

5-1-2007

## Academic Achievement of Students with Emotional and Behavioural Disorders: A Review of the Research

Jenn de Lugt  
Queen's University, 1ljds@queensu.ca

### Abstract

Although students with emotional and behavioural disorders often have academic deficits, the interventions provided for these students usually focus on their behaviour. The result may be that the academic needs of this population are neglected and possibly increase due to neglect. While the research is inconclusive, it suggests that there may be a reciprocal relationship between poor academic achievement and problem behaviour. Without early and effective intervention, students with emotional and behaviour disabilities (EBD) are likely to be at risk for poor academic as well as psychosocial outcomes. The purpose of this review is threefold: (a) to review the recent research on the academic achievement, particularly reading achievement, of students with EBD; (b) to describe the current classroom instruction provided to students with EBD; and (c) to review the research on what constitutes effective instructional practice for this population. The paper closes with recommendations for future research.

ISSN 1918-5227  
Follow this and additional works at: <https://ir.lib.uwo.ca/eei>

 Pages 111-136  
Part of the [Education Commons](#)

---

### Recommended Citation

de Lugt, J. (2007) Academic Achievement of Students with Emotional and Behavioural Disorders: A Review of the Research. *Exceptionality Education International*, 17, 111-136. Retrieved from <https://ir.lib.uwo.ca/eei/vol17/iss3/6>

This Article is brought to you by Scholarship@Western. It has been accepted for inclusion in Exceptionality Education International by an authorized administrator of Scholarship@Western. For more information, please contact [jspecht@uwo.ca](mailto:jspecht@uwo.ca).

## **Academic Achievement of Students with Emotional and Behavioural Disorders: A Review of the Research**

*Jenn de Lugt*  
*Queen's University*

### **Abstract**

*Although students with emotional and behavioural disorders often have academic deficits, the interventions provided for these students usually focus on their behaviour. The result may be that the academic needs of this population are neglected and possibly increase due to neglect. While the research is inconclusive, it suggests that there may be a reciprocal relationship between poor academic achievement and problem behaviour. Without early and effective intervention, students with emotional and behaviour disabilities (EBD) are likely to be at risk for poor academic as well as psychosocial outcomes. The purpose of this review is threefold: (a) to review the recent research on the academic achievement, particularly reading achievement, of students with EBD; (b) to describe the current classroom instruction provided to students with EBD; and (c) to review the research on what constitutes effective instructional practice for this population. The paper closes with recommendations for future research.*

## **Introduction**

The research shows that students with emotional and behavioural disorders (EBD) often have academic deficits (Levy & Chard, 2001; Pierce, Reid, & Epstein, 2004; Strong, Wehby, Falk, & Lane, 2004). Academic failure, particularly in reading, is a major predictor of larger failures academically and socially in school and beyond school (Scott & Shearer-Lingo, 2002; Strong et al., 2004). In addition, research has shown that without effective intervention, elementary students with behavioural disorders are likely to have difficulties throughout their school years, are at risk of dropping out of school, and tend to experience social problems as adults (Laffey, Espinosa, Moore, & Lodree, 2003; Levy & Chard, 2001; Trout, Nordness, Pierce, & Epstein, 2003).

The comorbid nature of emotional and behavioural disorders is common and therefore this term is frequently used to describe students with a range of problems that adversely affect their interaction with peers and teachers. Socially, students with EBD are often excluded from regular education environments because of behaviours such as non-compliance, aggression, disruption, self-injury, property damage, and antisocial responses (Scott & Shearer-Lingo, 2002). In addition, children with EBD are often characterized by poor academic performance that cannot be explained by intellectual, sensory, or health impairments (Reid, Gonzalez, Nordness, Trout, & Epstein, 2004). There is little consensus on a definition of behaviour exceptionalities, and in the Canadian context definitions vary from province to province (Dworet & Rathgeber, 1998). In the classroom setting, behavioural exceptionalities are generally defined as those behaviours that differ significantly and chronically from socially accepted norms, interfering with the learning of the individual and the class as a whole (Hutchinson, 2007). Behavioural disorders range in severity from mild through moderate to severe. The characteristics of these disorders include a number of externalizing (e.g., aggression, hyperactivity, and non-compliance) and internalizing (e.g., anxiety, depression, and stress-related disorders) characteristics that inhibit a child's ability to successfully build and maintain social relationships with peers, teachers, and adults. These behaviours are exhibited over an extended period of time, in more than one setting, and with more than one person. In addition, students identified as having behavioural disorders usually have not responded well to regular classroom management strategies (Hutchinson, 2007). According to Lewis and Sugai (1999), problem behaviour is the single most common reason why individuals with disabilities are removed from regular school, work, and home settings.

