The Impact of Basic-Level Parent Engagements on Student Achievement: Patterns Associated with Race/Ethnicity and Socioeconomic Status (SES)

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What is This?
The recent reauthorizations of the No Child Left Behind Act (NCLB) and the Individuals with Disabilities Education Act (IDEA) hold states and local schools accountable for ensuring all students achieve high academic standards. Two recent reports on the state and local implementation of NCLB (Le Floch et al., 2007) and IDEA (O’Reilly et al., 2006) document both considerable progress and continuing challenges. Students with disabilities and students from ethnically/linguistically diverse backgrounds were most likely not to make adequate yearly progress under NCLB accountability measures (Le Floch et al., 2007). The gap between the academic achievement of students with and without disabilities and the need to increase parent participation in education were both noted as key challenges for improving the implementation of IDEA in schools (O’Reilly et al., 2006). Parent involvement is widely regarded as important for improving student academic achievement because strong empirical evidence exists in general education that links parent involvement in education to student achievement (e.g., Jeynes, 2005; Kohl, Lengua, & McMahon, 2000; Pomerantz, Moorman, & Litwack, 2007). The purpose of this study was to examine the influence of parent involvement on academic achievement of students with disabilities by analyzing a large-scale national database. Effects of race/ethnicity were also examined by using Caucasian as a reference group. The Caucasian group was chosen as the reference group because it was the largest group and appropriate for statistical analyses. We had no intention to imply that its practices were regarded as standards for other groups.

Parent involvement has been conceptualized and defined in many ways. One widely accepted approach views and defines parent involvement from an activity-based perspective (Jeynes, 2005; Kohl, Lengua, & McMahon, 2000; Pomerantz, Moorman, & Litwack, 2007). The purpose of this study was to examine the influence of parent involvement on academic achievement of students with disabilities by analyzing a large-scale national database. Effects of race/ethnicity were also examined by using Caucasian as a reference group. The Caucasian group was chosen as the reference group because it was the largest group and appropriate for statistical analyses. We had no intention to imply that its practices were regarded as standards for other groups.

Parent involvement has been conceptualized and defined in many ways. One widely accepted approach views and defines parent involvement from an activity-based perspective.
and family involvement is the cornerstone of special education and ongoing evolution of federal special education. Families (Eccles & Harold, 1996; Epstein, 1995; Fishel & Ramirez, 2005; Grolnick & Slowiaczek, 1994). For example, Kohl et al. (2000) proposed a model that conceptualizes parent involvement as containing three dimensions: (a) parent–teacher contact to facilitate monitoring children’s school progress and helping them with homework, (b) parent involvement in school activities, and (c) parent involvement directly with the child at home to facilitate intellectual stimulation and school success. In this study, parent involvement is defined as parent engagement in school-sponsored and home activities that promote student educational outcomes. More specifically, this study focuses on three basic-level parent engagements in school and home settings: parent participation in school activities, parents’ talking to their child about school experiences, and parents’ expectations for their child to graduate from high school.

Prior Research on Parent Involvement and Student Achievement

General education. In the field of general education, strong empirical evidence exist that links parent involvement to student achievement. An early review of 49 studies by Henderson (1987) indicated that (a) a positive learning environment at home had a powerful impact on student achievement; and (b) school-based training programs for low-income families improved language skills, test performance, and school behavior for their children. Carter (2002) examined research over 10 years and concluded that parental involvement had a positive impact on student outcomes that spanned elementary, middle school, and secondary years. Finally, based on a comprehensive review of the empirical literature on parent involvement and children’s academic achievement, Pomerantz et al. (2007) concluded that research documenting the impact of parent involvement on children’s achievement was “compelling.” Parent involvement has also been found to have a long-term effect on student learning outcomes. Keith et al. (1998) examined the longitudinal effects of parent involvement on high school students’ grades using data from the base year and the first follow-up of the National Education Longitudinal Study through a longitudinal structural equation model. They found that parent involvement, as measured in eighth grade, had a strong effect on students’ 10th-grade GPA (grade point average); each standard deviation increase in eighth grade parent involvement could be expected to result in a 0.25 standard deviation increase in GPA.

