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Behavioral Competence and Academic Functioning Among Early Elementary Children With Externalizing Problems

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Abstract. The positive effect of competent behaviors on academic functioning may outweigh the negative effect of externalizing problems. The current study examined this premise among children with externalizing problems in the early elementary years. Participants were 207 kindergarten through third-grade children and their parents and teachers. Results suggested that children's behavioral competence made a unique contribution to all aspects of academic functioning examined (i.e., academic problems, reading and math achievement) over and above a variety of child background characteristics, including externalizing problems. Furthermore, children's behavioral competence buffered the negative effects of limited parental education on children's reading achievement. That is, among children of parents with less than a college degree, children's reading achievement was higher for those whose behavioral competence was average than for those whose behavioral competence was at risk. Findings highlight the significance of identifying and promoting behavioral competencies when working with children with behavior problems.

Attempts to understand the relation between children's behavioral and academic functioning have been informed by at least two approaches. One approach has focused on behaviors that interfere with learning. For instance, research has shown that children's behavior problems, such as externalizing behaviors, are predictive of academic underachievement and underattainment (Bub, McCartney, & Willett, 2007; Fergusson & Horwood, 1998; Hinshaw, 1992). A second approach has focused on behaviors that promote children's learning and achievement. For example, children's behavioral competencies, such as prosocial skills, social responsibility, and study skills, are strong predictors of enhanced

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academic functioning (DiPerna, Volpe, & Elliott, 2002; Green, Forehand, Beck, & Vosk, 1980; Malecki & Elliott, 2002; McClelland, Acock, & Morrison, 2006; Wentzel, 1991). Whereas behavioral problems and competency often coexist in children's behavioral repertoires, they are often examined in isolation. Thus, how behavioral problems and competencies jointly operate to affect children's academic functioning has not been sufficiently examined.

The current research aims to draw these two approaches together by investigating how behavioral competence is related to academic functioning among a sample of early elementary school children who display externalizing problems. Externalizing problems are defined as undercontrolled behaviors often manifested as hyperactivity, aggression, disruptiveness, defiance, and impulsivity (Achenbach & Edelbrock, 1978; Bub et al., 2007). For children who display such behaviors, much emphasis has been placed on the negative effect of these behaviors on academic functioning that, in turn, has guided development of numerous intervention programs to address these issues (see Farmer, Compton, Burns, & Robertson, 2002). In contrast, our understanding of and interest in the role of behavioral competence in academic functioning among children with externalizing problems appears to be relatively limited. This is a notable gap, given growing evidence that the positive effect of competent behaviors on academic functioning may outweigh the negative effect of externalizing problems (Caprara, Barbaranelli, Pastorelli, Bandura, & Zimbardo, 2000; Malecki & Elliott, 2002; Wentzel, 1993). A shift of attention may be necessary from children's maladaptive behaviors that interfere with positive development and academic success to the competencies children may also possess that counteract the negative effects of their problematic behaviors. The early elementary years are a critical time during which children need to acquire a wide range of skills to adapt to the social and learning environments at school (Rimm-Kaufman, Curby, Grimm, Brock, & Nathanson, 2009). As such, understanding the role of behavioral competence in children's learning during this period may inform the direction of intervention efforts for children with externalizing problems.

Externalizing Problems and Academic Functioning

Children's externalizing problems have been the focus of much theory and research, in part because of the effect of such problems on children's long-term functioning. Although not all young children who demonstrate externalizing problems continue to do so as they age (Bub et al., 2007; Campbell, 2002), the within-child stability of such problems is noteworthy. In an examination of the trajectories of children's problematic behaviors between 24 months and first grade, children's externalizing problems, as compared to their internalizing problems, declined at a slower rate and were more stable over time (Bub et al., 2007). This stability appears to be present throughout adolescence, such that adolescents who display severe antisocial behaviors are often identified for behavioral concerns as early as the preschool years (Moffitt, 1990).

Given their stability, children's externalizing problems hold the potential to exert a sustained effect on children's academic functioning. Indeed, externalizing problems and underachievement often co-occur, such that children and adolescents with severe behavior problems also exhibit significant deficits in academic performance (Lane, Barton-Arwood, Nelson, & Wehby, 2008; Nelson, Benner, Lane, & Smith, 2004; Reid, Gonzalez, Nordness, Trout, & Epstein, 2004). Furthermore, the negative effects of behavior problems on children's academic achievement appear to persist from early childhood through adolescence (Bub et al., 2007; Henricsson & Rydell, 2006; Masten et al., 2005; Reinke, Herman, Petras, & Ialongo, 2008).

Behavioral Competence and Academic Functioning

Evidence suggests that behavioral competencies, albeit related, are distinct from behavior problems (Fantuzzo et al., 2007; Reynolds & Kamphaus, 2004). Although multiple

behaviors may be classified as behaviorally competent, one core attribute of competent behaviors is that they predict important social and academic outcomes for children (Fantuzzo et al., 2007; Gresham, 1983). A wide range of behaviors have been identified to facilitate children's learning and academic achievement, including prosocial skills, interpersonal skills, self-regulation, social responsibility, study skills, and cooperation (e.g., Caprara et al., 2000; DiPerna et al., 2002; Howse, Lange, Farran, & Boyles, 2003; McClelland et al., 2006; Wentzel, 1991). In line with prior research, we conceptualize behavioral competence as a construct that reflects multiple aspects of skillful behaviors that collectively lead children to succeed at school (McWayne, Fantuzzo, & McDermott, 2004).

