Research on the Academic Status of Children with Emotional and Behavioral Disorders:

A Review of the Literature From 1961 to 2000

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This review conducted a comprehensive examination of the current state of the literature on the academic status of students with emotional and behavioral disorders (EBD). The authors examined the literature to assess (a) student characteristics, (b) placement settings, (c) academic subject areas, and (d) measures used to assess academic achievement. Second, when possible, the functioning level of students was examined. Third, trends in the research over the past 4 decades were assessed. Although several investigators have researched the academic status of these students, significant limitations exist in the research, including incomplete reporting of student information, inadequate research on specific academic skill sets, and limited numbers of studies assessing students served in general education settings. Implications of the findings are discussed.

FOR DECADES, RESEARCHERS HAVE demonstrated that a relationship exists between low academic achievement and problem behavior (Hinshaw, 1992). Although many researchers have tried to determine the causal relationship between the two, the precursor has yet to be determined. However, it has been shown that problem behavior has a negative influence on academic achievement and that underachievement produces consequences that foster inappropriate behavior (Bower, 1995). Regardless of whether problem behavior causes poor academic performance or vice versa, strong evidence suggests that academic underachievement and problem behavior engage in a reciprocal relationship that has a short- and long-term impact on students' future outcomes.

One of the criteria for identifying a student as having an emotional and behavioral disorder (EBD) is whether he or she has an inability to learn that cannot be explained by other factors (Individuals with Disabilities Education Act [IDEA], 1997). A deficit in basic reading, writing, and arithmetic skills, as well as skills related to other content subjects, significantly impairs an individual's ability to function educationally, socially, and emotionally across a variety of domains. Compared to other disability groups, students with EBD have lower graduation rates, lower reading and arithmetic scores, and are less likely to attend postsecondary school (Kauffman, 2001). As a result, students with EBD often experience a lifetime of problems in education and employment and are likely to become involved with the criminal justice system at an early age (U.S. Department of Health and Human Services, 1999).

Despite a long history of research demonstrating that students with EBD perform poorly in academics (Coutinho, 1986; Cullinan, Epstein, & Lloyd, 1991; Kauffman, Cullinan, & Epstein, 1987; Scruggs & Mastriopieri, 1986; Sullivan, 1927), several questions remain about the specific student characteristics, academic deficits, and assessment measures studied within this population. For example, previous research on students with EBD has primarily focused on young boys within a single geographic location (Epstein & Cullinan, 1983). However, several large epidemiological studies have estimated that approximately 25% of children with

EBD are girls (U.S. Department of Health and Human Services, 1999). Understanding the difference between genders is significant when we consider that girls typically record higher rates of internalizing behaviors, such as depression and anxiety disorder (Kataoka, Zima, & Dupre, 2001), which may cause them to perform academically in a manner different from that of their male counterparts. Similarly, the research on students without disabilities indicates that differences between racial/ethnic groups (Meece & Kurtz-Costes, 2001) and between individuals from different socioeconomic levels (Dixon-Floyd & Johnson, 1998) exist in many areas of academic achievement, including test scores, grades, and graduation rates. Given these disparities within the broad student population, one might expect that differences in academic achievement among students with EBD may exist by race/ethnicity and socioeconomic status (SES).

Little is also known about the academic status of students with EBD served across the continuum of academic placement settings. Historically, students with EBD have been served in restrictive, noninclusive settings. However, over the past decade, the trend toward the inclusion of students with EBD in general education classrooms has increased to the point that nearly 82% of students with EBD are now being served in regular school buildings, with almost 26% of those spending less than one fifth of their day outside the general education classroom setting (U.S. Department of Education, 2001). Given the increasing trend toward including students with EBD in less restrictive settings, the need to better understand their academic performance, in comparison to their peers without disabilities, is central to providing individualized instruction within the general education setting.

Further investigation of the assessment methods used to determine the academic status of children with EBD is also warranted. Traditionally, the dependent measures used to assess academic performance were designed to provide a global picture of a child's performance (e.g., *Wide Range Achievement Test* [Jastak & Jastak, 1978]). Although these measures provide valuable information about overall ability and allow for general comparisons to be made across students, they do not describe student performance within specific academic skill sets, such as reading comprehension or mathematical reasoning (Epstein, Kinder, & Bursuck, 1989). Without knowledge of the strengths and weaknesses that students possess within specific skill areas, it is difficult to have a clear understanding as to what interventions are needed to improve educational outcomes for students with EBD. More detailed measures for assessing student achievement, such as curriculum-based measurements (CBM; Epstein et al., 1989), could provide valid and reliable predictors of student achievement and also afford an ongoing measure of student learning in relation to the specific content received in class (Elliott & Fuchs, 1997; VanDerHeyden, Witt, Naquin, & Noell, 2001). However, since the introduction of CBM in the 1980s, little has been known about the use of these and other alternative assessment strategies used to measure the academic abilities of students with EBD.

Finally, although research dating back to the 1960s (e.g., Tamkin, 1960) has investigated the academic status of students with EBD, little is known about the trends in this research over the past four decades. During this time, several changes have occurred in the law governing special education and advancements made in the education and identification of students with disabilities (e.g., inclusion, diagnostic criteria), federal mandates and emphasis on early literacy and accountability have been legislated in the No Child Left Behind Act, and technology has had a significant impact on educational assessment and programming for children with disabilities. We would expect the characteristics, placement settings, dependent measures, and academic skill sets studied in the academic status literature to reflect these comprehensive changes.

To improve educational outcomes for students with EBD, it is essential to understand the specific characteristics and academic needs of the population. Specifically, we must identify the strengths and weaknesses in the literature and determine where additional research is needed. This review's purpose was to conduct a comprehensive examination of the current state of research on the academic status and functioning of students with EBD. Specifically, we examined the literature with three main goals in mind:

1. to determine the (a) student characteristics (e.g., gender, race, socioeconomic status [SES]), (b) placement settings (e.g., psychiatric facilities, resource rooms), (c) academic subject areas (e.g., reading, arithmetic), and (d) measures used to assess academic achievement (e.g., teacher ratings, standardized measures) described in the status studies on children with EBD;
2. to examine the functioning level of the students, when the results allowed for quantifiable descriptions of academic status; and
3. to assess trends in the research on the academic status of students with EBD over the past four decades.