Special education. As important as family involvement is to the education and achievement of students in the general population, it can be argued that it is even more important to the academic success of students with disabilities. Families of children with disabilities have played a critical role in the initial establishment and ongoing evolution of federal special education law (Weintrab, Abeson, Ballard, & LaVor, 1976) and family involvement is the cornerstone of special education policy and practice (Turnbull & Turnbull, 2001). Compared to general education, however, only a small number of empirical studies have examined the relationship between parent involvement and student achievement in special education. Calderon (2000) examined the impact of school-based, teacher-rated parental involvement on language development for 28 preschool children who were deaf and attended an early intervention program. It was found that parent involvement in children’s school-based education programs was a significant predictor of early reading skills. Miedel and Reynolds (1999) interviewed 704 parents of children in early intervention programs to investigate the association between parent self-reported involvement and children’s later school competence. Results indicated that the number of activities in which parents participated in preschool and kindergarten was significantly associated with their children’s later academic achievement, including lower rates of grade retention at eighth grade and fewer years in special education. The frequency of parent involvement was also associated with reading achievement, although the significance of such association was marginal. Deslandes, Royer, Potvin, and Leclerc (1999) collected data from 525 general education students and 112 special education students at the secondary level regarding their perception of home–school partnership and the relationship of such perception to two educational outcomes: grades in French and time spent on homework. Results showed that, for special education, parent involvement at home in learning activities and in supervision of their children’s whereabouts had the largest association with grades and time spent on homework.

Factors Related to Parent Involvement

Research has consistently found that certain demographic factors affect parent involvement in their children’s education (Watkins, 1997). The three most widely recognized demographic factors are ethnicity, educational level, and SES (socioeconomic status; Trivette & Anderson, 1995).

Race/ethnicity. A number of research studies have consistently identified race/ethnicity as a factor influencing parent involvement in education. By examining the longitudinal effect of parent involvement and student GPA, Keith et al. (1998) found that parents’ ethnicity affected their involvement in education and had differential degrees of effect on student GPA, although involvement improved student GPA for all ethnicities. Minority parents perceived homework as a means of improving their children’s education and were more likely to help their children with homework (Stevenson, Chen, & Uttal, 1990). The effect of parent involvement on student achievement varied depending on the parent’s racial/ethnic status (Desimone, 1999). Parent involvement was a better predictor for European American and Asian American groups than for Hispanic and African American groups. Another study conducted by Lee and Bowen (2006) revealed that European American parents were more involved in schools and less involved in managing their children’s time.
use at home than African Americans and Hispanic/Latino parents, and had more parent–child educational discussions than Hispanic/Latino parents. Sui-Chu and Willms (1996) conducted a study with a large representative sample of U.S. middle school students and found that Asians parents had lower levels of engagement in home discussion, school communication, and school participation than did European Americans but higher levels in home supervision, whereas Hispanic parents engaged in more home supervision than European Americans. More recently, Seyfried and Chung (2002) also found differences in level and type of parent involvement between African and European Americans, with European American parents having higher expectations of schooling for their children than African American parents.

Socioeconomic status. Research findings on the impact of SES on parent involvement are mixed. On the one hand, it has been found that parents with higher SES are more likely to be involved in schools (Grolnick, Benjet, Kurowski, & Apostoleris, 1997). In Sui-Chu and Willms’s (1996) study, SES was significantly and positively related to parent involvement although the effect size was relatively small. On the other hand, it was found that SES was not an influencing factor in determining the level of parent involvement (Shaver & Walls, 1998). In terms of educational level, it was found that parents with less education were less likely to help their children with homework due to a lack of skills necessary to help (Baker & Stevenson, 1986; Masino & Hodapp, 1996; Watkins, 1997).

Student factors. Some studies have examined the effect of student factors, such as gender and age, on parent involvement and yielded mixed findings. Stevenson and Baker (1987) found that the level of parent involvement was different for boys and girls. Sui-Chu and Willms (1996) reported that parents showed different levels of involvement for male versus female students. More recently, Grolnick et al. (1997) found that when facing a difficult context or a lack of social support, parent involvement was lower for boys than for girls because they tended to withdraw resources from boys, who were seen as relatively more independent than girls. On the contrary, Keith et al. (1998) found that parent involvement had the same and strong effect on student grades for boys and girls. With regard to age or grade level, Shaver and Walls (1998) found that student grade level did not interact with parent involvement to affect student achievement. On the other hand, age has been found to be a predictor of parent expectations (Masino & Hodapp, 1996).