This paper is presented in six sections. The first section provides an introduction to the paper including its purpose, rationale, and the method used.

The second section focuses on what is known about the academic and reading achievement of students with EBD. The third section summarizes current classroom instruction for this population, and the fourth section reviews research on effective instructional practices for students with EBD. The final two sections provide a summary of the data and a conclusion to this review.

### *Rationale*

Much less attention has been paid to the nature of academic and reading deficits, and to what constitutes effective academic instruction for students with EBD, than to their behavioural and social needs and to behavioural and social interventions. This lack of academic focus could mean that existing academic deficits are exacerbated. Furthermore, several authors have suggested that with effective instruction that ensures academic success for the student, behaviour problems can be ameliorated (Adelman & Taylor, 2001; Lane et al., 2002; Scott & Shearer-Lingo, 2002; Vandergriff & Rust, 1985; Wehby, Falk, Barton-Arwood, Lane, & Cooley, 2003).

Two recent papers, a literature review (Trout et al., 2003) and a meta-analysis (Reid et al., 2004) reviewed the literature between 1961 and 2000. Trout et al. (2003) reviewed the research on the academic status of children with EBD and found that, of the 70 data sets in which the academic status of students with EBD was described (in 35 studies), none reported that students achieved above grade level. Furthermore, 32 out of the 35 reports (91%) indicated that students with EBD were academically deficient (particularly in reading and mathematics). In this study, the authors reviewed the literature on student characteristics, students' academic status, and trends in research. This review confirmed that students with EBD generally perform one to two years below grade level, and that intervention programs that focus solely on social behaviour ignore the students' academic deficits.

One could argue that, like all literature reviews, this study by Trout and her colleagues (Trout et al., 2003) is confined by its search criteria. Because a number of descriptors can be used to identify the target population, it is possible that some articles were missed. The authors reported that they hand-searched two journals (*Behavioral Disorders* and the *Journal of Emotional and Behavioral Disorders*). The selection criteria for inclusion of papers required articles to report a quantifiable measure of the students' achievement compared to peers. The authors reported that this restricted the number of included data sets so that only 56% of those available were described in the review. In spite of what might be seen as limitations, this study supported the conclusion that

students with EBD often have significant academic deficits; the authors suggested that more work is needed to address specific academic accommodations, interventions, and individualized programs for students who have EBD and coexisting academic deficits.

A meta-analysis by Reid et al. (2004) provided an estimate of the magnitude of the difference in academic performance between students with EBD and their same-age, non-disabled peers by quantitatively synthesizing the research on the academic status of students with EBD. Through their literature search of relevant studies published between 1961 and 2000, 25 studies were found that met the inclusion criteria. These criteria stipulated that participants met specific criteria that identified them as having EBD, the study included a mean score and standard deviation on a standardized test in at least one academic area, and the study sample included children and youth between the ages of 5 and 21. The 25 studies included 2,486 participants with EBD, where 80% were boys and 20% were girls. The findings demonstrated a moderate to large (-.69) overall difference in the academic performance of students with EBD, compared to those without; 75% of the students in the EBD group scored below the mean of the contrast group. This study also showed that students with EBD performed significantly below their peers in all academic areas, with the greatest absolute deficits in mathematics and spelling; however, the differences across academic areas were not significant.

A longitudinal study by Anderson, Kutash, and Duchnowski (2001) compared the academic achievement of students with EBD to that of students with learning disabilities (LD). The academic progress of the two groups was assessed after a 5-year period by identifying changes in standardized mathematics and reading achievement test scores. Forty-two students with EBD and 61 students with LD were tested at Time 1 (Kindergarten or Grade 1) and again at Time 2 (Grade 5 or 6). Anderson et al. found that although both groups were initially below the norm in mathematics and reading achievement, after 5 years of receiving special education services only the LD group had made significant progress in reading even though their scores had been substantially lower than those of the students with EBD at Time 1. This result is particularly alarming considering that the students with EBD had received significantly more special education services during this period. Several limitations suggest that this study should be interpreted with caution. The researchers conducted secondary analysis of an existing data set, preventing any control by the researchers over data collection. Secondly, as the authors reported, it was not possible to track and assess the individual special education services provided to the participants, and the type and quality of these services could have affected academic outcomes. In addition, this research was conducted on data collected from one

school district in the southeastern United States, restricting generalization. In spite of these limitations, this study by Anderson et al. highlights the possibility that students with EBD require academic interventions.

