

Academic Achievement of Homeschool and Public School Students and Student Perception of Parent Involvement

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Abstract

This paper presents the results of a survey of 127 seniors in a diverse suburban high school to determine the impact of the subjects' perceptions of parent involvement on their levels of achievement as measured by the standardized national ACT test. Independent-samples *t* tests were then used to assess whether there were any differences in achievement as reported in national test scores among students with a perception of a high level of parent involvement, students with a perception of a low level of parent involvement, and homeschool students. The findings of the study were that the perception of a high level of parent involvement does have a significant impact upon achievement. Students who perceived a high level of parent involvement performed significantly better on the national ACT exam than students who perceived a low level of parent involvement. There was no difference in academic achievement between public school students who perceived a high level of parent involvement and homeschool students.

Key Words: parent involvement, academic achievement, homeschool students, high school students, student perceptions

Introduction

According to data from the 1999 Parent Survey of the National Household Education Surveys Program, a study by the U.S. Department of Education, the number of homeschool students has risen from 360,000 in 1994 to 850,000 by 1999 (National Center for Education Statistics, 2001), with many experts placing that figure closer to 2 million (Bielick, Chandler, & Broughman, 2001; Ray, 1997). In addition, the author of a recent study has reported that the academic achievement of these homeschool students on the national ACT is higher than that of public school students (Rudner, 1999). A recent article in a professional education journal, *Educational Leadership*, stated that the number of homeschool students was up dramatically, with the National Home Education Research Institute estimating between 1.7 million and 2.1 million last school year, up from 1.2 million in 1996. Their ACT college admission scores are also consistently above the national average (22.5 vs. 20.8 in 2003), and an education institute study of 5,400 homeschooled students found scores on standardized exams consistently above national averages in 1995 and 1996 (Ray, 2002). One of the limitations to this kind of comparison is the nature of the reporting of achievement. Homeschool student achievement results are voluntary and do not include all students, while the public school achievement results include all test takers. A second limitation involves the demographics of the homes in which the students live. One study reported that many of the variables that are common among homeschool families may influence academic achievement, such as higher income, religious faith, and a higher incidence of stay-at-home mothers (Rudner, 1999). Rudner himself cites this as a limitation to the comparisons with the achievement of public school students (1999).

Each of these variables—socioeconomic status, religious faith, stay-at-home mothers, and parent involvement in education—can have an effect upon the academic achievement of students. Therefore, we sought to isolate one variable, parent involvement, to determine its impact upon the academic achievement of high school students. Although the schools cannot influence a family's income level, commitment to faith, or incidence of mothers staying at home full-time, they may be able to influence the involvement of parents in their child's education. This higher level of parent involvement is by definition evidenced in homeschool students' lives (Lines, 2002). Because of this, our research focused on the perception of parent involvement of public high school students.

Review of the Literature

The review of the literature did not reveal any studies comparing academic achievement for homeschool students and public school students dependent upon perceived levels of parent involvement. For this reason, the review focuses mainly on two different kinds of studies: those that relate to homeschool students in particular, and those that relate to parent involvement in general.

Homeschool Students

Although growing, the literature about homeschooling is extremely limited. One descriptive article defined homeschooling as “educating children under the supervision of parents instead of school teachers” (Lines, 2002, p. 1). Lines raised questions of whether the same children would perform better or worse academically in a classroom than at home, but stated that with the information available, it is difficult to draw any conclusions. One reason for this is that there is a lack of reliable data due to the voluntary nature of achievement testing for homeschool students. The largest study to date (Rudner, 1999) utilized the results of tests taken by homeschool students across the nation with a sample size of 20,760 students in grades K-12. He reported that homeschool students scored higher than their public school peers did on standardized tests. However, the results of this survey were based upon voluntary participation and may not reflect the true situation. In the study, Rudner stated that homeschool parents are, by definition, heavily involved in their children’s education but the same, unfortunately, is not true of all public or private school parents. This statement influenced our study, in that it led us to question whether public school students have levels of achievement comparable to that of homeschool students when a perception of high levels of parent involvement exists.

Our study was prompted by reports about the higher levels of achievement of homeschool students in popular magazines and newspapers, such as *Time* (Cloud & Morse, 2001), *Chicago Sun-Times* (Grossman, 2003), *Christianity Today* (Scheller, 2002), ABCNEWS.com (Schabner, 2001; abcnews.com, 2001), and educational journals such as *Educational Leadership* (Grossman, 2003; Ray, 1997). In his key study of the academic achievement of homeschool students, Lawrence Rudner (1999) commented about the dangers of outright comparisons between homeschool students and public school students because of the vast number of variables that have an impact on these environments. In an interview with Michael Farris, chair of the Home School Legal Defense Association, Rudner said, “We can’t, and really shouldn’t, compare homeschooling to public schools. The environment is different. We [homeschoolers] don’t

have discipline problems, or at least not as many discipline problems. Homeschooling is one-on-one. There's the utmost level of parent involvement. No matter what you factor out, you cannot control the vast array of differences" (Farris, 1999). However, as is shown throughout these popular magazines and professional journals, comparisons are being made regularly. In addition, the homeschool groups are also making these comparisons in their publications. On its website, the Home School Legal Defense Association provides a link to a report from Dr. Brian Ray of the National Home Education Research Institute. In this document, Ray stated that "home educated students excelled on nationally-normed standardized achievement exams. On average, homeschoolers outperformed their public school peers 30 to 37 percentile points across all subjects" (Ray & Rudner, 2001).