Need for This Study

Given the importance of parent involvement in special education, there has been surprisingly little empirical research examining the impact of parent involvement on the academic achievement of students with disabilities. In addition, most prior studies conceptualized parent involvement broadly, making it difficult to pinpoint what specific parent behaviors improve student achievement. Moreover, most prior research did not consider the effect of parent involvement within the racial/ethnic and socioeconomic SES contexts. This study addresses these needs by analyzing a large-scale national database to provide empirical evidence about the influence of parent involvement. We specifically focused on three basic-level parent engagements in school and home settings: (a) participation in school meetings, school events, teacher–parent conferences, and volunteer activities; (b) talking to the child about school experiences; and (c) expressing expectations for the child to graduate from high school. We chose these three types of engagements because they are most basic types of parent involvement and are expected of all parents. We also included race/ethnicity and SES in our model to examine the interaction effect of these variables on parent engagement and on student academic achievement (see Figure 1). Two research questions were addressed. First, how do racial/ethnic and SES differences relate to the three basic-level parent engagements? Second, what is the relationship between the three basic-level parent engagements and student academic achievement? Because of our focus on examining potential racial/ethnic and SES differences, we controlled for other demographic factors (gender and age) in the model.

Method

Data Source

Data were drawn from the Special Education Elementary Longitudinal Study (SEELS) conducted by SRI International (Wagner, Kutash, Duchnowski, & Epstein, 2005). SEELS is a part of the national assessment studies authorized by the 1997 IDEA and was designed to obtain a national picture of the characteristics, experiences, and achievements of students with disabilities aged 6 through 12 on September 1, 1999 (i.e., seven cohorts). For the purpose of making valid generalizations across the nation, a representative sample of 13,176 students was selected from 245 local education agencies and 32 special schools across the country.

The seven cohorts were followed up repeatedly through three waves of data collection between 2000 and 2006. Data were collected by multiple means including direct student assessments, parent/guardian interviews, and teacher and school administrator questionnaires. This large database, therefore, provides a comprehensive national picture of the experiences and outcomes of students in special education as they moved from elementary school to higher grade levels (Wagner et al., 2005). Data from the seven cohorts across three waves covered a total of 14 grade years (Grades 0–13). To make sure that data from the three waves were consistent with each other, we examined potential wave effect and found no substantial difference among waves on all the target variables ($\eta^2$ ranged from 0.00 to 0.02). Hence, we combined data from all three waves for analysis while the wave
effect was still taken into account by including the dummy coded wave variables as covariates.

Sample

The sample for this study was selected in two steps. First, we selected students from all 14 grade years (Grade 0 to Grade 13) who, (a) belonged to any one of the following races/ethnicities: African American, Asian/Pacific Islander, Caucasian, or Hispanic; (b) had participated in the direct assessment; and (c) had grade information. Next, we excluded students in Grade 1 and below, and students in Grade 10 and above because of small sample sizes. This was done to prevent unreliable results. As a result, eight subsamples from Grades 2 to 9 were created (the numbers of these subsamples are presented in Table 1). These eight subsamples were used in subsequent data analyses as specified in our model (see Figure 1). We separately examined the
influence of race/ethnicity and its interaction with SES on parent involvement and the effect of parent involvement on student academic achievement for each subsample. This was done to examine effect consistency across grades.

Measures

SEELS data were collected using six instruments. In the present study, data were extracted from the raw data provided to us on a CD distributed by SRI International at a training program sponsored by the U.S. Department of Education. The first author participated in the training and was authorized to use the raw data.

Demographic variables. Based on the model explained above, we extracted three demographic variables from the SEELS database: race/ethnicity, age, and gender. Race/ethnicity consisted of four groups: African American, Asian/Pacific Islander, Caucasian, and Hispanic. Other racial/ethnic groups were excluded because of the small number of members in those groups. Descriptive statistics of these demographic variables are presented in Table 1.