Children's behavioral competence appears to promote children's academic functioning in several ways. First, behavioral competence, such as cooperation, communication skills, helping, and giving compliments (DiPerna, 2006; Gresham, 1986) enhances children's positive interactions with others. Given that the classroom learning environment is inherently social, it is not surprising that positive social interactions are related to enhanced academic functioning. Engagement in pleasant social interactions, in turn, contributes to constructive learning experiences and higher achievement (Wentzel, 1991). Interpersonally competent children are not only more attentive, persistent toward tasks, and eager to learn (DiPerna, Lei, & Reid, 2007); they also tend to be high achieving across the elementary years (DiPerna, Volpe, & Elliott, 2005). Second, behaviorally competent children possess skills that aid them directly in their schoolwork. These could include effective learning strategies that help students attain, organize, synthesize, and apply information effectively (Gettinger & Seibert, 2002; Weinstein & MacDonald, 1986). They may also include behavioral attitudes toward learning, such as independence, self-regulation, organization, flexibility, and persistence (Cooper & Farran, 1988; DiPerna et al., 2007; McClelland, Morrison, & Holmes, 2000). Both children's effective learning strategies and constructive attitudes are related to children's enhanced grades and achievement scores (e.g., Cooper, Robinson, & Patall, 2006; Cross & Paris, 1988; McClelland et al., 2000). In sum, behavioral competence consistently contributes to children's enhanced academic functioning.

Behavioral Competence as a Buffer Against Risk

Behavioral competence foreshadows children's heightened academic functioning over time and these effects may be particularly pronounced for children experiencing risk. Indeed, evidence suggests that behavioral competence serves as a protective factor against economic disadvantages children may face. For example, Elias and Haynes (2008) demonstrated that, among ethnic minority students living in low-income, urban communities, children's initial levels of and improvement in behavioral competence over the course of a year were related to heightened school grades. Also, in a longitudinal study involving children at risk for academic underachievement because of poverty, teachers' cumulative reports of children's social and emotional competence in elementary school predicted reading and math achievement at 16 years of age above and beyond their prior levels of achievement (Teo, Carlson, Mathieu, & Egeland, 1996). Similarly, behavioral competence has been shown to play a protective role against internalizing problems. That is, among children with internalizing problems, those who showed higher levels of interpersonal competence also demonstrated higher levels of achievement and were better accepted by their peers than were those who showed lower levels of interpersonal competence (Henricsson & Rydell, 2006). However, whether children's behavioral competence serves as a resource for enhanced academic achievement for children with externalizing problems has been unexplored.

Current Study

The purpose of this research was to examine the relation between behavioral compe-

tence and academic functioning among children with externalizing problems in the early elementary years. Two questions guided this research. First, to what extent is behavioral competence uniquely related to children's academic functioning among children with externalizing problems? We hypothesized that behavioral competence would be negatively related to academic problems and positively related to reading and math achievement after taking into account children's background factors and behavior problems. Second, how does behavioral competence buffer children's achievement against the effects of risk, as manifest in parents' limited educational attainment, among children with externalizing problems? Among socioeconomic status indicators, parental education has been found to be the strongest predictor of children's cognitive and academic development (Mercy & Steelman, 1982; Suizzo & Stapleton, 2007). We hypothesized that children's behavioral competence would moderate the relation between parents' educational attainment and children's achievement such that the adverse effect of parents' limited education on children's achievement would be attenuated when children displayed heightened levels of behavioral competence.

Method

Participants

A total of 207 kindergarten through third-grade children (155 males; 52 females) and their parents and teachers participated in this study. They were from 82 classrooms in 21 public and parochial schools in a moderately sized midwestern city and surrounding communities. According to parents' reports, participating children were 75% European American, 9% African American, and 16% other racial and ethnic backgrounds (i.e., Latino, American Indian, Asian, Native Hawaiian, Middle Eastern, or biracial). According to parent and teacher reports, 90 of the participating children (44%) had a clinical diagnosis and/or received special education services. Specifically, parents reported attention deficit hyperactivity disorder as the most common clinical diagnosis ($n = 33$), and teachers reported speech/language delay ($n = 24$) and behavior disorder ($n = 23$) as the most common special education eligibility categories. Forty-nine percent of participating children were eligible for free or reduced-price lunch. Four percent of families reported not speaking English as their primary language at home, and 24% had only one adult residing in the home.

Of the 207 participating parents, 90% were female. The average age for participating parents was 34.73 ($SD = 7.83$). Eighty-eight percent of parents were European American, 4% were African American, 4% were Latino, and 4% reported other ethnicities. Fifty percent of parents had completed high school as their highest level of educational attainment. Thirty-seven percent had a college degree and 8% had an advanced graduate degree. Five percent did not have a high school diploma or equivalent.