Method

Initial Selection Criteria

A comprehensive review of all published articles on the academic status of children with EBD was conducted. For the purpose of this review, participants were recognized as having EBD if the sample was (a) identified as having EBD by the school system, according to IDEA's definition of EBD; (b) clinically diagnosed with a conduct disorder, based on the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*; American Psychiatric Association, 2000); or (c) identified as having EBD by teachers who used standardized behavior rating forms. Moreover, as a large percentage of students served in special education programs under the EBD disability status present coexisting conditions (Cullinan & Epstein, 2001; Kauffman, 2001), studies reporting the academic status of students diagnosed with EBD and other disabilities (e.g., attention-deficit/hyperactivity disorder, conduct disorder) were included in the review (e.g., Forness, Youpa, Hanna, Cantwell, & Swanson, 1992; Levy & Hobbes, 1989). Finally, studies were included if the sample of children and youth were from special programs for students with EBD, such as residential treatment facilities or psychiatric hospitals (e.g., Grizenko, Papineau, & Sayegh, 1993; Naylor, Staskowski, Kenney, & King, 1994). Our decision to use this broad selection criterion enabled us to assess the range of students served under the EBD category and allowed for a more comprehensive analysis of the literature assessing the academic status of children with EBD.

A five-step procedure was used to identify research published on the academic status of students with EBD. First, an electronic database search of the Electronic Resources Information Center (ERIC) and PsychINFO from 1974 to present was conducted. The following descriptors were used: *emotional disturbance, serious emotional disturbance, emotional and behavioral disorders, behavior disorder, conduct disorder, behavior and academic status, academic achievement, reading, math, arithmetic, written expression,* and *academics.* Second, a hand search was conducted on all issues of the *Journal of Emotional and Behavioral Disorders* and *Behavioral Disorders.* Third, an ancestral search on all identified articles was conducted to obtain related studies cited in the articles. Fourth, articles reported in previous literature reviews were identified and reviewed. Last, researchers who had conducted previous research on the academic status of students with EBD were contacted via e-mail and asked if they knew of any current studies in press or reviews related to this topic. This five-step procedure resulted in the identification of 205 articles that appeared, based on their titles and abstracts, to be related to the academic status of students with EBD.

Two graduate students screened the methods and results sections of all of the articles to verify that the articles included a sample of students with EBD and had reported academic achievement as a dependent variable. In the cases where a disagreement occurred ($n = 6$), a third reader independently assessed the article and a decision was made to include or exclude the article. This screening resulted in the exclusion of 104 articles that did not specifically relate to the academic status of students with EBD. Thus, 101 articles met the initial search criteria for inclusion in the review.

Final Selection Criteria

Three graduate students read all 101 articles obtained during the preliminary search. For articles to be included in the literature review, each of the following conditions must have been met:

1. Articles must have been published in a peer-reviewed journal between the years 1961 and 2000.
2. The dependent variable(s) must have included achievement in at least one specific academic content area.
3. The sample must have included children with EBD between 5 and 21 years of age.
4, The article could not have presented the results of an intervention study.

Of the 101 articles initially identified for review, 65 met the final criteria for inclusion in the study.

Several conditions accounted for the exclusion of the 36 articles. First, a number of articles ($n = 17$) failed to provide data regarding specific academic characteristics of the students. For instance, students' academic status may have been determined by assessing school competence on behavior checklists. Such information can be useful in gaining a broad perspective of a child's school functioning, but it does not address specific academic performance in content areas. Second, some studies ($n = 6$) only presented subtest scores from IQ measures such as the *Wechsler Intelligence Scales for Children–Revised* (WISC-R; Wechsler, 1974). Third, several studies ($n = 4$) used Individualized Education Program (IEP) goals and objectives as the dependent variable. In such instances, specific academic achievement scores in content areas were not presented. The final nine studies that did not meet inclusion criteria were rejected based on several criteria, including results from intervention studies, assessment of homework, follow-up studies, and studies in which the academic scores of students with EBD were combined with scores from students with other disabilities.

Coding Protocol

A coding protocol was developed to record the characteristics of each article so a quantitative description of the findings and attributes could be conducted. The coding protocol included the following information:

1. demographic characteristics of the sample(s) studied (e.g., gender, race, age),
2. how students were identified as EBD (i.e., school, *DSM,* or teacher ratings),
3. academic subject(s) investigated (e.g., reading recognition, written expression, arithmetic, oral expression),
4. dependent measures used to assess academic achievement (e.g., standardized instruments, teacher ratings),
5. placement in which academic status was assessed (e.g., university/psychiatric facility, general education classroom), and
6. the results and how they were presented (e.g., mean and standard deviation, grade level).

A manual operationally defining these areas was written to ensure that all readers coded the articles in a similar manner (see Note 1).

Review Procedures

Three graduate students independently reviewed each of the final 65 articles and recorded the appropriate information on the coding protocol. To ensure that the reviewers were coding the articles in a similar manner, interrater agreement was assessed on 23% ($n = 15$) of the articles. Two reviewers read and coded the same articles, then each item on the coding sheet was compared to determine if both reviewers agreed on the items. In instances in which the coders disagreed, a third reviewer read the article, and a discussion followed to determine how to most accurately code the item. Reliability was determined by dividing the number of agreements by the number of agreements plus disagreements and dividing by 100. Reliability ranged from 83% to 100%, with a mean of 96%.

The 65 coded articles resulted in a total of 70 data sets (see Note 2). Five of the articles included in the review (i.e., Grizenko et al., 1993; Mattison, Spitznagel, & Felix, 1998; Meadows, Neel, Scott, & Parker, 1994; Naylor et al., 1994; O'Brien et al., 1992) compared two groups of students identified with EBD, presenting their demographics and results separately. Thus, for the purpose of analysis, we left the data sets for these five studies separate, as they were presented in the original articles. To determine trends in the research over time, the 70 data sets were further separated into four decades (i.e., 1961–1970, 1971–1980, 1981–1990, 1991–2000).