A letter-to-the-editor in *Christianity Today* piqued our interest in relation to all of these various reports. The writer commented on the most recent report which cited homeschool student academic achievement as higher than public school student achievement. She stated, "Find me statistics that compare homeschooled children with those learning in a classroom who have involved parents. I am confident that virtually no difference will be found" (Neufeld, 2002, p. 12-13). We wondered the same thing. Our purpose was to consider these comparisons and examine whether public school students' perception of parent involvement would influence their academic achievement.

Parental Involvement and Academic Achievement

In order to ask questions regarding "parent involvement," it was necessary to define what is meant by that term. Various studies have defined parent involvement differently, and these variations in definition have led to different findings. One study, which found no significant correlation between parent involvement and student achievement, defined parent involvement as the number of hours the parent spent volunteering at the school (Okpala, Okpala, & Smith, 2001). Another study (Griffith, 1996) expanded on this definition, focusing on the interaction of parent involvement and parent empowerment as they related to student achievement. Parent involvement in this study was defined as the frequency with which parents volunteered at the school, attended parent/teacher conferences, and attended back-to-school nights. Parent empowerment was defined as the extent to which parents perceived that the school accommodated parent participation in decision-making and activities through information sharing and convenient arrangements. Although Griffith found consistent correlation between parent involvement and student test performance, the definition of parent involvement was still limited and did not

include academic activities outside of the school environment.

A different definition of parent involvement was provided by Sealover (1995) who defined it as parents' direct involvement with students' academic assignments. This involvement was measured quantitatively by the number of hours per month spent helping students with assignments. Although Sealover found no significant parallel between this type of parent involvement and student academic achievement, this study was useful in supplementing more qualitative information about parent involvement and attitudes.

Another way of defining parent involvement is more encompassing through a system of categorization of activities. In one study, parent involvement was separated into four categories: helping, controlling, supporting, and participating (Mau, 1997). Although Mau did not specifically study the effects of parent involvement on achievement, the research method was helpful to our study because it presented a much more comprehensive definition of involvement than those that were used by any of the aforementioned researchers.

Another comprehensive way of defining parent involvement used Epstein's six categories: basic obligations/positive environment, parent/school communications, parent participation in school activities, parent/school communications about homework, parent involvement in school decisions, and collaborating with the community (Epstein, 1988; 1995). Epstein suggested ways that parents could improve their level of involvement. Using these same criteria, Catsambis (1998) found that for 8th graders, high parent expectations were the strongest indicators of academic achievement. For 12th graders, parent encouragement to attend college had the strongest effect on academic achievement.

In addition to the literature that offered definitions of parent involvement, there was no lack of literature that, although it lacked specific definitions, explored parents' involvement and its effect upon academic achievement in various circumstances. One research study reported the attempt to discover whether the link between parent involvement and student achievement was affected by race or income (DiSimone, 1999). DiSimone concluded that a relationship did exist between race and parent involvement. Other studies included comparisons between parent expectations and academic achievement (Reynolds, 1992), comparisons between students' and parents' perceptions of parent involvement (Freeman & Karr-Kidwell, 1988), socioeconomic status and parent involvement strategies and their impact upon academic achievement (Baker & Stevenson, 1986; Hickman, Greenwood, & Miller, 1995), discussions about school experiences and future plans among African-Americans and academic achievement (Yan, 1999), and parenting styles and academic achievement (Zellman & Waterman, 1998). A comprehensive study (Henderson & Berla, 1994) reviewed 64 studies on parent involvement and came to the conclusion

that, taken as a whole, the studies strongly suggest that children do better in school when parents are involved in their children's education at home.

The review of the literature supported the claim that in general, studies which attempted to use comprehensive measures of parent involvement tended to find a relationship between parent involvement and academic achievement, while those using only one or two factors generally failed to do so. In addition, it seemed that activities taking place in the home, such as discussions, assistance, and parents giving advice, had a greater positive effect on student achievement than school-based activities, such as conferences, parent-teacher communication, and volunteering at school functions.

With these findings in mind, we designed a survey that included many questions about parent involvement and attitudes at home, along with questions about school involvement. We attempted to create a survey which encompassed definitions of parent involvement including students' perceptions of levels of encouragement, parents' expectations, parents' involvement and volunteerism in the school itself, time spent on assignments/homework outside of school, communications between teachers and parents, and parents' influence in decision-making.