Children's general education teachers ($N = 82$) also participated. The majority were female (97%) and self-reported as European American (100%). Approximately 75% of teachers reported that they were in their current position for 10 years or less, with a small percentage of teachers (5%) being in their positions for 30 years or more.

Measures

Systematic Screening for Behavior Disorders (SSBD; Walker & Severson, 1990). The SSBD is a multistage screening tool to identify children at risk for behavioral disorders. In the first stage, teachers listed 10 students in their class who displayed externalizing problems (e.g., aggression, arguing, noncompliance, hyperactivity) and rank ordered them according to the severity of the problems. For the top five ranked children per classroom, teachers rated the frequency (1 = *never,* 5 = *frequently*) with which each child displayed adaptive and maladaptive behaviors. Total scores were calculated for the 12-item adaptive and 11-item maladaptive behavior scales. According to previous research, the test–retest reliability of the adaptive and mal-

adaptive behavior scales was $r = .90$ and .87, respectively; regarding validity evidence, the scales demonstrated as high as 85% classification accuracy of different groups of children (i.e., externalizers, internalizers, and comparison) selected by their teachers in the initial screening stage (Walker, Severson, Todis, & Block-Pedego, 1990).

In addition, teachers rated behaviors of the top five ranked children on another 3-item screening tool that assessed the frequency (1 = *very infrequent*; 9 = *very frequent*) and severity (1 = *very mild*; 9 = *very severe*) of behavior problems as well as the need for additional intervention (1 = *no need*; 5 = *significant need*; Glover, Sheridan, Garbacz, & Witte, 2005). A composite score of the three additional screening items was moderately correlated with the subscales of the SSBD in expected directions, demonstrating evidence of validity of the additional items: it was positively correlated with SSBD maladaptive skills ($r = .41$, $p < .01$) and negatively correlated with SSBD adaptive skills ($r = -.56$, $p < .01$).

Behavioral Assessment System for Children—Second Edition (BASC-2; Reynolds & Kamphaus, 2004). The BASC-2 is designed to assess both maladaptive and adaptive behaviors for children ages 2–25. In this study, the majority of ratings were made on the child-level form (ages 6–11), with the preschool-level form (ages 2–5) being used for a small number of younger kindergarteners. The composite scores of interest in this study were Externalizing Problems, School Problems, and Adaptive Skills ($M = 50$, $SD = 10$). The *Externalizing Problems* composite consists of hyperactivity, aggression, and conduct problems subscales. The *School Problems* composite consists of attention problems and learning problems subscales. The School Problems composite is available for children ages 6 and beyond; thus, the analyses that involved this composite did not include 5-year-old children ($n = 39$). The *Adaptive Skills* composite includes the subscales of adaptability, social skills, study skills, leadership, and functional communication. The internal consistency (α) of the three composites and their subscale scores ranged from the high .80s to the high .90s (Reynolds & Kamphaus, 2004). Concurrent and discriminant validity evidence was demonstrated in that the composite and subscale scores were correlated with other established behavior measures in expected directions. For example, correlations between Externalizing Problems, School Problems, and Adaptive Skills on the BASC-2 and Externalizing Problems on the Achenbach System of Empirically Based Assessment (Achenbach & Rescorla, 2001) were $r = .75$, .40, and $-.49$, respectively, among children ages 6–18 (Reynolds & Kamphaus, 2004). Finally, factor analysis results supported the conceptual distinction between the Adaptive Skills composite and other clinical composites (i.e., Externalizing Problems, Internalizing Problems, School Problems, Behavioral Symptoms Index) of the BASC-2. Specifically, subscale factor loadings were higher with their corresponding composite than with other composites, and factor correlations were higher among clinical composites than those between clinical composites and Adaptive Skills (Reynolds & Kamphaus, 2004).

Woodcock-Johnson III Test of Achievement (WJ-III; Woodcock, McGrew, & Mather, 2001, 2007). The WJ-III was chosen to assess children's academic achievement in reading and math for several reasons. First, the WJ-III is a norm-referenced test (ages 2–90), making it possible to determine a child's current level of academic functioning in comparison to that of his or her peers from a large national sample. Second, the WJ-III demonstrates sound psychometric properties such that it has been widely used in educational research and practice. The standard battery includes 12 tests that measure reading, math, written language, and oral language. In this study, four reading and math subtests were examined: letter-word identification, passage comprehension, calculation, and math fluency. Two cluster scores were created based on those four subtests and used for analysis: *brief reading* and *math cal-*

culation skills. The WJ-III normative update (Woodcock, McGrew, Schrank, & Mather, 2001, 2007) was used to derive individuals' standard scores ($M = 100$, $SD = 15$) based on the grade-based norms. The technical manual (McGrew, Schrank, & Woodcock, 2007) reports cluster reliabilities (r_{cc}) of .97–.98 for the brief reading cluster and those of .87–.96 for the math calculation skills cluster among children ages 5–8. For the WJ-III normative update, intellectual ability tests and achievement tests were conormed: According to the technical manual, the concurrent validity coefficients between general intellectual ability and brief reading cluster and math calculation skills cluster are $r = .64$ and .50, respectively, among children ages 6–8 (McGrew et al., 2007).