Determining Academic Status

The academic status of students with EBD was quantified in one of two ways. First, when academic status data were presented on only students with EBD, the data sets ($n = 16$) were coded as the authors had described students' achievement. Information was recorded by either (a) percentage performing below, at, or above grade level or (b) years below, at, or above grade level. A total of 35 specific reports (e.g., reading ability, arithmetic scores) on students' academic status were extracted from these 16 data sets. Second, when the academic status data for students with EBD were compared to peers ($n = 23$) with (a) no disabilities (ND), (b) learning disabilities (LD), (c) mental retardation (MR), or (d) attention-deficit/hyperactivity disorder (ADHD), performance was recorded as less than, equal to, or greater than their peers. Within these 23 data sets, we discovered 84 specific reports of students' academic status.

A total of 39 (56%) data sets provided sufficient information to describe the academic status of students with EBD using the criteria established for this review. The remaining 31 data sets were not included in the assessment of academic status, as the descriptions of students' achievement did not allow for quantifiable evaluations. These data sets were excluded from the coding and evaluation of academic status for the following reasons:

1. Only narratives (i.e., performed poorly, severe academic deficits, retarded from age level) were provided describing students' academic status ($n = 4$).
2. Overall mean scores were provided without describing students' mean grade level or mean age level ($n = 25$).
3. The results involved correlations comparing students' achievement on two assessment measures ($n = 2$).

Results

Description of the Literature

The number of data sets presenting student characteristics, placement settings, academic subject areas, assessment measures, and comparisons with students without EBD is presented in Table 1. Percentages in the table were calculated from the total 70 data sets and generally exceeded 100% due to the method used for coding the articles. In all cases, with the exception of SES (coded as reported or not reported), it was possible for a data set to present more than one of the coded characteristics. For example, when IQ was coded, students' mean, range, and minimum IQs were reported in 54 (77%), 19 (27%), and 2 (3%) of the data sets, respectively. In sum, because several data sets included more than one subcategory describing IQ (e.g., mean and range), the total number ($n = 75$) of data sets reporting the three descriptives for IQ was greater than the total number of data sets included in the review ($n = 70$). Reporting each characteristic in comparison to the total number of data sets allowed for an indication of how frequently each primary characteristic and subcategory was reported in the research. In contrast, the percentages reported in the text narrative for subcategories were calculated from the total number of data sets reporting the primary characteristic (i.e., gender, age, IQ, SES, race/ethnicity, placement setting, academic subject area, assessment measures, and comparison of student achievement). For example, of the 57 (81%) data sets reporting students' IQ, 54 (95%), 19 (33%), and 2 (4%) reported students' mean, range, and minimum IQ, respectively. The percentages in text provide a description of the subcategories most frequently provided under each primary characteristic. Thus, the percentages in the table may differ from the percentages reported in the text.

Finally, data on student characteristics (e.g., gender, race/ethnicity) were only recorded from data sets if the information was specific to the students with EBD. For example, Lee, Elliott, and Barbour (1994) assessed the academic status of 58 children with EBD, 45 children without disabilities, and 51 children with LD. Descriptive information, including gender, race/ethnicity, age, and IQ, was presented separately for each of the three groups of students, allowing for specific descriptions of the characteristics of students with EBD. However, in some data sets ($n = 12$) only overall descriptive characteristics were presented for the students. For example, Lopez, Forness, MacMillan, Bocian, and Gresham (1996) presented only an overall description of the race/ethnicity for the 48 students with EBD and 102 students without disabilities assessed in their study. Because the characteristics were not presented separately, it was unclear if the race/ethnicity data were representative of both groups of students. In cases such as this, we chose to exclude the descriptive characteristics that provided only group descriptions so the actual student characteristics assessed in the EBD literature would not be misrepresented.

Student Characteristics

Gender. Of the 70 data sets, 55 (79%) reported gender. No data sets presented only the academic status of girls identified with EBD. Specific gender breakdowns for the 55 data sets were 4,541 (76%) boys and 1,397 (24%) girls.

Trend analysis revealed that between 1961 and 1970, gender was reported on 285 students. Of those, 204 (72%) were boys and 81 (28%) were girls. Of the 3

TABLE 1
Trends in the Academic Status Research Over Time

Category	1961–1970	1971–1980	1981–1990	1991–2000	Total (%)[a]
	Number of data sets containing characteristic				
Total number of data sets	7	6	26	31	70 (100)
Student characteristics					
Gender					
Boy	4	3	21	27	55 (79)
Girl	4	3	17	20	44 (63)
Not listed	3	3	5	4	15 (21)
Age					
Mean	6	3	19	25	53 (76)
Range	4	1	16	16	37 (53)
Grade placement	1	2	7	7	17 (24)
Not listed	0	2	3	4	9 (13)
Age defined by means					
< 12 years	1	1	11	13	26 (37)
12–15 years	5	2	5	12	24 (34)
>15 years	0	0	3	0	3 (4)
IQ					
Mean	6	6	19	23	54 (77)
Range	4	—	11	4	19 (27)
Minimum	—	—	—	2	2 (3)
Not listed	1	—	6	6	13 (19)
SES					
Listed	1	3	8	12	24 (34)
Race					
Caucasian	1	1	9	13	24 (34)
African American	—	—	7	8	15 (21)
Hispanic	—	—	3	5	8 (11)
Native American	—	—	1	1	2 (3)
Asian	—	—	—	1	1 (1)
Other	—	1	6	10	17 (24)
Not listed	6	5	17	18	46 (66)
Placement setting					
General education	1	—	6	7	14 (20)
Resource room	—	—	6	4	10 (14)
Self-contained	—	1	6	7	14 (20)
Separate day school	—	1	4	7	12 (17)
Residential	—	1	—	4	5 (7)
University/psychiatric facility	6	1	9	9	25 (36)
Other	—	—	4	1	5 (7)
Not listed	—	4	1	2	7 (10)
Academic subject area					
Reading recognition	7	6	24	31	68 (97)
Arithmetic	5	5	21	29	60 (86)
Written expression	—	5	13	19	37 (53)
Reading comprehension	1	2	6	4	13 (19)
Oral expression	—	—	1	1	2 (3)