SES composite score. SES composite score was computed based on five items serving as indicators of family SES: (a) family in poverty, (b) receiving money from TANF (Temporary Assistance for Needy Families) or a state welfare program in the past two years, (c) currently receiving food stamps, (d) receiving SSI (social security income) benefits for the child in the past two years, and (e) head of household’s education level. Of these five items, head of household’s education level had three levels: “Less than high school,” “High school graduate or GED,” and “Some College;” the other four items were dichotomized (i.e., “yes” or “no”). To create the SES composite score, we first coded responses to these five items according to the following scoring scheme: Item (a), if a response was “yes,” it was coded as 0; if a response was “no,” it was coded as 1. Items (b), (c), and (d) were combined and assigned one code. If a response to any of these three items was “yes,” it was coded as 0; if all three responses were “no,” it was coded as 1. For Item (e), if a response was “less than high school,” it was coded as 0; if a response was high school graduate or higher, it was coded as 1. After the coding, we added the three new variables together and created a SES composite score, which ranged from 0 to 3, with 3 indicating the highest SES.

Parent participation in school activities. Four parent-reported items were selected to measure parent participation in school activities. These items asked whether the parents or another adult in the household had (a) attended a general school meeting, (b) attended a school/class event, (c) volunteered at their child’s school, or (d) attended a parent/teacher conference other than an IEP (individualized education program) meeting. The initial response choices for these five items were “yes” or “no.” If the answer was “yes,” the parents also reported how often (number of times) they attended these activities in the past year. In this study, we converted these four school involvement items into a 5-point scale: never (coded as 0), 1–2 times (coded as 1), 3–4 times (coded as 2), 5–6 times (coded as 3), or more than 6 times (coded as 4).

Parent engagement at home. There were two variables selected for measuring different aspects of parent engagement at home. The first variable measured the frequency with which parents talked to their child about his/her experiences in school. Possible answers were: “not at all” (coded as 1), “rarely” (coded as 2), “occasionally” (coded as 3), or “regularly” (coded as 4). The second variable measured whether parent had any expectations for the child to graduate from high school. This was measured by: “definitely will not” (coded as 1), “probably will not” (coded as 2), “probably will” (coded as 3), and “definitely will” (coded as 4).

Academic achievement. Four standardized achievement scores in math and reading were extracted from the SEELS direct assessment data as measures of student achievement. SEELS used the Woodcock-Johnson Research Edition to measure student achievement in four areas: passage comprehension, letter-word identification, applied problem in math, and calculation. W-scores from these four areas were used as measures of academic achievement in our study. The average zero-order correlations between these four achievement measures ranged from .67 to .80 across all grade levels. Based on the theoretical model, we selected four items to measure parent involvement in school (participating in school meetings, school events, teacher–parent conferences, and volunteer work), one item to measure the frequency of parents’ talking to child about school, and one item to measure parent expectations. Specific information about all the selected items may be obtained from the first author.

Data Analysis

Structural Equation Modeling (SEM) was used for analyzing the data. SEM permits simultaneous examination of numerous causal links to the identified dependent variable. In addition, it allows a model with both manifest variables (directly observable) and latent variables (unobservable) to be estimated simultaneously. We used Mplus V.5.2 (Muthén & Muthén, 2007) to conduct all the analyses in this study. By adopting the multiple group analysis approach, we could fit the same hypothesized model shown in Figure 1 to each of the eight grade years (subsamples) simultaneously. All analyses were conducted using the “Type = Complex” feature in Mplus (Muthén & Muthén, 2004), which took the dependency among observations (i.e., students nested within school districts) into account by using Huber-White adjusted standard errors. Missing data were handled by using the “Type = Missing” feature in Mplus, which adopted the full information maximum likelihood (FIML) approach to incorporate information of incomplete responses into the analyses.
Table 2. Percentage of Students at Each SES Level by Racial/ Ethnic Group

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>SES</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>Total</td>
</tr>
<tr>
<td>Caucasian</td>
<td>2.0%</td>
<td>8.4%</td>
<td>17.2%</td>
<td>72.4%</td>
<td>100%</td>
</tr>
<tr>
<td>(n = 8,967)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>9.7%</td>
<td>25.9%</td>
<td>31.1%</td>
<td>33.3%</td>
<td>100%</td>
</tr>
<tr>
<td>(n = 2,442)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>11.2%</td>
<td>23.9%</td>
<td>30.1%</td>
<td>34.8%</td>
<td>100%</td>
</tr>
<tr>
<td>(n = 1,501)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>4.7%</td>
<td>9.7%</td>
<td>18.0%</td>
<td>67.6%</td>
<td>100%</td>
</tr>
<tr>
<td>(n = 278)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: SES = socioeconomic status.