Procedures

Participating families and teachers were recruited for a randomized trial, funded by the Institute of Education Sciences, assessing the efficacy of Conjoint Behavioral Consultation (Sheridan & Kratochwill, 2008) to address children's behavioral concerns. The project involved participants recruited over a 4-year period, and the baseline data were used to examine the research questions in the current study. Participating children were selected based on teacher ratings of the SSBD, severity, frequency, and the need for additional services. To be included in the study, children needed to meet at least one of the following criteria: (a) scores of greater than 33 out of a possible 55 on the maladaptive behavior or less than 31 out of a possible 60 on the adaptive behavior scales of the SSBD; and/or (b) behavior problems at a moderate to extremely severe level, moderate to extremely frequent level, or in moderate to significant need for additional services. A total of 383 children were nominated by teachers for participation. Of those 383 students, 284 met the screening criteria and were invited to participate. A total of 207 parents provided informed consent for their own and their child's participation, along with their teachers ($N = 82$). Among children who met screening criteria, there were no statistical differences in the screening measures between those who did and did not give consent to participate in the study: $t(249) = 0.45$, $p = .65$ for the SSBD adaptive skills; $t(180) = -0.46$, $p = .65$ for the SSBD maladaptive skills; $t(260) = -0.31$, $p = .76$ for frequency; $t(260) = -1.23$, $p = .22$ for severity; and $t(260) = -0.91$, $p = .36$ for need for additional intervention.

For those who gave consent, we used parent and teacher questionnaires to gather information on children and themselves. Trained graduate students distributed and collected questionnaires, and they individually administered the WJ-III achievement tests to participating children in their schools. Regarding the parent questionnaires, we mailed, sent home with children, and delivered these in person depending on parents' preferences. Parents also chose one of those options when they returned the questionnaires. Because we enrolled participants throughout the school year, the time of year varied when measures were administrated. Both teacher and parent questionnaire packets included detailed written instructions regarding the overall procedure and separate instructions were provided for each measure. Teachers and parents were asked to complete the forms at their own convenience, and the majority returned the forms within two weeks of distribution. Both verbal and written reminders were sent to teachers and parents to encourage them to return the forms in a timely manner. For a small number of parents whose primary language was Spanish (4%), all the study-related materials were translated into Spanish and were read to them by interpreters recommended by the families' schools. Measures were also read aloud to parents who were not proficient in reading English.

Outcome, Predictor, and Control Variables

Outcome variables were children's academic functioning in the areas of academic problems as measured by School Problems (ages 6 and above) on the BASC-2 and by Brief Reading and Math Calculation on the

WJ-III. The School Problems composite was significantly and negatively related to Brief Reading ($r = -.47$, $p < .01$) and Math Calculation ($r = -.27$, $p < .01$) in the current sample. The magnitude of the correlations was considered small to moderate, suggesting the validity of School Problems as a measure of academic functioning to some extent. The predictor variable of interest was children's behavioral competence as measured by Adaptive Skills on the BASC-2. Child-level control variables were gender, ethnicity, disability status, and externalizing problems. Ethnicity was treated as a dichotomous variable in the analysis wherein children other than European American were considered as minority. Children's externalizing problems were controlled for, given that they were used to determine children's participation and are known to negatively contribute to children's academic functioning (Hinshaw, 1992). Parent's level of education also served as a control variable, dichotomized as those who had a high school diploma or less as their highest degree (approximately half of the sample) and those who completed college and/or beyond (for a similar conceptualization of parental education, see Crosnoe, Leventhal, Wirth, Pierce, & Pianta, 2010).

Results

Missing Data

The percentage of missing data in the current sample ranged from 2% (WJ-III Brief Reading) to 14% (BASC-2 Externalizing Problems and Adaptive Skills). The patterns of missing data on teacher report measures and children's achievement tests were examined by creating dummy variables for missing and nonmissing data followed by statistical procedures to examine the association between missingness and some of the demographic variables (Schlomer, Bauman, & Card, 2010). Results indicated that more missing data were observed in Externalizing Problems, Adaptive Skills, and Math Calculation among younger children. Also, for Math Calculation, more missing data were found among boys and European American children than among girls and minority children. Other examined associations were nonsignificant. Other than the associations between missingness and some of the observed variables (e.g., age, gender, ethnicity), we did not suspect that missingness in a variable is related to high or low scores on that variable (e.g., teachers not completing items on externalizing problems for a child who may be high or low on that characteristic). In addition, no statistical significance was found in the screening data between those who had missing data in the BASC-2 and those who did not. These patterns led us to assume that the data were missing at random.

Subsequently, we used the multiple imputation (MI) procedure (Allison, 2009) to handle missing data (for a discussion of the advantages of MI over other conventional approaches such as listwise deletion or mean substitution as well as a description of the procedure, see Allison, 2009; Schlomer et al., 2010). Briefly speaking, we created five imputed data sets and analyses were conducted on each. Parameter estimates and their standard errors were pooled from each of the five analyses. It should be noted that missing data for School Problems were imputed for children ages 6 and above only.