(table continues)

(Table 1 continued)

Category	Number of data sets containing characteristic				
	1961–1970	1971–1980	1981–1990	1991–2000	Total (%)[a]
Listening comprehension	—	—	1	—	1 (1)
Science	—	—	1	—	1 (1)
History/social studies	—	—	1	—	1 (1)
Other	1	2	2	3	8 (11)
Learning strategies	—	—	—	—	—
Assessment measures					
Standardized instruments	7	6	22	30	65 (93)
Teacher ratings	—	—	2	—	2 (3)
Survey	—	—	1	2	3 (4)
CBM–Researcher made	—	—	1	—	1 (1)
CBM–Teacher made	—	—	—	1	1 (1)
Comparisons of student achievement					
Learning disabilities	—	3	7	2	12 (17)
No disability	1	2	5	4	12 (17)
Mental retardation	—	2	3	1	6 (9)
ADHD	—	—	—	6	6 (9)
High school dropouts	—	—	—	1	1 (1)

[a]Percentages in table are calculated from the total number of data sets. SES = socioeconomic status; CBM = curriulum-based measurement; ADHD = attention-deficit/hyperactivity disorder; dashes indicate "none."

data sets from 1971 to 1980 reporting gender, 712 students were identified, with 505 (71%) of those being boys. Twenty-one data sets between 1981 and 1990 reported gender, resulting in 1,620 identified students. Of these, 1,258 (78%) were boys. Finally, from the 27 data sets between 1991 and 2000 that reported students' gender, 3,482 students were identified, with 2,753 (79%) of those being boys.

Age. Students' age (i.e., mean, range, and grade placement) was included in 61 (87%) of the data sets. Twenty-six (42%) of those assessed children under the age of 12 years, 24 (39%) assessed children ages 12 through 15 years, and only 3 (5%) assessed children over the age of 15 years.

Age was not consistently reported over time. In the first decade (i.e., 1961–1970), all of the articles ($n = 7$) reported the student's age. However, for the remaining three decades (i.e., 1971–1980, 1981–1990, and 1991–2000) the identification of age was not as consistent, with only 67%, 88%, and 87% reporting age, respectively. Moreover, when the age groups were assessed over time, the only articles including children over the age of 15 were published from 1981 to 1990.

IQ. Of the 70 data sets, 57 (81%) reported students' IQ (e.g., mean, range). Measurement instruments (e.g., WISC-R) used for obtaining students' IQ were described in 50 (88%) of the data sets reporting IQ. The range of students' IQs reported was 20 to 165. The median and mode of the reported mean IQ scores were 94.

The trend analysis revealed that the number of data sets reporting IQ decreased over time, with 86%, 100%, 77%, and 81% reporting IQ over the four decades, 1961 to 1970, 1971 to 1980, 1981 to 1990, and 1991 to 2000, respectively. Of the 6 data sets from 1961 to 1970 reporting IQ, the range of IQs was 62 to 136, with a median score of 95 and a mode of 96. For the 6 data sets from 1971 to 1980 reporting IQ, the median score was 93 and the mode was 92. Of the 20 data sets from 1981 to 1990 reporting IQ, the range of IQ was 20 to 165, with a median of 93 and mode of 95. Finally, of the 25 data sets from 1991 to 2000 reporting IQ, the range of scores was 25 to 142, with a median of 96 and a mode of 105.

SES. Of the 70 data sets, 24 (34%) reported SES. Across these 24 data sets, the authors used three different methods (i.e., Duncan, 1961; Hollingshed & Redlich, 1958; Warner, Meekr, & Eells, 1949) and five different terms (i.e., *low, low middle, high to low, varied,* and *low middle to upper middle*) to describe SES. Trend analysis revealed that the reporting of students' SES increased over time. Between 1961 and 1970, only 1 (14%) data set reported SES. Over the next three decades studied, 3 (50%), 8 (31%), and 12 (39%) data sets included SES in the descriptive narrative on the students.

Race/Ethnicity. Twenty-four (34%) data sets reported students' race/ethnicity. Only 3 data sets analyzed the academic status of racial/ethnic groups separately. Specific racial/ethnic data were reported for 3,957 students from these 24 data sets. Of those, specific racial/ethnic breakdowns were as follows: 2,767 (70%) Caucasians, 894 (23%) African Americans, 141 (5%) Hispanics, 8 (0.2%) Native Americans, 1 (.03%) Asian, and 146 (4%) students were described as "other."

The trend analysis revealed that the number of data sets reporting race/ethnicity increased over time, with 1 (14%), 1 (17%), 9 (35%), and 13 (42%) data sets reporting race/ethnicity in 1961 to 1970, 1971 to 1980, 1981 to 1990, and 1991 to 2000, respectively. In the 1 data set reporting race/ethnicity that was published between 1961 and 1970, all of the students (*N* = 74) were identified as Caucasian. For the 1 data set published between 1971 and 1980 that described race, 68 (92%) students were identified as Caucasian and 6 (8%) were described as "other." Of the 9 data sets from 1981 to 1990 reporting race, 672 (64%) were Caucasian, 297 (28%) were African American, 37 (4%) were Hispanic, 2 (0.2%) were Native American, and 41 (4%) were listed as "other." Finally, between 1991 and 2000, 13 data sets described students' race, with 1,953 (71%) students identified as Caucasian, 597 (22%) as African American, 104 (4%) as Hispanic, 6 (0.2%) as Native American, 1 (.04%) as Asian, and 99 (4%) "other."

Placement Settings. Of the total data sets, only 7 (10%) did not define the placement setting of the students participating in the studies. Eleven (17%) of the 63 data sets describing placement setting assessed students across more than one setting.