In addition to constructs which identified the students' perceptions of parent involvement, we also included one construct with six items which examined the students' perceptions of their teachers' roles in seeking out a relationship with the home. This construct was included because of current research indicating that the teacher is the most important factor in influencing student achievement (National Commission on Teaching & America's Future, 1996).

Purpose

The primary purpose of this study was to determine if the score of home-school students on the national ACT exam remained higher than the score for public school students when the perception of parent involvement throughout their school career was factored.

In addition to this primary purpose, two other goals were incorporated into this study: (1) to determine if there was a statistically significant difference in the academic achievement of students who perceived a higher level of parent involvement and students who perceived a lower level of parent involvement, and (2) to ascertain the difference in academic achievement of public school students, depending upon perception of parent involvement, as compared to national norms of all students and national norms of homeschool students.

Study Limitations

One limitation of this study is that although it focused upon parent involvement, it did not use a strict experimental design in which researchers observed the parents involved in their children's education. Instead, we depended upon the perception of the students themselves to report their attitudes of how involved their parents were. This perception may or may not reflect the reality of their parents' involvement. Even though this is listed as a limitation of the study, we believe that the child's perception of parent involvement is as important as, if not more important than, the parents' actual involvement. Extant research studies have documented the impact that a perception of achievement has upon actual achievement, providing evidence of the importance of perception in effecting actual performance (Bandura, 1989; Weiner, 1974). Observing the reality of the parents' involvement, however, would assist in informing other parents specifically to what extent and in what manner one needs to be involved in his/her child's education to have an impact upon their achievement levels, as well as to make comparisons between the parents' actual involvement and the child's perception of it.

A second limitation to this study is the sample size. This study was conducted in one suburban high school which was demographically representative of the state and the nation. The recent No Child Left Behind Act requires each school district to have a plan for how it will allow research to be conducted with students, and many of the high schools approached to participate in this study did not yet have an approved plan in place. The survey was distributed in the American government classes, which are required for all seniors. The response rate from those surveyed was 85%; however, the respondents comprised just 21% of the population of the senior class. These were the classes that were provided to the researchers for the purposes of this study.

Methodology

This quantitative study was conducted through the distribution of surveys. The surveys were a compilation of 35 questions designed to determine the level of perceived parent involvement, with six of the questions designed to determine the teachers' role in reaching out to involve parents. Questions were asked concerning parent expectations, relationship to the school, involvement in the child's school, relationship with the teachers, teachers' relationships with parents, and perception of overall involvement. In addition, demographic questions were asked about the student's ethnicity, gender, GPA, and ACT score. The participating school was a large, suburban high school located in

a diverse community. The school was chosen using two criteria: willingness to participate and the school’s similar demographics to that of the wider state population in the areas of ethnicity and socioeconomic status. Table 1 provides information about the racial composition of the school and of the population taking the survey.

Table 1. Demographic Information about the School and Survey Population.

	Total High School Population*	Student Survey Respondents	Parent Survey Respondents
Black/African American	17.5%	9.5%	4.8%
Latino/Hispanic American	25.5%	16.2%	14.3%
Caucasian/European American	54.4%	63.5%	76.2%
Asian/Asian American	1.6%	2.7%	0.0%
Mixed Heritage	Not available	6.8%	0.0%
Native American	Not available	1.4%	4.8%

*Information received from the Illinois State Board of Education School Report Card.

One week prior to the distribution of the surveys, students under the age of 18 were given permission slips to take home and have their parents sign granting permission to complete the survey. The surveys were distributed through the general American government classes, which is required of all graduating seniors, and completed by 127 out of a total 604 graduating seniors who signed the permission slips, a response rate of 21%. Surveys were completed by 68 (53.5%) males and 59 (46.5%) females. Seniors were chosen because they had already taken and received scores back from the ACT exam; this was the independent variable chosen to compare achievement levels to that of home-school students.

In addition to surveying the students, a similar survey was sent home to the parents via the student. There were two additional questions on the parents’ surveys that were not included in the student surveys. The parent/guardian was asked to define their household regarding family situation and also regarding the family’s annual gross income. Of the 127 parent surveys that were distributed, 23 (18.9%) were completed and returned.

For each survey item, students and parents were asked to respond using a Likert scale, with 4 indicating the highest level of perceived parent involvement and 1 indicating the lowest level of perceived parent involvement. Each construct differed in its response, with some asking level of agreement with the item, some asking level of regularity for the item, and others asking about the likeliness of parent expectations for each item. In categorizing the level of parent involvement, responses of “1” or “2” were defined as *low level of parent involvement* and responses of “3” or “4” were defined as *high level of parent involvement*.