Descriptive Analysis

Descriptive statistics and correlations of the central variables are provided in Table 1. Consistent with teachers' concerns for participating children, children's Externalizing Problems were more than one and a half standard deviations above the mean and School Problems were one standard deviation above the mean. In contrast, children's Adaptive Skills were approximately one standard deviation below the mean. Taken together, these scores indicate that participating children's social and behavioral functioning was clearly at risk. In contrast, reading and math achievement scores were within the average range. Finally, assumptions for multiple regression analyses were fulfilled based on the inspection of residuals for normality, linearity, and homogeneity of variance.

Table 1
Descriptive Statistics for and Correlations Between Central Variables

	Gender[a]	Ethnicity[b]	Disability[c]	Parent education[d]	Externalizing problems[e]	Adaptive skills[e]	Academic problems[e]	Reading achievement[f]	Math achievement[f]
M or %	75%[a]	75%[b]	44%	45%[c]	67.87	41.36	60.13	100.86	102.77
SD	–	–	–	–	11.65	6.61	8.15	14.03	14.96
Range	0, 1	0, 1	0, 1	0, 1	42–120	23–62	40–81	53–140	50–144
Externalizing problems[e]	.04	−.12	.09	−.14	–				
Adaptive skills[e]	−.15	−.01	−.19*	.20*	−.40*	–			
Academic problems[e]	.25*	.16	.17*	−.05	.32*	−.53*	–		
Reading achievement[f]	−.12	−.01	−.12	.19*	.00	.24*	−.47*	–	
Math achievement[f]	.03	.09	−.32*	.20*	−.01	.23*	−.27*	.40*	–

Note. [a] Male. [b] European American. [c] Diagnosed disability and/or special education placement. [d] College degree or greater. [e] Behavioral Assessment System for Children–Second Edition composite. [f] Woodcock-Johnson III Test of Achievement composite.
* $p < .05$.

To What Extent Is Behavioral Competence Related to Children's Academic Functioning for Children with Externalizing Problems?

The first research question concerned whether behavioral competence as measured by adaptive skills is uniquely related to children's academic functioning (i.e., academic problems, reading, and math achievement) after controlling for various child background characteristics. A series of hierarchical multiple regression analyses were conducted, using the MI procedure, for each dimension of children's academic functioning. In the first step, child demographic variables (i.e., gender, ethnicity, and disability status) were entered. In the second step, parental education was entered followed by children's externalizing problems in the third step. Finally, adaptive skills were entered in the last step. The adjusted R^2 values were determined based on the average across the five imputed data sets. The results are described in the following for each outcome, and the unstandardized coefficients and their standard errors are presented in Table 2.

Teacher-reported academic problems. Among the child demographic variables entered in the first step, child gender and ethnicity were significantly related to academic problems (see Table 2). Specifically, boys and European American children displayed higher levels of academic problems than did girls and other minority children. In Step 3, child externalizing problems were related to academic problems after controlling for child demographic characteristics and parent education. Finally, adaptive skills were related to academic problems after all other variables were taken into account. That is, children with higher levels of adaptive skills displayed lower levels of academic problems. None of the other predictor variables was significant in the final step when adaptive skills were entered. Overall, 29% of the total variance in academic problems was explained in the final model.

Reading achievement. In the first step, child disability status was significantly related to reading achievement. Children with a disability scored lower than did those without (see Table 2). In the second step, parent education was related to child reading achievement after controlling for other demographic characteristics. That is, children whose parents received a college degree or beyond scored higher than those whose parents obtained less than a college degree. In the third step, externalizing problems were not related to reading achievement after the variables in the previous steps were taken into account. In the final step, adaptive skills were positively related to reading achievement after other factors were controlled for. In the final step, the effect of parent education on reading achievement remained significant, and surprisingly, the association between externalizing problems and reading achievement emerged as positive and significant. Overall, the final model explained 9% of the total variance in reading achievement.

Math achievement. Among child demographic variables examined in the first step, children with an identified disability scored lower on math achievement than those without (see Table 2). In the second step, parent education emerged as a significant predictor of math achievement, favoring students whose parents had a higher level of education. In the third step, externalizing problems were again not related to math achievement. In the final step, adaptive skills were positively related to math achievement after the other factors were taken into account; only the effect of child disability status remained significant. Overall, 13% of the variance in math achievement was explained by the final model.

How Does Behavioral Competence Buffer Against the Risk of Parents' Limited Education on Children's Achievement for Children with Externalizing Problems?