The trend analysis revealed that over time the range of placement settings studied increased. Specifically, from 1961 to 1970, students were assessed in two placement settings, with the majority of the studies (86%) conducted in highly restrictive settings. Between 1971 and 1980, students were assessed in four placement settings, although none of these studies assessed children in the general education classroom or resource room, which are considered less restrictive settings. However, over the next two decades students from the broad continuum of special education placement settings were included as participants in the research.

Academic Content Areas. Academic content areas were presented in all 70 data sets. Most (*n* = 64, 91%) of the data sets assessed students' academic status in more than one academic area. The trend analysis revealed that with the exception of one study that assessed less common academic areas (i.e., listening comprehension, science, history, and social studies), the academic content areas studied over time have been remarkably consistent. Specifically, research efforts have focused on reading recognition (97%), arithmetic (86%), and written expression (53%). Moreover, the results revealed that no studies looked at specific learning strategies (e.g., outlining, note taking, test taking), a skill that has been an area of focus in the special education literature during the past two decades.

Assessment Measures. All 70 data sets reported methods of assessing students' academic status. Standardized instruments were the most frequently used assessment tool (*n* = 65, 93%). The standardized instruments most frequently used were the *Wide Range Achievement Test* (*n* = 29, 45%); *Woodcock Johnson Psycho-Educational Battery–Revised* (Woodcock & Johnson, 1989; *n* = 13, 20%); *Peabody Individual Achievement Test* (Markwardt, 1970; *n* = 10, 15%); *California Achievement Tests* (1992; *n* = 6, 9%); *Stanford Achievement Test* (Madden & Gardner, 1972; *n* = 4, 6%); *Comprehensive Tests of Basic Skills* (1981; *n* = 3, 5%); and the *Iowa Tests of Basic Skills* (1996; *n* = 3, 5%). Ten other standardized measures were reported in either one (1%) or two (3%) data sets.

The trend analysis revealed that for the first two decades only standardized instruments were used to determine students' academic status. During the next two decades, other assessment tools (e.g., CBM, teacher reports) were included in the studies, albeit to a lesser degree than one might expect.

Groups Compared. Twenty-three (33%) data sets compared the academic status of students with EBD to that of students diagnosed with other disabilities or students without disabilities. Of those, 12 (52%) compared students with EBD to students with learning disabilities, 12 (52%) to students without disabilities, 6 (26%) to students with mental retardation, 6 (26%) to students with ADHD, and 1 (4%) to high school dropouts. In addition, 5 studies presented the academic status of two separate groups of students with EBD (e.g., school refusing students with EBD compared to students with EBD not refusing school). Ten (43%) of the 23 data sets used more than one comparison group (e.g., no disabilities and LD).

Over time, the trend analysis revealed students with EBD have increasingly been compared to a broader range of children with disabilities. Between 1961 and 1970, students with EBD were only compared to their peers without disabilities. However, over the next three decades, students' academic status was compared to that of students with other mild disabilities, including LD and MR. Finally, over the last decade (i.e., 1991–2000) several studies were published (*n* = 6) comparing the academic status of students with EBD to that of their peers with ADHD.

Academic Status

Tables 2 and 3 present the academic status of students with EBD, as reported in the data sets. The results were divided into two categories: (a) the academic status of students with EBD and (b) the academic status of students with EBD as compared to peers; each will be addressed separately. Table 2 presents the results of the 16 data sets that resulted in 35 reports describing students': (a) grade-level achievement or (b) years below, at, or above achievement. Table 3 presents the results obtained from the 23 data sets that resulted in 84 reports of the academic status of students with EBD as compared to those of peers without disabilities or in other disability categories.

Academic Status of Students with EBD. Of the reports obtained from the 16 data sets in which the academic status of students with EBD was described, none reported that the students had performed above grade or age level. Moreover, 32 (91%) of the 35 reported that students with EBD were academically deficient (i.e., below grade level or years behind peers).

In addition, 16 (89%) of the 18 reports on reading, 12 (92%) of the 13 reports on arithmetic, and both of the reports on written expression reported that these students presented academic deficits.

Comparisons to Peers. Academic comparisons between students with EBD and other groups were made in 84 cases. This included comparisons to students without disabilities ($N = 23$), students with LD ($N = 34$), students with MR ($N = 11$), and students with ADHD ($N = 16$). In the 23 comparisons to students without disabilities, students with EBD generally ($n = 15$, 65%) performed less well than their peers without disabilities. Students with EBD generally appeared to perform similar to their peers with LD in arithmetic and written expression and similar to their peers with ADHD across all three academic domains (i.e., reading, arithmetic and written expression). Finally, when compared to students with MR, students with EBD generally performed better in arithmetic and written expression.

TABLE 2
Academic Status of Students with EBD as Presented in the Literature

	Grade level[a]		Year		
Subject area	**Below**	**At**	**<1 Behind**	**1–2 Behind**	**>2 Behind**
Reading	8	2	2	4	2
Arithmetic	8	1	—	2	2
Written expression	2	—	—	—	—
Other	2	—	—	—	—

Note. Numbers represent number of reports presented in the data sets describing the status of each subject area. [a]Grade level placement was determined by recording the largest percentage of students performing below, at, or above grade level. EBD = emotional and behavioral disorder; Dashes indicate "none."

DISCUSSION

This review investigated the literature describing the academic status of students with EBD. Although previous reviews have provided some assessment of the academic status of these students, questions regarding the characteristics of students studied, placement settings, specific academic content areas, and measurement instruments had not previously been examined. In addition, when possible, we examined the academic functioning level of students with EBD. Finally, as several critical areas affecting the education of students in this population have changed over the past four decades (e.g., placement settings, assessment methods), we further sought to assess the trends in research over time. The results revealed several findings characterizing the strengths and limitations of the academic status research, helping us identify areas that would benefit from further consideration.

