, hobbies, Information Technology, mathematics and physical play. A later survey of parents by Seeds, Goldstein and Coleman (2008) found that fathers helped less often with homework than mothers, however, amongst parents working full time there was no difference. Blau and Hameiri (2012) also investigated gender differences in parental involvement. This research which measured involvement using an online interaction system in seven Israeli secondary schools found that compared to fathers, mothers had higher levels of online parental involvement; they logged into the system more and sent more messages to teachers.

Parental involvement and student proximal academic outcomes

Research by Grolnick & Slowiaczek, 1994; Hoover-Dempsey, Battiato, Walker, Reed, DeJong, & Jones, 2001; Steinberg, Elmen, & Mounts, 1989), suggest that parental involvement may have its most direct and critical influence not on summary measures of achievement, but on student attributes or Student Proximal Academic Outcomes, that lead to achievement (Hoover-Demsey & Sandler, 2005). According to Hoover-Demsey et al. students' development of these attributes may mediate the relationship between parental involvement and student school success.

Research by Green (2009), which used the Hoover-Dempsey, Sandler model of parental involvement and also explored the theory of student proximal achievement outcomes, found significant relationships between student reported parental involvement and student proximal achievement outcomes ($r = .44$, $p < .05$), as well as significant relationships between parent reported parental involvement and student proximal achievement outcomes.

This paper is therefore designed to investigate the relationship between parental involvement and student academic achievement and to determine whether the research provides evidence to support the theory of Student Proximal Academic Outcomes.

Method

Participants

A sample of 160 1st form secondary school students. The cohort consisted of 80 males and 80 females with an average age of 11.5 years.

Instrumentation

Two validated instruments were used for data collection in the study.

The first instrument used for data collection in the study was the Hoover-Dempsey Sandler Parental Involvement Project, Student Questionnaire consisting sixty-seven (67) items, measured using a Likert scale 1= not true, 2= a little true, 3= pretty true and 4= very true, as follows. The instrument measured two broad constructs, Parental Involvement and Student Proximal Academic Outcomes. Parental Involvement included four sub-scales as follows: Parent Monitoring, Parent Instruction, Parent Encouragement, and Parent Reinforcement. Student Proximal Academic Outcomes included two Self Report sub-scales as follows: Active Engagement and Teacher Relationships.

The Parent Modeling sub-scale included items from 1-10. Students were asked to respond to the stem “The person in my family who usually helps me with my homework...”. The items included: likes to learn new things; knows how to solve problems; doesn’t give up when things get hard; wants to learn as much as possible; ask other people for help when a problem is hard to solve; likes to solve problems; enjoys figuring things out; can explain what he or she thinks to other people. Alpha reliability for the scale was .75.

The Parent Instruction sub-scale included items 11-25. Students were asked to respond to the stem “The person in my family who usually helps me with my homework teaches me”. The items included: ways to make my homework fun; to keep trying when I get stuck; to ask questions when I don’t understand something; how to get along with others in class; to try the problems that help me learn the most; to take a break from my work when I get frustrated; to follow the teacher’s directions. Alpha reliability for the scale was .86.

The Parent Encouragement sub-scale included items 26-37. Students were asked to respond to the stem “The person in my family who usually helps me with my homework encourages me.” The items included: when I don’t feel like doing my schoolwork; when I have trouble organizing my homework; to develop an interest in schoolwork; to believe I can do well in school; to ask the teacher for help when a problem is hard to solve; to explain what I think to the teacher. Alpha reliability for the scale was .87.

The Parent Reinforcement sub-scale included items 38-50. Students were asked to respond to the stem “the person in my family who usually helps me with my homework shows me that he or she likes it when I..”. The items included: stick with a problem until it gets solved; check my work; understand how to solve problems; ask the teacher for help; try to learn as much as possible; have a good attitude about doing my homework. Alpha reliability for the scale was .87.

The Active Engagement Self Report sub-scale included items 52-57, 59-60, 63, 65-67. It required students to respond to statements such as the following: I try to figure out the hard parts on my own; I want to learn new things; I go back over things that I don’t understand; I like to look for information about school subjects; I can learn the things taught in school; I want to understand how to solve problems. Alpha reliability for the scale was .72.

The Teacher Relationships Self Report sub-scale included items 51, 58, 61-62, 64. It required students to respond to the following statements: I can explain what I think to most of

my teachers, I can get along with most of my teachers; I can go and talk with most of my teachers; I ask teachers to tell me how well I am doing in class; I can get most of my teachers to help me if I have problems with other students. Alpha reliability for the scale was .71.

The second instrument was the Barbados Secondary School Entrance Examination performance scores. This examination is delivered by the Caribbean Examinations Council (C.X.C.), an established and reputable examining body for the member countries of the Caribbean.

Results and discussion

Research Question 1: What are children's perceptions of parental involvement?