A second question of interest was whether children's behavioral competence serves as a buffer against the negative effect of

Table 2
Hierarchical Multiple Regression Analyses Predicting Child Academic Functioning from Behavioral Competence, Controlling for Background Characteristics

	Academic Problems[e]				Reading Achievement[f]				Math Achievement[f]			
	Step 1 *B*	Step 2 *B*	Step 3 *B*	Step 4 *B*	Step 1 *B*	Step 2 *B*	Step 3 *B*	Step 4 *B*	Step 1 *B*	Step 2 *B*	Step 3 *B*	Step 4 *B*
Gender[a]	3.21* (1.41)	3.38* (1.41)	2.78* (1.37)	2.31 (1.24)	−1.87 (2.27)	−2.53 (2.23)	−2.92 (2.25)	−2.55 (2.22)	1.38 (2.35)	0.81 (2.32)	0.61 (2.33)	0.98 (2.31)
Ethnicity[b]	2.84* (1.37)	2.91* (1.37)	3.10* (1.37)	2.34 (1.25)	−0.58 (2.32)	−0.99 (2.28)	−0.69 (2.32)	−0.11 (2.37)	3.61 (2.42)	3.26 (2.40)	3.43 (2.47)	4.02 (2.49)
Disability status[c]	2.13 (1.28)	1.97 (1.30)	1.90 (1.23)	1.27 (1.12)	−4.21* (1.98)	−3.51 (1.96)	−3.58 (1.96)	−2.78 (1.96)	−8.67* (2.12)	−8.07* (2.11)	−8.12* (2.11)	−7.31* (2.10)
Parent education[d]		−1.29 (1.30)	−0.68 (1.31)	0.43 (1.18)		5.97* (1.93)	6.36* (1.98)	5.42* (1.99)		5.12* (2.10)	5.35* (2.19)	4.38 (2.22)
Externalizing problems[e]			0.16* (0.05)	0.06 (0.05)			0.12 (0.09)	0.19* (0.09)			0.06 (0.09)	0.13 (0.09)
Adaptive skills[e]				−0.56* (0.10)				0.41* (0.16)				0.42* (0.17)
Adjusted R-square[g]	.07	.07	.13	.29	.01	.05	.06	.09	.08	.11	.11	.13

Note. Standard errors are in parentheses.
[a] Male. [b] European American. [c] Diagnosed disability and/or special education placement. [d] College degree or greater. [e] Behavioral Assessment System for Children–Second Edition composite. Five-year-old children were not included for Academic Problems. [f] Woodcock-Johnson III Test of Achievement composite. [g] Average across the five imputations.
* $p < .05$.

parents' limited education on children's academic functioning. To recap, lower levels of parental education had a negative effect on children's reading and math achievement. Control variables were determined based on this result as well as on conceptual grounds. Specifically, child disability status and externalizing problems served as control variables. To address our second question, hierarchical multiple regression analyses via the MI procedure were again used for reading and math. In the first step, child disability status, parent education, and child externalizing problems were entered. In the second step, child adaptive skills were entered. Finally, the interaction between parent education and adaptive skills was entered, which was the primary effect of interest in this set of analyses. In testing an interaction effect, the adaptive skills variable was centered (Aiken & West, 1991) at 40 (at risk), which is the approximate average of the sample. The unstandardized coefficients and their standard errors are presented in Table 3.

The results indicated that the interaction between parent education and adaptive skills was significant for reading achievement but not for math achievement (see Table 3). The nature of the interaction for reading is depicted in Figure 1. When parents' education was high (i.e., college degree or beyond), children's reading achievement did not differ as a function of their adaptive skills. In contrast, among children whose parents' education was limited (i.e., less than a college degree), reading achievement was approximately 8 points higher if they had at least average levels of adaptive skills (T score of 50) than if they had at-risk levels of adaptive skills (T score of 40). This is equivalent to an approximately one-point increase in reading achievement per unit of adaptive skills. The final model explained 11% of the variance in reading achievement.

Discussion

There is emerging evidence that behavioral competence may have a stronger effect than externalizing problems on the academic functioning of children in general (Caprara et al., 2000; Malecki & Elliott, 2002; Wentzel, 1993). However, positive aspects of behavior among children with externalizing problems have received little research attention perhaps partly because of a focus on children's problematic behaviors as opposed to their competencies. This study is unique in that it examined the contribution of behavioral competence to children's academic functioning among a sample of children who display externalizing problems. The findings support and strengthen the evidence of the important role of behavioral competence in children's academic functioning.

When examined among children with elevated externalizing problems, behavioral competence was a significant predictor of all three indices of children's academic functioning (i.e., teacher-reported academic problems, reading, and math achievement) over and above a variety of background characteristics, including their level of externalizing problems. In contrast, after behavioral competence was taken into account, externalizing problems were no longer related to either academic problems or math achievement. Unexpectedly, however, externalizing problems were positively associated with reading achievement when adaptive skills were also entered as a predictor. The variance explained by the examined models was greatest for academic problems; however, this should be interpreted with caution because some of the variance could be attributed to the same source of raters (i.e., teachers) used for measuring adaptive skills and academic problems.