After the collection of the completed surveys, independent samples t tests were used to determine significant differences for each survey item, if any, in student achievement levels between those students who perceived a high level of parent involvement and those who did not, and paired samples t tests were used to determine significant differences, if any, between student perceptions of parent involvement and their parent's perceptions. Single sample t tests were used to compare student perceptions of parent involvement to the national scores on the ACT exam of both the overall average and of homeschool students. In addition, Pearson correlations were conducted to determine if correlations existed between the overall mean perception of parent involvement and academic achievement, as well as a perception of the teachers' role in reaching out to parents and academic achievement.

Results

Relationship Between Parent Involvement and Student Achievement

Overall, the results of this study concur with other research in the field: there is a relationship between the perception of parent involvement and academic achievement. Students who perceived a high level of parent involvement had a higher ACT score ($m = 23.15$, $sd = 4.48$) than students who perceived a low level of parent involvement ($m = 20.64$, $sd = 4.89$) ($t = -2.509(110)$, $p < .05$). In addition to the summary results, each survey item was analyzed to determine the relationship between students' perceptions of parent involvement with their academic achievement. Independent samples t tests were conducted to determine if there was a significant difference in achievement between students who believed their parents were involved as compared to students who did not believe this. When each survey item was analyzed, there were some items in the perception of parent involvement which made a significant difference in student achievement. Table 2 represents the survey items that were found to have a significant impact upon academic achievement.

The survey items where parent involvement was not found to have an impact upon academic achievement were: helping with school work, listening to students about school work, encouraging students regarding school work, attending teacher conferences, attending school functions, reviewing student report cards, teachers contacting parents about school, teachers sending information home, teachers notifying parents about school occurrences, and teachers effectively communicating with parents. All survey items showed either higher academic achievement by students perceiving higher levels of parent involvement or no difference at all.

Table 2. Areas of Perceived Parent Involvement which Significantly Impact Student Achievement.

Survey Item	Mean ACT Score		<i>t</i> value
	Involved Parents	Not Involved Parents	
My parents . . .			
Asked me about school work	23.23	19.64	-3.37**
Supported me in doing school work	23.01	20.30	-2.39*
Volunteered at various school functions	23.97	21.90	-2.18*
Reviewed information sent home from school	23.01	20.24	-2.49*
Were flexible to teachers' schedules	23.37	20.81	-2.80**
Served on school committees	23.86	21.89	-2.10*
Assisted me in making decisions about my future after high school	22.96	20.28	-2.26*
Expected me to maintain a 3.0 GPA	23.88	19.64	-4.88**
Expected involvement in extra curricular activities such as clubs or sports	23.33	21.33	-2.24*
Overall Mean Summary of Items	23.15	20.64	-2.51*

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

Student Perceptions Compared to Their Parents' Perceptions

Surveys were returned from 23 out of a total of 127 surveys distributed to parents. There was no significant difference in the academic achievement of students whose parents returned the survey compared to students whose parents did not return the survey ($t = -.881(110)$, $p > .05$). The results of a paired samples t -test comparing the students' perceptions of their parents' involvement and the parents' perceptions of their own involvement indicated a significant difference in many items from the survey. Table 3 lists each of the survey items where a significant difference in perceptions was found.

Table 3. Items with a Significant Difference between Student Perceptions and Parent Perceptions.

Survey Item	Student Perception	Parent Perception	<i>t</i> value
My Parents . . .			
Regularly asked about school work***	3.27	3.73	2.11*
Regularly helped with school work	2.39	3.35	4.94**
Regularly listened about school work	2.91	3.78	4.11**
Regularly encouraged student about school work	3.52	3.91	2.86**
Regularly supported student with school work***	3.43	3.83	2.86**
Regularly attended teacher conferences	2.73	3.59	4.09**
Regularly attended school functions	3.05	3.86	3.65**
Regularly reviewed student's report card	3.35	3.78	2.33*
Regularly volunteered at school***	2.30	2.96	3.05**
Contacted teachers	2.86	3.23	2.35*
Notified teachers of occurrences at home	2.05	2.82	4.17**
Desired a partnership with teachers	2.86	3.36	2.32*
Assisted in choosing student's classes through school career	1.57	1.91	2.91**

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

***Items which were found to be significant to student achievement

Out of a total of 31 survey items, there was a significant difference in the perceptions between the students and their parents on 13 items of those surveys returned, or 42%, with the parents perceiving their involvement to be higher than their child's perceptions of their involvement. Of these items where a difference in perceptions was found, three of them, or 23%, were found to have an impact upon overall academic achievement: regularly asking about school work, regularly supporting students with school work, and regularly volunteering at school.

Perceptions of the Role of the Teacher and Academic Achievement

A Pearson correlation was calculated examining the relationship between the students' ACT scores and the students' perceptions of teacher behaviors. The teacher behaviors which appeared on the survey were: contacting parents about school issues, sending information home about the activities at school, notifying parents about occurrences at school, effectively communicating with parents, being flexible to parents' schedules when arranging conferences or meetings, and desiring a partnership with parents for the purpose of improving student achievement. A weak correlation that was not significant was found in each of the items analyzed ($p > .05$). The students' perception of these teacher behaviors were not related to students' ACT score performance.