Of the elementary exceptional student population in Ontario, 4.4% is receiving special education services for behaviour disorders (Weber & Bennett, 2004). More than 50% of students with EBD have been shown to meet one or more of the criteria for identifying students as having an LD (Glassberg, Hooper, & Mattison, 1999). Even with this considerable overlap, researchers and teachers have focused almost exclusively on managing the behaviour of students with EBD, while working to improve the academic success of students with LD. With intervention programs that focus solely or predominantly on behaviour, the implications are obvious; any existing academic deficits are likely to be exacerbated.

This paper reviews research in three areas relevant to these issues: (a) the academic and reading achievement of students with EBD, (b) current classroom instruction provided to students with EBD, and (c) what the research shows constitutes effective instructional practices for this population. The research on the academic achievement of students with EBD, published between 1961 and 2000, has been thoroughly reviewed (Reid et al., 2004; Trout et al., 2003); however, a number of studies on the topic have been completed between 2001 and 2007. Thus, this paper will bring the review on academic achievement to the present. It will also enable a contrast of the descriptive studies of current classroom instruction for students with EBD with what the research documents as effective instructional practices for these students. Merging these three areas of research may suggest fruitful directions for future intervention research and classroom interventions to meet the academic as well as social and behavioural needs of students with EBD.

### *Method*

This review is not intended to be exhaustive, but rather examines the recent literature (from 2001 to the present) regarding the relationship between academic achievement and behaviour, the status of current instructional practices, and what is known about effective instruction for students with EBD. The criteria for inclusion were that: (a) the publication date should be between 2001 and 2007, (b) the article must refer to the academic achievement of students with EBD, (c) school-aged children (between the ages of 4 and 17) are the participants, and (d) the interventions are school-based. The literature search was initiated by consulting four core education research databases (the Profes-

sional Development Collection, Education Full Text, Canadian Education, and ERIC Databases). Keywords used in the search included but were not limited to combinations of *behaviour disorders*, *EBD*, *behaviour problems*, *academic achievement*, *reading*, *literacy*, *students*, and *effective academic instruction*. Subsequent to the initial search, additional leads were followed that were in the reference lists of relevant papers.

### **Academic and Reading Achievement of Students with EBD**

Although causality has not yet been determined, the evidence suggests a reciprocal relationship between poor academic achievement and problem behaviour (Hinshaw, 1992). In some cases, underachievement has been shown to foster inappropriate behaviour (Morgan, Farkas, Tufis, & Sperling, in press; Trout et al., 2003) while in others, problem behaviour has been shown to negatively influence academic performance (Wehby, Lane, & Falk, 2003). In an investigation using the Environmental Risk (E-Risk) Longitudinal Twin Study, Trzesniewski, Moffitt, Caspi, Taylor, and Maughan (2006) found that for boys, a reciprocal causation model best explained the relationship between reading achievement and antisocial behaviour. For this group of 5- and 7-year-olds, poor reading led to antisocial behaviour and vice versa. For girls, however, it was found that behaviour problems led to reading problems, but reading problems did not lead to behaviour problems. This distinction has important implications for interventions for both groups.

Several studies have shown that students with EBD have below-average cognitive functioning (Coleman, 1996) and large academic deficits with externalizing behaviours, particularly related to reading, mathematics, and written language achievement (Nelson, Benner, Lane, & Smith, 2004; Trout et al., 2003). Ruhl and Berlinghoff (1992) suggested that between 33% and 81% of children with behavioural disorders have academic difficulties.

A cross-sectional study by Nelson et al. (2004) with a random sample of 155 Kindergarten to Grade 12 students with EBD (of all the students with EBD in an urban school district) examined the extent to which students with EBD experienced academic achievement deficits. These students (126 boys and 29 girls) were receiving special education services for EBD in a mid-sized urban public school district in the American Midwest. Data were collected over a 4-month period on the academic achievement (mathematics, reading, and written language skills) of the students, their age and gender, and problem behaviours

as recorded on the Child Behavior Checklist: Teacher Report Form (Achenbach, 1991). Three principal findings from this study were highlighted. First, they found that the sample as a whole (both boys and girls) experienced large academic achievement deficits in all content areas compared to the group on which the achievement test was normed. Second, academic achievement levels in reading and written language remained constant through the grades, while math deficits tended to increase with age. Third, they found that students with EBD who exhibited externalizing behaviours such as attention, aggression, and delinquency were more likely to experience academic achievement deficits in all content areas than students who evidenced internalizing behaviours.