The researchers also used descriptive statistics to answer this question. Encouragement, Modeling, Reinforcement, and Instruction received mean scores that were very close to the maximum scores for the variables. Also the scores for the variables were also tightly clustered around the mean. The Standard Deviation Scores were 4.50, 4.25, 4.78, and 5.62 respectively, see Table 1-1 below. These findings suggest two things. Firstly, that the students' views were highly congruent, and secondly, that the students perceived their parents as exhibiting high levels of parental involvement in the form of encouragement, modeling, reinforcement, and instruction. The level of involvement for all the areas indicated was between 83% and 90%. These findings are consistent with other research which suggests that children's perceptions of events in their environments often mediate the influence of those events on their behavior and learning, (Wong, 2008; Grolnick and Slowiaczek, 1994; Grolnick, Ryan and Deci, 1991).

Table 1-1 Simple descriptive statistics: student reported level of parental involvement

<i>Parental Involvement Mechanisms</i>	<i>Mean</i>	<i>SD</i>	<i>Mode</i>	<i>Score range</i>
Encouragement	42.8	4.5	43	12 to 48
Modeling	33.2	4.2	33	10 to 40
Reinforcement	47.1	4.7	52	13 to 52
Instruction	51.6	5.6	54	15 to 60

Note. The scores are anchored on a four point scale from 1(not true) to 4 (very true). N= 155. SD= Standard Deviation.

Research Question 2: Are there relationships among the four parental involvement mechanisms and Achievement, Active Engagement and Teacher Relationships?

The findings specified that there was no significant relationship between student perceptions of the four parental involvement mechanisms and academic achievement; however, there were significant relationships between the four parental involvement mechanisms and student Active Engagement. Active Engagement was significantly and positively correlated to Modeling ($r = .465, p < .01$); Instruction ($r = .613, p < .01$) Encouragement ($r = .526, p < .01$); Reinforcement ($r = .596, p < .01$). There were also significant and positive relationships between the four parental

involvement mechanism and Teacher Relationships, Modeling ($r = .447, p < .01$); Instruction ($r = .420, p < .01$); Encouragement ($r = .328, p < .01$); Reinforcement ($r = .436, p < .01$), see Table 1-2 below. These findings are in concert with those of Hoover-Dempsey and Sandler (2005) and Martinez-Pons (1996) who point to the critical role of parents in providing students with the knowledge and skills necessary for effective engagement with school tasks. It must be noted that the scales used to measure Active engagement and Teacher Relationships included questions which tapped the level of student academic self efficacy, intrinsic motivation to learn, self regulatory strategy use and social self efficacy for relating to teachers. More specifically, the finding as it relates to social self efficacy for relating to teachers underscores the work of Patrick, Hicks and Ryan (1997) and Bandura (1997) which suggested among other things, that students' beliefs in the value of engaging with teachers was shaped by the interaction that their parents had with the same teachers. In other words, the suggestion was that if the parents were engaged in meaningful and productive dialogue with the teachers then it informed in a positive way the relationship between the students and the teachers. Significantly, the aforementioned areas, according to the literature were susceptible to parental influence through involvement activities (Hoover-Dempsey and Sandler, 2005). The findings therefore lend support to the view of other researchers who suggest that parental involvement may have its most direct and critical influence not on summary measures of achievement, but on student attributes that lead to achievement (Student Proximal Academic Outcomes). See the work of (Grolnick and Slowiaczek, 1994; Hoover-Dempsey, Battiato, Walker, Reed, DeJong, and Jones; Steinberg, Elmen, and Mounts, 1998).

Table 1-2 Summary of intercorrelations of independent and dependent variables

<i>Measure</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
1. Achievement	1						
2. Modeling	.28						
3. Instruction	.013	.616**					
4. Encouragement	.097	.509**	.688**				
5. Reinforcement	.008	.482**	.711**	.760**			
6. Active Engagement	.035	.465**	.613**	.526**	.596**		
7. T. Relationships	.026	.447**	.420**	.328**	.436**	.619**	1

Note. Intercorrelations for student participants ($n=155$). T= Teacher. ** Correlation is significant at the 0.01 level (2-tailed).

Research Question 3: Are there statistically significant differences by gender in the level of parental involvement as reported by students.