Comparisons of Public School Students and Homeschool Students

Our initial research question when beginning this study was whether students who perceived a higher level of parent involvement performed worse than, equal to, or better than homeschool students on the national ACT test, the gauge by which the success of homeschooling has been measured in recent reports. An overall mean was determined for each student by averaging the total responses to each of the survey items. The scores ranged from 1.48 to 3.79. We determined an overall definition of *parent involvement* by assigning those means that were 2.5 or below the category *perception of low parent involvement*, and those means that were 2.51 or above the designation of *perception of high parent involvement*. The national ACT scores used for comparative measures in this study are those reported by the *ACT Enrollment Information Service* for 2002 (C. Parmaly, personal communication, July 7, 2003). The mean ACT score of all students in our sample group was 22.5, which is the same as the 2002 reported national ACT score for homeschool students. A single sample *t* test compared the mean ACT score of the sample population to the national average ACT score for all students of 20.8. A significant difference was found

($t(111) = 3.891, p < .01$). The same mean of 22.53 ($sd = 4.70$) was significantly higher than the national average ACT score.

For students in our sample group who perceived high levels of parent involvement (72% of respondents), the mean ACT score was 23.15; for students in our sample group who perceived low levels of parent involvement (28% of respondents), the mean ACT score was 20.64. The national mean score of all students taking the 2002 ACT exam was 20.8 and the national mean score reported for homeschool students taking the 2002 ACT exam was 22.5. A single sample t test compared the ACT scores of students from the sample population with the national comparison groups.

Our research found: (1) for students in this sample reporting a perception of high levels of parent involvement, there was no significant difference between them and homeschool students ($t(83) = 1.338, p > .05$), but a significant difference was found between their academic achievement and that of the overall population as measured by the ACT exam ($t(83) = 4.813, p < .01$); and (2) for students in this sample reporting a perception of low levels of parent involvement, there was not a significant difference between them and homeschool students ($t(27) = -2.008, p = .055$), and no difference was found between them and the overall population as measured by the ACT exam ($t(27) = -.170, p > .05$). Table 4 lists the outcomes of these tests.

Table 4. Single Sample t tests Comparing ACT scores of the Sample Population with National Groups.

ACT Score		
Perceived Parent Involvement of Sample Group	National Comparison Group	t value
Low (20.64)	All students (20.8)	-0.170
Low (20.64)	Homeschool students (22.5)	-2.008*
High (23.15)	All students (20.8)	4.813**
High (23.15)	Homeschool students (22.5)	1.338

* $p = .055$, ** $p < .01$

Discussion

Relationship Between Parent Involvement and Student Achievement

The results of this study support others which indicate that parent involvement has a significant impact upon the academic achievement of students (Bempechat, 1992; Epstein, 1995; Henderson, 1981; Hickman, Greenwood, & Miller, 1995; Juang & Silbereisen, 2002; Stevenson & Baker, 1986; Thorkildsen & Stein, 1998; Zellman & Waterman, 1998). Much of the research identified the need for high levels of parent involvement during the

elementary, formative years of a child's life (Reynolds, 1992). This study furthers these findings by suggesting that even through the high school years, not only is this involvement important, it is imperative that high school students believe that their parents have been involved throughout their school careers.

The categories of items which had a significant impact upon student achievement were varied. Some of the items are categorized as support for students outside of the school (asking about school work, supporting school work, reviewing information sent home, and assisting in making decisions about the future); some of the items are directly related to involvement with the school (volunteering at various school functions, serving on school committees, and flexibility to teachers' schedules); and others are the expectations parents have for their children (maintain a 3.0 GPA and involvement in extra curricular activities). These categories align with the work of both Mau (1997) and Epstein (1988; 1995).

Student Perceptions Compared to Their Parents' Perceptions

Along with Freeman & Karr-Kidwell (1988), the authors of this study found a difference between the ways that students perceived their parents' involvement and the way that parents perceived it. A conclusion that can be drawn from this is that parents need to communicate to their children ways that they are involved in their child's school, education, and life, making explicit those areas of involvement. Many times, parents may wait until the child is not around to make contacts with teachers or to review information sent home from the school, and they may never talk with their children about ways in which they are volunteering at the school or serving on school committees. The greater the awareness the child has about his/her parents' involvement in the school, the greater impact this involvement may have upon the child's academic performance.

Only 23 parent surveys were returned (18%), compared to the 127 that were distributed. Parent surveys were given to students to bring home to their parents on the same day that the students completed the surveys in class. There could be many explanations for this paucity of responses, including the surveys not getting to the parents, parents' lack of time to complete them, loss of surveys by parents, etc. However, since there was such a low response rate, it is difficult to make any generalizations, except to note that of those responses received, there was a difference of perception on 42% of the survey items. This may be an indication that there is a significant difference of perception between parents and their children in what constitutes high levels of parent involvement. Because the results of this study found a significant difference in

academic achievement between students who perceive high levels of parent involvement and those students who perceive low levels of parent involvement, parents may want to examine how their children perceive their (parents') level of involvement in their academic lives. Needless to say, additional studies may need to be conducted to further the understanding of the differences between student and parent perceptions of parent involvement.