In addition, children's behavioral competence buffered the effects of limited parental education on children's reading achievement. Among children of parents with less than a college degree, children's reading achievement was higher when displaying average levels of behavioral competence as opposed to when their behavioral competence was considered at risk. This suggests that children's behavioral competence may serve as a resource for children from families with relatively limited educational backgrounds. Taken together, these findings highlight the significance of children's behavioral compe-

Table 3
Interaction Between Parent Education and Child Behavioral Competence in Predicting Child Reading Achievement

	Reading Achievement[d]			Math Achievement[d]		
Predictor variables	Step 1 *B*	Step 2 *B*	Step 3 *B*	Step 1 *B*	Step 2 *B*	Step 3 *B*
Disability status[a]	−3.95* (1.93)	−3.10 (1.93)	−2.97 (1.90)	−8.18* (2.08)	−7.42* (2.08)	−7.37* (2.08)
Parent education[b]	6.02* (1.97)	5.13* (2.00)	6.16* (2.00)	5.57* (2.20)	4.76* (2.23)	5.07* (2.26)
Externalizing problems[c]	0.11 (0.09)	0.18* (0.09)	0.20* (0.09)	0.05 (0.09)	0.12 (0.09)	0.12 (0.09)
Adaptive skills[c]		0.42* (0.16)	0.79* (0.24)		0.38* (0.17)	0.49* (0.24)
Parent education x Adaptive skills			−0.67* (0.32)			−0.20 (0.33)
Adjusted R-square[e]	.06	.09	.11	.11	.13	.12

Note. Standard errors are in parentheses.
[a] Diagnosed disability and/or special education placement. [b] College degree or greater. [c] Behavioral Assessment System for Children–Second Edition composite. [d] Woodcock-Johnson III Test of Achievement composite. [e] Average across the five imputations.
* $p < .05$.

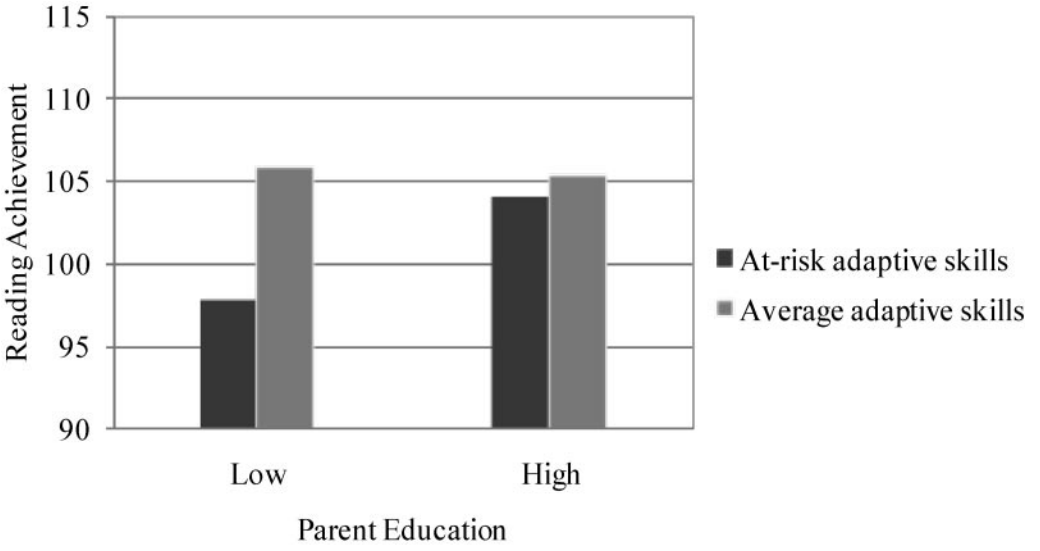

Figure 1. Children's reading achievement as a function of parents' education and children's adaptive skills. Children's at-risk adaptive skills are equivalent to a T score of 40 and average adaptive skills are equivalent to a T score of 50. Parents' *low* education was defined as having less than a college degree; *high* education was defined as having a college degree or greater. A child externalizing problem score of 68 (sample mean) and the pooled disability status were used to determine the intercept.

tencies, even in the face of children's behavioral problems. Indeed, these findings are consistent with recent directions in positive psychology and strength-based perspectives (Nickerson & Fishman, 2009; Sheridan & Burt, 2009; Sheridan, Warnes, Cowan, Schemm, & Clarke, 2004), emphasizing the need to focus more attention on the competencies children possess than their maladaptive behaviors.

Despite the meaningful role that children's behavioral competence appears to play in the academic functioning of children with behavioral problems, the pathways by which it does so remain unclear. Research suggests that interpersonal pathways might account for this effect such that behaviorally competent children have more positive interactions with parents, peers, and teachers that may aide in their academic development (Wentzel, 1991). Indeed, externalizing problems present challenges for teachers and parents alike. Teachers spend more time in negative interactions when working with children with behavioral problems, depriving children of instructional time (Jack, Shores, Denny, & Gunter, 1996). However, when children possess behavioral competence, the quality of the interactions between teachers and children may be enhanced, which also likely allows teachers to focus on instruction to a greater extent than behavior management. A second possible mechanism is through children's motivation. That is, when children are behaviorally competent, they not only maintain interpersonal relationships but also might feel more control over and confidence about their behaviors. Increased self-confidence in interpersonal relationships and behaviors might enhance children's motivation for higher achievement (Graziano, Reavis, Keane, & Calkins, 2007). Future research is needed to examine the processes by which children's behavioral competence exerts its effect.

Behavioral competence examined in this study included various behavioral characteristics that have been shown to be critical in children's effective functioning at school (DiPerna et al., 2002; Howse et al., 2003; McClelland et al., 2006). However, the definition of behavioral or social competence in the literature is broad, and there is little consensus regarding what constitutes behavioral competence. The heterogeneity in the definition of behavioral competence can be problematic in terms of theory development, measurement, and intervention (Dirks, Treat, & Weersing, 2007). It is not yet clear whether there are a set of distinct behaviors that are most important for children's academic functioning or whether there are higher order constructs that encompass those discrete behaviors.