Student Characteristics

The first finding focused on the student characteristics described in the literature. The analysis revealed that researchers have made an important attempt to assess the academic status of students representative of the EBD population. For instance, in the *Twenty-Third Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act* (U.S. Department of Education, 2001), a nationwide breakdown of the race/ethnicity of students with EBD in the 1999–2000 school year was described. In the annual report, 61.5% of the population of students with EBD were identified as Caucasian, 27.3% as African American, 8.9% as Hispanic, 1.2% as Asian/Pacific Islander, and 1.1% as American Indian/Alaska Native. Moreover, a range of 70% to 75% of students in the nationwide sample were boys. This review found that the race/ethnicity and gender of the students studied in the literature was representative of the EBD population nationwide.

Although these findings suggest that researchers have made efforts to assess samples representative of the population by gender and race, several limitations regarding these studies should be addressed. First, although students of minority status identified with EBD have been included in the research, the number of studies actually reporting data by race/ethnicity is relatively small. Thus, conclusions about the academic status of students in these populations can only be drawn from the 24 studies that presented students' race/ethnicity. Second, few ($n = 8$) of the studies assessed the academic status of girls separately from that of boys, and even fewer ($n = 3$) assessed students of minority status separately from those identified as Caucasian. Without a separate analysis of students' academic achievement scores by race/ethnicity and gender, it remains unclear whether race/ethnicity or gender differences exist within this population. Third, the IQs reported in the data sets ranged from 20 to 165. Current criteria for the identification of special education status because of EBD, namely tested IQ within the normal range, would have placed some of the children in different special education categories (e.g., mental retardation). Thus, the reported academic functioning of these students may have been influenced by the inclusion of students with cognitive deficits. Fourth, although 24 (34%) of the data sets indicated that SES had been assessed, the range in measures used and the lack of clear designations of SES does not allow for conclusions to be drawn about the SES of the children studied. Finally, this review revealed other important student characteristics that were not assessed in the literature but may be related to academic achievement. For instance, no studies reported the age of the students when they were initially identified as having EBD. It may be expected that early identified students receiving services present different patterns of academic functioning than do later identified students, either because they have received more intensive support resulting from early identification and

Table 3
Academic Status of Students with EBD Compared to Peers With and Without Disabilities

Subject area	EBD vs. ND			EBD vs. LD			EBD vs. MR			EBD vs. ADHD		
	EBD < ND	EBD = ND	EBD > ND	EBD < LD	EBD = LD	EBD > LD	EBD < MR	EBD = MR	EBD > MR	EBD < ADHD	EBD = ADHD	EBD > ADHD
Reading	5	4	1	1	3	7	—	2	2	2	3	1
Arithmetic	5	1	—	1	8	2	1	1	3	—	3	2
Written Expression	2	1	—	—	6	2	—	—	2	—	1	1
Other	3	1	—	—	2	2	—	—	—	1	1	1

Note: EBD = emotionally and behaviorally disordered; ND = peers without disabilities; LD = learning disabled; MR = mentally retarded; ADHD = attention-deficit/hyperactivity disorder. Dashes indicate "none."

treatment or because they have been achieving at a lower level, perhaps due to more severe behavioral and adjustment problems, prompting early identification. In either instance, patterns of academic achievement for students identified at an earlier age may provide a different picture than those identified at a later stage of their academic career, providing critical information for programs advocating early intervention.

Placement Settings

The second salient finding was the notable trend in the research assessing placement settings over time. Previous reviews have revealed that the majority of the research on the academic status of students with EBD has been conducted in psychiatric or residential treatment settings (Epstein et al., 1989), limiting the extent to which findings can be generalized to students served in general education placements and other placement settings. Patterns similar to those in the research were found in this review, with the majority of data sets assessing students outside the general education setting. Although researchers have begun to recognize the importance of assessing students served in the general education classroom, resource rooms, and self-contained settings within the general education building, a clear understanding of the academic abilities of students with EBD served in these less restrictive settings has yet to be reached. Without this knowledge, our ability to focus and target academic interventions and accommodations is limited.

Dependent Measures

The third key issue highlighted in this review is the type of measure used to assess the academic status of students with EBD. In their review of the academic status of adolescents with EBD, Epstein et al. (1989) found that a number of the studies used standardized measures to assess students' broad academic achievement. Due to the restrictions inherent with broad standardized measures (e.g., one-time sampling of students' abilities, few specific areas assessed), limited conclusions could be drawn about specific areas of achievement. In our review, similar findings were identified, as the vast majority (93%) of the studies reported student achievement based on standardized instruments. Although the results of the trend analysis suggest researchers are beginning to assess achievement through other means, dependent measures, such as student grades, teacher surveys, and CBMs, were rarely used to identify students' abilities in specific skill sets. Consequently, our view of the academic status of students with EBD is limited, as much of the information regarding specific academic competencies continues to remain ambiguous.

Academic Status

The fourth area of focus concerned the specific skill sets and academic status of children with EBD. We sought to determine the academic status of students with EBD by aggregating the results reported in the data sets. Generally, status differed depending on the method used to report academic achievement. When status was presented in years behind, at, or above achievement, there were no reports of students with EBD attaining above average or average scores. However, when students' scores were reported by grade levels (i.e., below, at, or above grade level), 3 (13%) data sets reported that the students were performing at average ability. These findings may have implications for how students' scores are reported or bring into question the accuracy of using different methods to report achievement.

When the academic status of students with EBD was compared to that of their peers without disabilities or with other categories of disabilities, several findings that may be pertinent to the future research and educational programming of students with EBD were revealed. For example, previous studies assessing the academic status of students with EBD, ADHD, and LD, such as the one conducted by Lopez and colleagues (1996), have sought to determine inappropriate placement decisions through the analysis of students' academic ability. Suggesting that inappropriate placement has effects on the prevention of EBD, Lopez and colleagues found that many children with ADHD and EBD were being misidentified and inappropriately served in programs for students with LD. This review further highlighted their findings, as the performance of students with EBD was often found to be equal to that of their peers with LD, primarily in arithmetic and written expression, and equal to that of their peers with ADHD across subject areas. These results may affect both placement and programming decisions for students with EBD.