Results

Descriptive Statistics

Table 2 shows the percentage of students from each racial/ethnic group at each SES level. The majority of Caucasian and Asian students were from middle and high (2 and 3) SES families, with a large percentage of Caucasian (72.4%) and Asian/Pacific students (67.6%) from the highest (3) SES families. As for African American and Hispanic students, only about one-third were from the highest (3) SES families. African American and Hispanic students tended to be more evenly distributed across all three levels (1 to 3). Means and standard deviations for the four primary variables (SES, school engagement, home engagement, and achievement) in the model are presented in Table 3. Because of the large number of correlations between the target variables across eight grade years, the correlation matrices for each grade year are not presented in this paper. These matrices may be obtained from the first author via email. As shown in Table 3, SES level was generally stable across all eight grades. There seems to be a general declining trend on all the items measuring parent participation in school activities. “Talked to child” and “parent expectations” were consistent across grades. In addition, student academic performance showed a general trend of improvement over time.

Overall Structural Model

The purpose of this study was to examine basic-level parent engagement in school and home settings regarding the influence of race/ethnicity, SES, and the interaction of these two factors on parent engagement. In addition, the influence of parent engagement on student achievement was investigated. The overall model chi-square test (i.e., fitting the same hypothesized model to each of the eight grade years simultaneously) was statistically significant ($\chi^2 = 5518.348$, $df = 836$, $p < .01$), which indicated that the hypothesized model did not fit the data perfectly. Nevertheless, the overall model chi-square test was a function of the sample size and the large model chi-square value might be just a result of the large sample size of the present study. Hence, we also adopted other commonly used fit indices including RMSEA (Root Mean Square Error of Approximation) and CFI (comparative fit index) to evaluate the model. In our study, fit index statistics (CFI = .93, RMSEA = .06, SRMR = .05) indicated that the hypothesized model fit the data at each grade level (i.e., from second to ninth grades) adequately (Hu & Bentler, 1999). The effect sizes ($R^2$) reported in the end of Table 4 indicate the percentage of academic achievement explained by including each of the variables in the hypothesized model in each grade. As illustrated, $R^2$ ranged from 4.8% (in ninth grade) to 13.1% (in fourth grade).

There are two latent variables included in the hypothesized model: parent participation in school activities (measured by four observed variables) and academic achievement (measured by four observed variables). As shown in Table 5, all factor loadings were significant ($p < .05$) and the observed variables consistently loaded on the corresponding latent factors across all eight grades, with loadings ranging from .37 to .77 for parent participation in school activities, and from .90 to .98 for the academic achievement.

Patterns of Parent Engagement Associated with Race/Ethnicity and SES

The influences of race/ethnicity and SES on parent engagement were tested in our model. Table 4 contains standardized path coefficients for all three types of parent engagements with comparisons between racial groups. This was calculated by using Caucasian as a reference group. Any of the groups could be chosen to serve as the reference group for comparison purpose; We chose the Caucasian group because it was the largest group, with no intention to imply that its practices were regarded as standards for other groups. Interaction effects between race/ethnicity and SES were also examined and the results are included in Table 4.

Parent participation in school activities. To test the influence of race/ethnicity on the three parent engagements, we used three dummy variables to represent the four different races/ethnicities and made the Caucasian group the reference group. All the significant standardized path coefficients from the dummy coded racial/ethnic variables to parent participation in school activities indicate statistical differences between the Caucasian group and the other racial/ethnic groups (see Table 4). For example, the path coefficient from African American to parent participation in school activities in second grade was $-0.20$ ($p < .05$), which indicates that African American parents on average had lower level of participation in school activities than their Caucasian counterparts (by .20 standard deviation). According to the results presented in
Table 3. Means and Standard Deviations of SES, School Engagement, Home Engagement, and Academic Achievement at Each Grade Level