Perceptions of the Role of the Teacher and Academic Achievement

Although the main focus of this study was in comparing the academic achievement of students dependent upon their perception of parent involvement, one construct with six items was devoted to teacher behaviors. Each of the identified teacher behaviors examined their connection to the parents and/or the home. The items examined included the extent to which teachers were perceived as having: contacted parents about school, sent information home, notified parents about school occurrences, effectively communicated with parents, been flexible to parents' schedules, and desired a partnership with parents. There has been much research about the impact that teachers have upon student achievement, most notably the National Commission Report entitled *What Matters Most: Teachers for Our Nation's Schools* (Darling-Hammond, 1995). However, the results of this study did not indicate that the behaviors of the teacher in his/her interactions with the home had an effect upon student achievement, whereas this study did find that some of the parents' behaviors did have an effect. This does not mean that the behaviors or activities of the teacher in maintaining relationships with the parents are not important, just that their perception by students was not found in this particular study to have a significant impact upon student academic performance on the ACT.

Comparisons of Public School Students and Homeschool Students

In this particular sample, the mean ACT score of the sample population ($m = 22.53$, $sd = 4.70$) was equal to that of the national homeschool population ($m = 22.50$), and significantly higher than the overall average population ($m = 20.8$). Because of this, the sample group may not be a true representative sample of the national population as a whole. Given this, when public school students perceived higher levels of parent involvement, they performed as well as those students who were homeschooled. The one known similarity between these groups is that they had high levels of parent involvement. Both groups performed better than the overall national averages of public school students. However, in this particular sample, when a comparison is drawn between the

ACT scores of homeschool students and those public school students with a perception of higher levels of parent involvement, there is no significant difference.

Conclusions and Recommendations

In our current political milieu of accountability for student achievement, as well as the changing societal mores of two-income families, questions of parent involvement and academic achievement are raised, including specifics about the types of parent involvement (Weiss et al., 2003). A recently published book, *No Excuses: Closing the Racial Gap in Learning* (Thernstrom & Thernstrom, 2003) examines the large IQ and academic achievement gap between black and white children, stating that this cognitive skill gap precedes entry to school and can be documented as early as age three. The authors point out that family and parenting characteristics (including socioeconomic factors) are major causes of this learning gap. David Armor provides the following review of this book:

The problem with both NCLB and the school reforms proposed in *No Excuses* is that they assume schools can close this gap without any changes in families. This is problematic because the family factors that cause the gap and that continue to influence children throughout their school career are generally unaffected by changes in school policies. It is puzzling that the Thernstroms cite numerous findings from my book, *Maximizing Intelligence* (Armor, 2003), about the strong influence of family risk factors on children's IQ and achievement and yet ignore the substantial evidence about how hard it is to change achievement scores relying only on school resources and programs during the school years... By ignoring the causes of lower achievement, and by continuing to put most of our resources into school remedies that are likely to fail because they ignore the family, I believe we put unrealistic and unfair burdens on school systems (Armor, 2004).

Our solutions to improving the academic achievement of all students in our public schools begins with addressing the necessary involvement of the parents and identifying which activities are most beneficial to their students. This is evidenced in this study where no difference in achievement is found between homeschool students, who have natural parent involvement built into the model, and public school students who perceived high parent involvement. This is one step in the right direction.

The following recommendations are made based upon this study's results:

1. Parents should communicate their school involvement clearly to their children so that the students are aware of the ways in which their parents are involved. Results of this study showed that in 42% of the cases, the students perceived their parents' involvement to be lower than the parents did. In some instances, it is natural that the students wouldn't be as knowledgeable about their parents' involvement, such as in contacting teachers, notifying teachers of occurrences at home, and desiring a partnership with teachers. There may be reasons why parents don't alert their children to these items. In other cases, parents may not think to tell their children of their involvement, such as in attending school functions and teacher conferences and volunteering at school. In other cases, however, the students should have been aware of their parents' involvement or lack thereof. Of these cases, three have been found to be related to increased student achievement: regularly asking about school work, regularly supporting students in their school work, and assisting students in choosing courses over their school careers. Because the perception of the student is significantly lower than that of their parents' in these areas, by increasing their involvement in these areas and/or their children's awareness of their involvement, parents may increase the level of achievement of their children. It is important to note that it is impossible to generalize over an entire population on the basis of only 23 parent responses.
2. Parents should be aware of what actions, when perceived by students, demonstrate an impact upon academic achievement. Table 5 lists the survey items which indicated a significant difference in ACT scores between students who perceived a higher level of parent involvement in this item and students who perceived a lower level of parent involvement. Time is a limited commodity in our society and by knowing what actions and behaviors are effective in influencing student achievement, parents can be sure that time is spent in these significant areas.
3. When parents and public schools partner together for the purposes of improving student achievement, and when students perceive this involvement, academic performance increases. This is demonstrated by the increase in performance of both homeschool and public school students when the variable of parent involvement is considered. Public school students perform as well as their homeschool student counterparts when the variable of the perception of parent involvement is examined. Rather than abandon public schools in favor of home-schooling, parents concerned about their children's achievement could increase their level of involvement in the public schools. Increased involvement not only will