Although not part of the central hypotheses, some related findings are worth noting. First, in contrast to previous findings that children with externalizing problems are at risk for underachievement (Bub et al., 2007; Hinshaw, 1992), the overall reading and math achievement scores of participating children, characterized by elevated externalizing problems, were in the average range. This unexpected average achievement of the current sample might be attributed to a potential selection threat. Alternatively, given that participating children were in the early elementary years in which academic challenges are not considerable, the negative effect of externalizing problems on academic achievement may not yet be fully manifested. It is possible, however, that the effect of behavioral problems on academic achievement is compounded over time and creates increasingly deleterious effects if not addressed, pointing to the importance of early intervention for children with behavior problems. Second, the adverse effect of disability status on children's academic achievement emerged consistently for math. This appears compatible with previous studies in which differences were greater in math than in reading between children with emotional/behavioral disturbance and those without (Nelson et al., 2004; Reid et al., 2004).

Limitations

Whereas this study highlights the importance of taking into account children's behavioral competencies among children with behavioral problems, several limitations exist. First, the concurrent data employed in this study are cross-sectional and do not offer a window into the direction of effects. It could be the case that children's academic functioning engenders heightened behavioral competence among children with behavioral problems. However, prior research indicates that behavioral competence foreshadows children's enhanced academic functioning over and above children's earlier achievement (Elias & Haynes, 2008), suggesting that behavioral competence may be a precursor to children's later academic functioning. Additional research is needed to disentangle the manner in which behavioral competence and academic functioning are related across time for children with behavioral problems. Such research holds the potential to inform how intervention efforts for children with behavioral problems are structured in the future.

Despite the demonstrated sound psychometric properties of the WJ-III achievement tests, they also appear to pose some limitations when used for younger elementary children, in particular. Specifically, the WJ-III achievement battery has been documented as being relatively insensitive to discriminating low-performing students in the lower grades (Fuchs et al., 2005). This potential floor effect (i.e., not enough low-difficulty items) may have contributed to restricted variation of the WJ-III scores and the results should be interpreted in this light. Alternative assessment tools such as curriculum-based measurement might better discern academic abilities among low-achieving children in the lower grades.

Participating children in the study were disproportionately male. Consistent with previous research (Reid et al., 2004), more male than female children were identified by teachers as displaying externalizing problems. Also in line with prior research (Algozzine, Christian, Marr, McClanahan, & White, 2008; Lynch, 2002), there were gender differences in

children's academic problems such that boys displayed more academic problems than did girls. However, these gender differences became nonsignificant once children's behavioral competence was taken into account, suggesting that children's behavioral competence exerts an effect over and above these gender differences. It will be informative in future research to examine the role of behavioral competence among a sample with more female participants.

This sample was also relatively ethnically homogenous. Approximately 75% of children and 100% of teachers were European American. Given evidence of achievement gaps between minority and majority students (Chatterji, 2006), it will be important to determine the competing effects of externalizing problems and behavioral competence on children's academic functioning for minority students. This could prove important in determining a potential target for interventions aimed at improving achievement among children of diverse ethnic groups.

Potential Implications and Future Directions

Given that this study was based on a cross-sectional research design, implications of these findings for intervention and assessment should be considered preliminary. When designing an intervention to promote academic functioning for children with behavioral concerns, it may prove important to consider children's behavioral strengths in addition to their problems. Social skills training programs have often failed to demonstrate positive effects on children's academic and behavior skills (e.g., Royer, Desbiens, Bitaudeau, Maltais, & Gagnon, 1999). It could be from the fact that social skills training programs often focus on maladaptive social skills rather than on competencies (Rutherford, DuPaul, & Jitendra, 2008). Also, evidence appears mixed regarding whether improved social skills leads to enhanced academic functioning or whether this process works in the opposite direction (see Rutherford et al., 2008; Wentzel, 1993). Research that involves experimental or longitudinal designs will be useful to further establish the direction of effects, which, in turn, will inform future intervention research.

In a similar vein, whereas traditional assessment protocols have focused on identifying children's problems and deficits, the findings appear to support the usefulness of strength-based assessment when working with children with behavior problems. Although empirical research is relatively limited on strength-based practice, Cox (2006) demonstrated that the use of strength-based protocols versus deficit-based protocols identified significantly higher positive functioning for youth when the treating therapists were highly oriented toward strength-based practice. Also, it appears that identifying areas of a child's competencies potentially increases intervention effects. For example, recognition of a child's competencies may be empowering for both children and parents such that children may be more motivated to participate and parents are more likely to cooperate in the intervention efforts (Cox, 2006). Future research should evaluate the added value of strength-based practice in assessment and intervention in addition to traditional models of problem-focused approaches. For instance, a randomized study design might be used to compare a problem-focused approach and an approach that addresses both problems and strengths. The results would provide a clearer view of the usefulness of strength-based practices.

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