<table>
<thead>
<tr>
<th>Variables</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
<th>Grade 6</th>
<th>Grade 7</th>
<th>Grade 8</th>
<th>Grade 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>SES</td>
<td>2.35 (0.88)</td>
<td>2.35 (0.89)</td>
<td>2.36 (0.89)</td>
<td>2.38 (0.90)</td>
<td>2.36 (0.89)</td>
<td>2.39 (0.88)</td>
<td>2.45 (0.83)</td>
<td>2.42 (0.85)</td>
</tr>
<tr>
<td>School engagement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School meeting</td>
<td>1.76 (1.19)</td>
<td>1.77 (1.18)</td>
<td>1.80 (1.20)</td>
<td>1.74 (1.15)</td>
<td>1.67 (1.14)</td>
<td>1.49 (1.08)</td>
<td>1.47 (1.08)</td>
<td>1.34 (1.03)</td>
</tr>
<tr>
<td>School/class event</td>
<td>1.61 (1.22)</td>
<td>1.56 (1.22)</td>
<td>1.56 (1.24)</td>
<td>1.59 (1.23)</td>
<td>1.48 (1.27)</td>
<td>1.34 (1.33)</td>
<td>1.42 (1.39)</td>
<td>1.43 (1.53)</td>
</tr>
<tr>
<td>Volunteered at school</td>
<td>1.26 (1.48)</td>
<td>1.16 (1.40)</td>
<td>1.09 (1.36)</td>
<td>1.02 (1.34)</td>
<td>0.80 (1.22)</td>
<td>0.59 (1.07)</td>
<td>0.58 (1.06)</td>
<td>0.46 (1.02)</td>
</tr>
<tr>
<td>Parent/teacher conference</td>
<td>1.50 (1.06)</td>
<td>1.48 (1.03)</td>
<td>1.43 (1.05)</td>
<td>1.42 (1.00)</td>
<td>1.43 (1.08)</td>
<td>1.26 (1.05)</td>
<td>1.16 (1.03)</td>
<td>1.03 (1.00)</td>
</tr>
<tr>
<td>Home engagement</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Talked to child</td>
<td>3.89 (0.44)</td>
<td>3.88 (0.42)</td>
<td>3.88 (0.42)</td>
<td>3.89 (0.40)</td>
<td>3.89 (0.40)</td>
<td>3.88 (0.40)</td>
<td>3.87 (0.43)</td>
<td>3.89 (0.37)</td>
</tr>
<tr>
<td>Parent Expectations</td>
<td>3.53 (0.66)</td>
<td>3.51 (0.69)</td>
<td>3.46 (0.73)</td>
<td>3.45 (0.76)</td>
<td>3.46 (0.76)</td>
<td>3.42 (0.78)</td>
<td>3.44 (0.79)</td>
<td>3.41 (0.83)</td>
</tr>
<tr>
<td>Academic achievement</td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Passage comprehension</td>
<td>4.61 (0.26)</td>
<td>4.70 (0.27)</td>
<td>4.78 (0.26)</td>
<td>4.82 (0.26)</td>
<td>4.86 (0.24)</td>
<td>4.92 (0.22)</td>
<td>4.95 (0.21)</td>
<td>4.98 (0.21)</td>
</tr>
<tr>
<td>Letter-word</td>
<td>4.42 (0.40)</td>
<td>4.59 (0.41)</td>
<td>4.71 (0.41)</td>
<td>4.80 (0.40)</td>
<td>4.85 (0.40)</td>
<td>4.95 (0.39)</td>
<td>5.02 (0.38)</td>
<td>5.07 (0.40)</td>
</tr>
<tr>
<td>Applied problems</td>
<td>4.53 (0.33)</td>
<td>4.68 (0.33)</td>
<td>4.75 (0.35)</td>
<td>4.85 (0.35)</td>
<td>4.92 (0.35)</td>
<td>4.99 (0.33)</td>
<td>5.04 (0.33)</td>
<td>5.07 (0.32)</td>
</tr>
<tr>
<td>Calculation</td>
<td>4.71 (0.19)</td>
<td>4.82 (0.21)</td>
<td>4.90 (0.21)</td>
<td>4.99 (0.21)</td>
<td>5.04 (0.22)</td>
<td>5.09 (0.22)</td>
<td>5.14 (0.22)</td>
<td>5.16 (0.23)</td>
</tr>
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</table>

Note: SES = socioeconomic status. All means and standard deviations (in parentheses) were computed after listwise deletion.