Trends

Finally, this review sought to determine the trends in the research over time. Over the past 40 years, the number of articles assessing the academic status of students with EBD has dramatically increased from 7 publications between 1961 and 1970, to 26 publications between 1991 and 2000. However, despite an initial surge in research productivity, a steady and significant decline in the number of publications assessing this topic has occurred within the last 10 years. Specifically, from 1991 to 2000, the number of articles published annually was 2, 5, 4, 4, 3, 3, 0, 2, 2, and 1, respectively. Given the obvious academic deficiencies of students with EBD and the significant questions that have yet to be answered, we find this decline to be disconcerting.

Limitations

Issues regarding the search and coding procedures used in this review reveal limitations that may have had an impact on the results. First, specific descriptors were used to locate articles from two electronic databases. Due to the considerable number of possible descriptors that could be used to describe our target population, it is possible that some articles were unintentionally overlooked and left out of the review. Second, only two journals were hand searched. Because 33% (n = 23) of the data sets included in the review were retrieved from the hand-searched journals (i.e., *Behavioral Disorders* and *Journal of Emotional and Behavioral Disorders*), we suspect that additional hand searches of other journals in the field of EBD would have revealed articles not obtained through either the database search or the ancestral review. Finally, the academic status of students with EBD described in this review was reported only if the authors provided a quantifiable description of the students' achievement level in relation to peers; grade level; or years above, at, or behind achievement. Thus, only 39 (56%) of the data sets could be coded for status and described in this review.

Future Research

Despite the significant amount of research published over the past four decades on the academic status of students with EBD, several questions regarding student characteristics, developmental pathways, and specific academic skill sets remain largely unanswered. To answer these questions, a number of areas are in need of additional research. First, although many studies assessing the academic status of students with EBD have made attempts to include nationally representative samples, few studies have examined academic performance of these samples across race/ethnicity, gender, and SES. Given the increasing recognition of cultural and gender-related differences among children (e.g., Dixon-Floyd & Johnson, 1998; Meece & Kurtz-Costes, 2001), the need to understand the impact of these characteristics on academic achievement is central to providing the individualized instruction called for in special education law. Second, few studies have examined the academic performance of students with EBD over time. Longitudinal studies would increase our understanding of the developmental pathways of underachievement, help target interventions, and allow for an assessment of service utilization and the outcomes of treatment. Moreover, longitudinal studies would allow for greater examination of treatment resisters and the multitude of variables (e.g., problem behavior, truancy, placement settings) that may significantly affect students' academic achievement. Third, the majority of studies examining the academic status of students with EBD were conducted in restrictive settings (e.g., residential treatment facilities, university hospitals). Given the increasing trend toward the inclusion of students with disabilities in the general education classroom, understanding the academic performance of these students is critical for accommodation planning, implementation, and ongoing evaluation. However, to date, only 20% of the data sets addressed the academic status of children served in general education classrooms. Fourth, few studies examined the specific academic skill sets of students with EBD. For instance, it is apparent that students with EBD underachieve in reading, but to know what specific skills they lack (e.g., comprehension, word identification) in the general academic areas and across more advanced academic domains (e.g., history, geography, specific learning strategies), we must conduct additional research. If we are to tailor academic interventions to meet the needs of students, we need to first understand exactly where those deficits exist. Finally, future studies should attempt to address a range of marker variables to better define the specific characteristics of the students assessed in the studies. For example, descriptive marker variables such as the number of students categorized by (a) gender, (b) age, (c) grade level, (d) geographic location, (e) race/ethnicity, (f) placement settings (e.g., public school, institution), (g) SES, (h) primary language, (i) educational history (e.g., frequently changes schools), (j) educational placement (e.g., with peers without disabilities), and (k) physical and health status or comorbidity (e.g., EBD and ADHD; Keogh, Major-Kingsley, Omori-Gordon, & Reid, 1982) should be included to allow for more accurate descriptions of the students assessed. Similar efforts have occurred with students with LD (e.g., Keogh et al., 1982).

Implications

The results of this review primarily highlight the specific characteristics of students, placement settings, academic subject areas, methods of assessment, and academic achievement assessed in the EBD literature. Generally, although the academic status of a broad range of students with EBD has been assessed, this review draws attention to the areas that continue to lack sufficient research. Diverse academic subject areas and specific skill sets within the primary academic domains, specific student characteristics, and specific ongoing measures of students' academic abilities warrant further study.

Of central importance, however, is that this review further supports the notion that students with EBD are often academic underachievers. Academic accommodations, adaptations, interventions, and individualized program plans for students with EBD need to provide additional assistance to students' displaying coexisting academic deficits. Interventions focused solely on social behavior that ignore students' academic deficits may have lasting detrimental effects on students' academic achievement and contribute to the lifelong pattern of social deviancy often representative of children with EBD.

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Notes

1. Operational definitions of each section included on the coding sheet may be obtained by contacting the first author.
2. A table of all articles, coded characteristics, and citations included in the review may be obtained by contacting the first author.

References

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., Text rev.). Washington, DC: Author.

Bower, B. (1995). Criminal intellects: Researchers look at why lawbreakers often brandish low IQs. *Science News, 147,* 232–233, 239.

California achievement tests (5th ed.). (1992). Monterey, CA: CTB/McGraw-Hill.

Coutinho, M. J. (1986). Reading achievement of students identified as behaviorally disordered at the secondary level. *Behavioral Disorders, 11,* 200–207.

Comprehensive tests of basic skills. (1981). Monterey, CA: McGraw-Hill.

Cullinan, D., & Epstein, M. H. (2001). Comorbidity among students with emotional disturbance. *Behavioral Disorders, 26,* 200–213.

Cullinan, D., Epstein, M. H., & Lloyd, J. W. (1991). Evaluation of conceptual models of behavior disorders. *Behavioral Disorders, 16,* 148–157.

Dixon-Floyd, I., & Johnson, S. W. (1998). Variables associated with assigning students to behavioral classrooms. *Journal of Educational Research, 91,* 123–127.