An independent samples 't' test was conducted to determine if there was a significant difference in students' perceptions of the four parental involvement mechanisms. There was a significant difference in the scores for males and females on the variables. On the variable Reinforcement, Males ($M = 46.14$, $SD = 5.29$) reported significantly lower levels of perceived parental involvement than females ($M = 48.03$, $SD = 4.09$); $t = -2.498$, $p = 0.001$. Similarly on the variable Instruction Males ($M = 50.48$, $SD = 6.23$) reported significantly lower levels of perceived parental involvement than females ($M = 52.72$, $SD = 4.78$); $t = -2.525$, $p = 0.001$. See Table 1-3 below. According to the Hoover-Dempsey and Sandler (2005) student perceptions of parental involvement mediate the influence of involvement on proximal academic outcomes. Put differently, if the students perceive that their parents are involved in a way that is supportive of their learning then that involvement will have a greater influence on their proximal academic outcomes. The question that needs to be asked therefore is whether or not this is confirmed in the literature. Earlier research by Grolnick and Slowiaczek (1994) suggested that children must perceive and experience parents' involvement if those involvement activities are to influence learning and behavior. Later research by Wong (2008) confirmed that greater perceived involvement and autonomy support predicted better academic performance and less classroom disruptive behavior. This suggestion therefore is that female students were better placed than male students to achieve better academic outcomes. On the other hand, the implication for parents is that they should pay more attention to the levels of perceived parental involvement especially as it relates to their sons.

Table 1-3 T Test for male and female students' perception of parental involvement

N= (155)				
Gender				
	Males	Females	t	df
Reinforcement	46.1 (5.29)	48.0 (4.09)	-2.498*	154
Instruction	50.48 (6.23)	52.72 (4.78)	-2.525*	154

Note. * = $p < 0.001$. Standard Deviations appear in parenthesis below means. Males $N = 75$, Females $N = 80$

Research Question 4: What are the combined and relative effects of modeling, instruction, encouragement, reinforcement, and teacher relations on active engagement of students?

This question was answered using multiple regression analysis. The multiple R value ($r = 0.74$) denotes that there was a positive and high relationship between the combination of the selected parental involvement sub-variables and active engagement of students. Moreover, the ANOVA table ($F = 37.627$, $p = 0.000$) shows that the combined contribution of the parental involvement

variables to active engagement of students was significant. The regression model further signify that the selected parental involvement variables in combination, accounted for 55.8 % (R square = 0.558, $P < 0.001$) of the total variance in the active engagement demonstrated by students. On a cautionary note, one must also accept that using simple linear regression does have the limitation of clustering the effects of the independent variables, see Table 1-4 below.

Table 1-4 Combined effects of selected parental involvement sub-variables on active engagement of students

Model	SS	df	MS	f	Sig.
Regression	3115.585	5	623.117	37.6	0.000*
Residual	2467.486	149			
Total	5583.071	154			

Note. Multiple R = 0.747. Multiple R Square = 0.558. Adjusted R Square= 0.543. *= $p < 0.001$

Research Question 5: What parental involvement variables best predict active engagement of students?

In Table 1-4 below the relative effects of the selected parental involvement variables on active engagement of students are captured. The findings registered that Instruction (Beta= .270, $p < 0.001$) and Teacher Relations (Beta = .409, $p < 0.001$) best predict Active Engagement of students. These findings are in accord with those of Hoover-Dempsey and Sandler (2005) who also found that student reports of parental involvement were significant in predicting student outcomes. These findings therefore point to the important role that parents play as the child's first teacher and the role they play in teaching their children to navigate the teacher student relationship and developing their sense of what Bandura (1997) termed social self-efficacy for relating to teachers.

Table 1-4 Relative contributions of the predictor variables to active engagement of students

Predictor Variables	Beta	t	P
Modeling	-.005	-.076	.940
Instruction	.270	3.018	.003*
Encouragement	.084	.938	.350
Reinforcement	.164	1.751	.082
Teacher Relations	.409	6.406	.000*

Note. *=Significant ($p < 0.001$)

Research Question 6: Is there a relationship between students' perceptions of parental involvement and student academic achievement as measured by 2standardized tests.

A Pearson's Product Moment Correlation was conducted and it revealed that there was no significant relationship between the two variables. This finding is inconsistent with that of

researchers like Henderson and Berla (1994); and Epstein (1997; 2001). However, it be noted that the standardized tests used in this study were single one-shot tests this may have contributed to the contrary finding. Still, the point must be made that the literature in the area is divided on the nature of the relationship between parental involvement and student academic achievement. One of the things that emerge from this study, though not a central focus was the role of homework and to a greater extent after school lessons. A future study could therefore examine the relationship between after school lessons (paid for by parents) and student academic achievement.

Scholarly Significance of the Study

The findings of the study are significant from the point of view that they lend empirical support to the Hoover-Dempsey, Sandler model of parental involvement and expands the body of knowledge that looks at the theory of student proximal academic outcomes and the relationship between active engagement of students and parental involvement. The research also provides baseline data for further Caribbean research on the impact of teacher relationships and the relationship between social self-efficacy for relating to teachers and student proximal academic outcomes, this study to the authors' knowledge represents the first of its kind in the Caribbean. The research also intimates that the level of parental involvement is moderated by select home and work variables, such as time and energy levels of parents. This therefore has implications for the types of parental involvement programmes and initiatives undertaken by schools.

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