Table 4, there is a general pattern in which African American parents showed lower rate of participation in school activities than Caucasian parents at most of the grade levels except for eighth and ninth grades (path coefficients ranged from −.04 to −.27). On the other hand, although a similar pattern of results (i.e., lower rate of participation in school activities compared with Caucasian parents) was also found in both Hispanic and Asian/Pacific Islander parents, many of these differences were trivial and not statistically significant. Similarly, a consistent relationship existed between SES and participation in school activities across all grade years in which parents from lower SES families reported less participation in school activities. Moreover, we found that SES moderated the discrepancy between Caucasian and African American parents in their participation in school activities from third grade to sixth grade (SES × AA ranged from −.12 to −.17). For example, standardized path coefficients of race/ethnicity (African American vs. Caucasian) by SES interaction term, SES × AA, in third grade was −.14 (p < .05), which indicated that African American parents with high SES had lower level of participation in school activities than Caucasian parents with the same SES, but this discrepancy is decreased as SES decreased. A similar pattern of race/ethnicity by SES interaction effects was also found in Grades 4 to 6.

Parent engagement at home: Having expectations for their child to graduate from high school. There was no substantial discrepancy between parents of different racial/ethnic groups on their expectations for the child to graduate from high school in most of the grade years. However, SES became an important factor in predicting parent expectations. Fewer parents from low SES families expected their child to graduate from high school than those from high SES families. No substantial interaction effect between race/ethnicity and SES was found in most grades.

Academic achievement. The two types of parent engagement at home (i.e., talking to the child about school experiences and having expectations for the child to graduate from high school) consistently had a positive impact on student academic achievement in most of the grade years, while parent participation in school activities only had a couple of significant effects on academic achievement. Higher level of parent engagement at home, rather than participation in school activities, resulted in better academic performances.

Discussion

As the literature suggests, many factors affect student achievement, and parent involvement is one of the factors proven to affect student learning in general education. Prior research has indicated that the level of parent involvement varies based on such demographic variables as race/ethnicity and SES. The purpose of this study was to examine the influences of race/ethnicity and SES on basic-level parent engagements in school and home settings, and how these
engagements affected student academic achievement after controlling for other demographic variables. Overall, we found that parent engagement at home (i.e., talking to the child about school and having expectations for the child to graduate from high school) was positively associated with student academic achievement, while parent participation in school activities did not significantly affect student academic achievement. The frequency of parent engagement was affected by race/ethnicity but mediated by family SES. Specifically: (a) for high SES families, Caucasian parents were more likely to participate in school activities than African American parents, but the gap between these two groups gradually decreased as SES level decreased; (b) compared with Caucasian parents, African American parents were less likely to talk to their child about school experiences in the early school years; and (c) parents from high SES families...
tended to have expectations for their child to graduate from high school.

As is the case in general education, parent engagement was found to positively predict student learning, but this was true only for home engagement, not participation in school activities. This finding is perplexing because, on the one hand, it provides empirical evidence to support some of the anecdotal findings and arguments for parental involvement in special education (e.g., Keith et al., 1998; Turnbull & Turnbull, 2001); on the other hand, it shows that parent participation in school events and activities had no significant effect on student achievement.

The finding that parent engagement at home positively predicted student achievement is consistent with findings of previous studies in both general and special education (e.g., Deslandes et al., 1999; Henderson, 1987), which found that a positive learning environment at home had a powerful impact on student achievement and that parent involvement in learning activities at home and involvement in supervision of their children’s whereabouts at home had the largest association with grades and time spent on homework. As some researchers point out, little empirical evidence exists in special education to convince parents that their involvement increases student academic performance (Mattingly, Praslin, McKenzie, Rodriguez, & Kayzar, 2002). The findings from this study provide some evidence for some basic-level parent engagements. The empirical link established between engagement at home and student achievement provides evidence for parents of students with disabilities to increase their level of engagement at home because SEELS is a large-scale data source with a nationally representative sample. It seems that parents of students with disabilities may need to engage in talking with their children about school and having expectations for them.

With regard to parent participation in school activities, our finding seems to be contradictory of some previous research in general education that found parent involvement in school enhances student academic achievement (e.g., Miedel & Reynolds, 1999). This difference is probably attributable to the differences of parent behaviors measured because this study focused on basic-level parent engagement rather than broadly defined parent involvement. Because SEELS does not include data that would allow us to examine why parent participation in school activities does not significantly affect student academic achievement, future research is needed to investigate this relationship. Our study found that Caucasian families with high SES were more involved in school activities than some of the other groups with the same SES. However, this difference was relatively small for families with low SES. The findings suggest that when families have to struggle with daily living needs, their participation in school events and activities is low regardless of their race/ethnicity. It seems that schools may need to expand their activities to offer various ways, other than traditional school activities, for low-income families to participate in school activities. Such activities may need to be available at alternative times and in alternative formats. Schools and professionals also need to realize that parents from low-income families may care about and value their children’s education in a different way and this different way of involvement needs to be recognized and promoted.