Duncan, G. (1961). A socioeconomic index for all occupations. In A. J. Reiss, Jr. (Ed.), *Occupations and Social Status* (pp. 109–138). New York: Free Press.

Elliott, S. N., & Fuchs, L. S. (1997). The utility of curriculum-based measurement and performance assessment as alternatives to traditional intelligence and achievement tests. *School Psychology Review, 26,* 224–233.

Epstein, M. H., & Cullinan, D. (1983). Academic performance of behaviorally disordered and learning-disabled pupils. *The Journal of Special Education, 17,* 303–307.

Epstein, M. H., Kinder, D., & Bursuck, B. (1989). The academic status of adolescents with behavioral disorders. *Behavioral Disorders, 14,* 157–165.

Forness, S. R., Youpa, D., Hanna, G. L., Cantwell, D. P., & Swanson, J. M. (1992). Classroom instructional characteristics in attention deficit hyperactivity disorder: Comparison of pure and mixed subgroups. *Behavioral Disorders, 17,* 115–125.

Grizenko, N., Papineau, D., & Sayegh, L. (1993). Effectiveness of a multimodal day treatment program for children with disruptive behavior disorders. *Journal of the American Academy of Child and Adolescent Psychiatry, 32,* 127–134.

Hinshaw, S. P. (1992). Externalizing behavior problems and academic underachievement in childhood and adolescence: Causal relationships and underlying mechanisms. *Psychological Bulletin, 111,* 127–155.

Hollingshed, A., & Redlich, F. (1958). *Social class and mental illness: A community study.* New York: Wiley.

Individuals with Disabilities Education Act Amendments of 1997, 20 U.S.C. § 1400 (26).

Iowa tests of basic skills. (1996). Itasca, IL: Riverside.

Jastak, J. F., & Jastak, S. R. (1978). Wide range achievement test. Wilmington, DE: Jastak Assoc.

Kataoka, S. H., Zima, B. T., & Dupre, D. A. (2001). Mental health problems and service use among female juvenile offenders: Their relationship to criminal history. *Journal of the American Academy of Child and Adolescent Psychiatry, 40,* 549–555.

Keogh, B. K., Major-Kingsley, S., Omori-Gordon, H., & Reid, H. R. (1982). *A system of marker variables for the field of learning disabilities.* New York: Syracuse University Press.

Kauffman, J. M. (2001). *Characteristics of emotional and behavioral disorders in children and youth* (7th ed.). Upper Saddle River, NJ: Merrill/Prentice Hill.

Kauffman, J. M., Cullinan, D., & Epstein, M. H. (1987). Characteristics of students placed in special programs for the seriously emotionally disturbed. *Behavioral Disorders, 12,* 175–184.

Lee, S. W., Elliott, J., & Barbour, J. D. (1994). A comparison of cross-informant behavior ratings in school-based diagnosis. *Behavioral disorders, 19,* 87–97.

Levy, F., & Hobbs, G. (1989). Reading, spelling, and vigilance in attention deficit and conduct disorder. *Journal of Abnormal Child Psychology, 17,* 291–298.

Lopez, M. F., Forness, S. R., MacMillan, D. L., Bocian, K. M., & Gresham, F. M. (1996). Children with attention deficit hyperactivity disorder and emotional or behavioral disorders in primary grades: Inappropriate placement in the learning disorder category. *Education and Treatment of Children, 19,* 286–299.

Madden, R., & Gardner, E. F. (1972). *Stanford achievement test.* New York: Harcourt Brace Jovanovich.

Markwardt, F. C. (1970). *Peabody individual achievement test.* Circle Pines, MN: American Guidance Service.

Mattison, R. E., Spitznagel, E. L., & Felix, B. C. (1998). Enrollment predictors of the special education outcome for students with SED. *Behavioral Disorders, 23,* 243–256.

Meadows, N. B., Neel, R. S., Scott, C. M., & Parker, G. (1994). Academic performance, social competence, and mainstream and nonmainstreamed students with serious behavioral disorders. *Behavioral Disorders, 19,* 170–180.

Meece, J. L., & Kurtz-Costes, B. (2001). Introduction: The schooling of ethnic minority children and youth. *Educational Psychologist, 36,* 1–7.

Naylor, M. W., Staskowski, M., Kenney, M. C., & King, C. A. (1994). Language disorders and learning disabilities in school-refusing adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry, 33,* 1331–1337.

O'Brien, J. D., Halperin, J. M., Newcorn, J. H., Sharma, V., Wolf, L., & Morganstein, A. (1992). Psychometric differentiation of conduct disorder and attention deficit disorder with hyperactivity. *Developmental and Behavioral Pediatrics, 13,* 274–277.

Scruggs, T. E., & Mastropieri, M. A. (1986). Academic characteristics of behaviorally disordered and learning disabled students. *Behavioral Disorders, 11,* 184–190.

Sullivan, E. B. (1927). Age, intelligence, and educational achievement of boys entering Whittier State School. *Journal of Delinquency, 11,* 23–38.

Tamkin, A. S. (1960). A survey of educational disability in emotionally disturbed children. *Journal of Educational Research, 53,* 313–315.

U.S. Department of Education. (2001). *Twenty-third annual report to Congress on the implementation of the Individuals with Disabilities Education Act*. Washington, DC: Author.

U.S. Department of Health and Human Services. (1999). *Mental health: A report of the Surgeon General*. Washington, DC: Author.

VanDerHeyden, A. M., Witt, J. C., Naquin, G., & Noell, G. (2001). The reliability and validity of curriculum-based measurement readiness probes for kindergarten students. *School Psychology Review, 30,* 363–382.

Warner, W. L., Meekr, M., & Eells, K. (1949). *Social class in America*. Chicago: Science Research Associates.

Wechsler, D. (1974). *Wechsler intelligence scales for children–Revised.* San Antonio, TX: Psychological Corp.

Woodcock, R., & Johnson, M. (1989).*Woodcock-Johnson psycho-educational battery–Revised.* Allen, TX: DLM Teaching Resources.