assist their own children, but will in turn affect other children as well. More volunteers in schools, increased participation on school committees, increased support for individual students in school work, and increased expectations for students regard GPA and extra-curricular activities will create a change in the school culture and climate; more and more parents may be influenced to become involved, and eventually all students enjoy the benefits. This is what is intended by the term “school community.” All stakeholders become involved in the life of the school for the purpose of improved success for all students.

Table 5. Survey Item Significance.

Survey items which indicated a statistically significant impact upon student achievement	Survey items which did not indicate a statistically significant impact upon student achievement
My parents . . .	My parents . . .
Asked about my school work	Helped with school work
Supported me in doing school work	Listened to students about school work
Volunteered at various school functions	Encouraged students regarding school work
Reviewed information sent home from school	Attended teacher conferences
Were flexible to teachers' schedules	Attended school functions
Served on school committees	Reviewed student report cards
Assisted me in making decisions about my future after high school	Contacted my teachers about school issues
Expected me to maintain a 3.0 GPA	Notified teachers of occurrences at home
Expected me to be involved in extra-curricular activities such as clubs or sports	Effectively communicated with my teachers
	Desired a partnership with my teachers
	Believed school was important for my future
	Assisted me in choosing classes in high school
	Provided a place in our home for me to do my school work
	Expected me to attend college
	Expected me to be successful
	My teachers . . .
	Contacted my parents about school
	Sent information home
	Notified my parents about school occurrences
	Effectively communicated with my parents
	Were flexible to my parents' schedules
	Desired a partnership with my parents

References

Abcnews.com. (2001, December 27). Homestyle teaching: Home schooling is going mainstream. Retrieved September 16, 2003, from http://abcnews.go.com/sections/GMA/AmericanFamily/GMA010820Home_schooling.html

Armor, D. J. (2003). *Maximizing intelligence*. Somerset, NJ: Transaction Publishers.

- Armor, D. J. (2004). No excuses: Simplistic solutions for the achievement gap? *Teachers College Record*. Retrieved February 26, 2004, from <http://www.tcrecord.org/Content.asp?ContentID=11268>.
- Baker, D. P., & Stevenson, D. L. (1986). Mothers' strategies for children's school achievement: Managing the transition to high school. *Sociology of Education*, 59, 156-166.
- Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist*, 44, 1175-1184.
- Bempechat, J. (1992). The role of parent involvement in children's academic achievement. *School Community Journal*, 2(2), 31-41.
- Bielick, S., Chandler, K., & Brougham, S. (2001, July 31). Homeschooling in the United States: 1999 (NCES 2001-033). Washington, DC: U.S. Department of Education.
- Catsambis, S. (1998). *Expanding the knowledge of parent involvement in secondary education: Effects on high school academic success*. (CRESPAR Tech. Rep. No. 27). Baltimore, MD: Johns Hopkins University.
- Cloud, J., & Morse, J. (2001, August 27). Home sweet school. *Time*, 158(8), 46-54.
- Davies, D. (1991). Schools reaching out: Family, school, and community partnerships for student success. *Phi Delta Kappan*, 72(5), 376-382.
- DeSimone, L. (1999). Linking parent involvement with student achievement: Do race and income matter? *Journal of Educational Research*, 93(1), 11-30.
- Epstein, J. L. (1988). How do we improve programs of parent involvement? *Educational Horizons*, 66, 58-59.
- Epstein, J. L. (1995). School/family/community partnerships: Caring for the children we share. *Phi Delta Kappan*, 76(9), 701-712.
- Farris, M. P. (1999, May 27). Home school works: An interview with Dr. Lawrence Rudner, Part III. *Home School Heart Radio Program*, 13(9). Retrieved October 1, 2003, from <http://www.hslda.org/docs/hshb/13/hshb1309.asp>
- Freeman, M., & Karr-Kidwell, P. (1988). *A descriptive study: Parent opinion and teacher-student perceptions regarding parents' involvement in their children's education and development*. Dallas, TX: Dallas Independent School District.
- Griffith, J. (1996). Relation of parent involvement, empowerment, and school traits to student academic performance. *Journal of Educational Research*, 90(1), 33-41.
- Grossman, K. (2003, September 29). Homeschooled students shine in national merit list. *Chicago Sun-Times*. Retrieved October 1, 2003, from <http://www.suntimes.com/output/education/cst-nws-home29.htm>
- Henderson, A. (1981). *Parent participation-student achievement: The evidence grows*. Columbia, MD: National Committee for Citizens in Education.
- Henderson, A. T., & Berla, N. (1994). *A new generation of evidence: The family is critical to student achievement*. Washington, DC: National Committee for Citizens in Education.
- Hickman, C.W., Greenwood, G.E., & Miller, M.D. (1995, Spring). High school parent involvement: Relationships with achievement, grade level, SES, and gender. *Journal of Research and Development in Education*, 28(3), 125-134.
- Juang, L. P., & Silbereisen, R. (2002). The relationship between adolescent academic capability beliefs, parenting and school grades. *Journal of Adolescence*, 25, 3-18.
- Lines, P. M. (2002). Homeschooling. *Eric Digest*, 151. (ERIC Document Reproduction Service No. ED 457539)
- Mau, W. (1997). Parental influences on the high school students' academic achievement: A comparison of Asian immigrants, Asian Americans, and White Americans. *Psychology in the Schools*, 34, 267-277.