The finding that Caucasian families tend to be more involved in school activities than families of other races/ethnicities is consistent with that of Lee and Bowen (2006). The discrepancies may suggest that participation in school events and activities is a cultural phenomenon and it may be a widely accepted practice for middle- and upper-class Caucasian families to participate in these activities (e.g., volunteer activities, meetings, etc.). Minority families with the same SES, however, may prefer other ways of involvement. For example, many Asian parents choose to work with their children at home by helping them with homework, giving them extra learning tasks, and sending them to afterschool enrichment programs (Stevenson et al., 1990; Zhang, 2006).

Our study found that students whose parents talked to them about their school experiences or had expectations for them to graduate from high school had better academic achievement in almost all grades. It was also found that parents with higher SES were more likely to have expectations for their child to graduate from high school than parents with lower SES. However, in general, African American parents spoke less frequently with their child about school experiences in the early school years and this difference was not affected by SES or the interaction effect between race/ethnicity and SES. This finding in itself does not indicate that African American parents did not communicate with their child about school. It simply means that these parents did

Table 5. Factor loadings of the Two Latent Constructs (School Engagement and Academic Achievement) in the Hypothesized Model at Each Grade Level

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<th>Grade</th>
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<td>.59</td>
<td>.61</td>
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<tr>
<td>School/class event</td>
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<td>.73</td>
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<td>Volunteered</td>
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<td>Parent/teacher conf.</td>
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<td>.47</td>
<td>.42</td>
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<td>Academic achievement</td>
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<td>Passage comprehension</td>
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<td>Applied problems</td>
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Note: All factor loadings were statistically significant at $\alpha = .05$ level.
not use this one approach as frequently as some other parents. They may frequently use other ways to communicate with their child. Future research is needed to investigate what other ways that African American parents use to communicate with their child about school experiences. Given the strong link between parent expectations and student academic achievement, more research is also needed to identify effective strategies that would encourage all parents to identify and use their effective ways to communicate with their children about school and have expectations for their children.

Limitations of the Study and Recommendations for Future Research

Data analyzed in this study came from large-scale research that collected data in numerous areas. Despite this wide coverage, items pertaining to the broad idea of parent involvement were limited. In-depth analyses of various types of parent involvement and the degree of their involvement, as well as their relationship to student achievement were not part of this study. For example, information was not available on what specific types of school activities parents participated in, leadership/organizational roles they played, length of their participation in a specific meeting, role during IEP meetings, and the way they communicated expectations to their child. In addition, the only achievement data in SEELS were the Woodcock-Johnson math and reading scores, although some teacher-reported data about student reading levels were available. Student grades from schools, which might be as important a measure of student achievement as standard scores, were not available for analyses. Future research can build on this national study and focuses on collecting more detailed data on specific types of parent engagement and their impact on student achievement, which can include student grades from schools. The second limitation of the study involves the way we treated factors that influence parent involvement. Because of our interest in examining the influence of race/ethnicity and SES, we employed a statistical procedure to control for other factors (e.g., student and school factors). Although this was methodologically appropriate, the effect of other student and school factors was not specifically or individually examined. Future research may be needed to analyze the SEELS data to specifically examine the impact of these factors.

In conclusion, the findings of the current study provide empirical evidence that parent engagement at home enhances the academic achievement of students with disabilities. Because these findings were based on analyses of data from a nationwide sample, the evidence is more likely to convince parents to increase their engagement in their children’s education. Concerted efforts by schools and parent organizations are needed to increase parent awareness of the need to engage in certain activities.

Conclusions

Parent involvement in education has been widely regarded as a best practice in special education. The Individuals with Disabilities Education Act (IDEA) of 1990, 1997, and 2004 include specific requirements that hold state and local education agencies accountable for involving parents in their children’s education, especially when transition services are discussed. Local education agencies have the responsibilities to develop and implement policies that encourage parent involvement. To reflect cultural differences and to meet the unique needs of parents from diverse cultures, schools need to offer different types of activities and different forms of involvement opportunities.

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