- Muller, C. (1993). Parent involvement and academic achievement: An analysis of family resources available to the child. In B. Schneider & J. Coleman (Eds.), *Parents, their children and schools* (pp. 77-113). San Francisco: Westview.
- National Center for Education Statistics. (2001). Estimated number of home schooled students in the United States. *Home Schooling in the United States: 1999*. (NCES 2001033) Retrieved October 1, 2003, from <http://nces.ed.gov/pubs2001/HomeSchool/estimate.asp>
- National Commission on Teaching & America's Future. (1996, September). *What matters most: Teaching for America's future*. New York: Author.
- Neufeld, C. (2002, November 18). Homeschool lessons: Letter to the editor. *Christianity Today*, 46(12), 12-13.
- Okpala, C., Okpala, A., & Smith, R. (2001). Parental involvement, instructional expenditures, family socioeconomic attributes, and student achievement. *Journal of Educational Research*, 95(2), 110-115.
- Ray, B. D. (1997). *Strengths of their own – home schoolers across America: Academic achievement, family characteristics, and longitudinal traits*. Salem, OR: National Home Education Research Institute.
- Ray, B. D. (2002, April). Customization through homeschooling. *Educational Leadership*, 59(7), 50-54.
- Ray, B. D., & Rudner, L. M. (2001). *Home schooling achievement*. Retrieved October 10, 2003, from the Home School Legal Defense Association Web site: <http://www.hslda.org/docs/study/comp2001/HomeSchoolAchievement.pdf>
- Reynolds, A. (1992). Comparing measures of parental involvement and their effects on academic achievement. *Early Childhood Research Quarterly*, 7(3), 441-462.
- Rudner, L. M. (1999). Scholastic achievement and demographic characteristics of homeschool students in 1998. *Educational Policy Analysis Archives*, 7(8). Retrieved February 28, 2003, from <http://epaa.asu.edu/epaa/v7n8>
- Schabner, D. (2001, September 4). *Looking for an answer: Home schooling offers alternative, challenge for parents and kids*. Retrieved September 16, 2003, from http://abcnews.go.com/sections/us/DailyNews/home_school010810.html
- Scheller, C. (2002, September 9). No dissing this learning: Homeschools do as well, if not better, than their classroom counterparts. *Christianity Today*, 46(10), 49.
- Sealover, I. E. (1988). *The relationship between parental involvement and academic achievement of high school students*. (ERIC Document Reproduction Services, No. ED 321191)
- Stevenson, D., & Baker, D. (1987). The family-school relation and the child's school performance. *Child Development*, 58, 1348-1357.
- Support for homeschoolers can pay off for all students. (2003, September 3). *USA Today*, p. A11. Retrieved October 10, 2003, from <http://pqasb.pqarchiver.com/USAToday/393930121.html?did=393930121&FMT=ABS&FMFS=FT&desc=Support+for+homeschoolers+can+pay+off+for+all+students>
- Thernstrom, S., & Thernstrom, A. (2003). *No excuses: Closing the racial gap in learning*. New York: Simon & Schuster.
- Thorkildsen, R., & Stein, R. S. (1998). Is parental involvement related to student achievement? Exploring the evidence. *Research Bulletin*, 22, 17-20.
- Weiner, B. (1974). *Achievement motivation and attribution theory*. Morristown, NJ: General Learning Press.
- Weiss, H. B., Mayer, E., Kreider, H., Vaughan, M., Dearing, E., Hencke, R., & Pinto, K. (2003). Making it work: Low-income working mothers' involvement in their children's education. *American Educational Research Journal*, 40(4), 879-901.

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- Yan, W. (1999). Successful African American students: The role of parental involvement. *Journal of Negro Education*, 68(1), 5-22.
- Zellman, G. L., & Waterman, J. M. (1998). Understanding the impact of parent school involvement on children's educational outcomes. *Journal of Educational Research*, 91(6), 370-80.

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