Although this investigation described the academic achievement of students with EBD across the school-aged population, there are several limitations that should be noted. Because of the cross-sectional research design, the sampling of students may not have been representative of students with EBD; for example, this sample was representative of severity but not of ethnicity or SES of the EBD population in general, according to the authors. Furthermore, as this study reported on one school district in one geographic area, generalization to other groups and areas should be done cautiously. Nevertheless, and with these limitations in mind, this study does confirm earlier work in two important aspects: a relatively large proportion of students with EBD also have academic problems, and academic underachievement is often associated with externalizing behaviours such as aggression, attention, and delinquency.

From these studies it is clear that the academic performance of students with EBD is problematic. What is less clear is what cognitive process or processes can be implicated. The unique role of attention problems was identified by Barriga et al. (2002) in their investigation into the relationship between problem behaviours and the academic achievement of adolescents. This study examined the relationship between eight teacher-reported problem behaviours (withdrawal, somatic complaints, anxiety/depression, social problems, thought problems, attention problems, delinquent behaviour, and aggressive behaviour) and standardized measures of academic achievement (overall, reading, spelling, and mathematics). The participants were boys ( $n = 41$ ) and girls ( $n = 17$ ) aged 11 to 19 years who were attending an alternative school for students with disruptive behaviour (especially aggression) and poor interpersonal relationships with peers and teachers. The Wide Range Achievement Test (WRAT3; Wilkinson, 1993) was used to measure academic achievement in three areas: reading (letter recognition and naming, and word pronouncing out of context), spelling (writing dictated names, letters, and words), and mathematics (counting and reading number symbols, and solving oral problems). Achenbach's (1991) Teacher Report Form was completed by each student's teacher within



one week of the achievement test and was used to assess the adolescents' academic and adaptive functioning, and their problem behaviours. Through correlation and regression analyses the researchers found that five of the problem behaviours – withdrawal, somatic complaints (internalizing behaviours), and attention problems, delinquent behaviour, and aggressive behaviour (externalizing behaviours) – were significantly correlated with the academic achievement measures. In contrast, anxiety/depression, thought problems (internalizing behaviours) and social problems (externalizing behaviours) were *not* significantly correlated with academic achievement. By conducting multiple regression analyses to assess the relationship between these behaviours and achievement, while controlling for attention problems, the authors found that the same pattern of significance emerged for each analysis. Attention problems contributed to the unique variance in each of the academic achievement measures. The authors concluded that many problem behaviours (both externalizing and internalizing) are not directly related to academic underachievement, but rather that they are associated with attention problems that in turn have a negative impact on academic achievement. These findings are in contrast to the findings of Hinshaw (1992); he concluded that the mediating role of attention was evident in childhood, but not in adolescence where delinquent behaviour was a significant predictor of underachievement, even when attention problems were controlled for.

Although the literature indicates that students with EBD are generally deficient across all academic subject areas (Nelson et al., 2004; Reid et al., 2004), reading has most frequently been cited as a particular concern (Levy & Chard, 2001; Nelson et al., 2004; Strong et al., 2004; Trout et al., 2003). This is likely due, in part, to the prevailing public concern regarding the development of literacy skills, in recognition of reading as an essential life skill. In addition to reading, several studies have also indicated mathematics (Nelson et al., 2004; Reid et al., 2004; Trout et al., 2003) and spelling (Reid et al., 2004) as areas of deficiency for students with EBD.

Negative externalizing behaviours are often found to be associated with low achievement outcomes in language skills and mathematics (Barriga et al., 2002; Nelson et al., 2004), while internalizing behaviours were less clearly and less consistently associated with underachievement (Barriga et al., 2002). The academic deficits of this population seem to stabilize over time indicating a need for early and effective intervention, without which students with EBD are at risk for negative outcomes in both school and life, more so than students with other disabilities (Levy & Chard, 2001; Trout et al., 2003).

### ***Reading Achievement and Students with EBD***

Reading disabilities and behaviour problems are the two most pervasive childhood disorders (Levy & Chard, 2001). Without early intervention, both are likely to lead to costly and long-term negative outcomes for the individual and for society. Literacy proficiency is a critical component to learning and to functioning within society. With improved literacy skills, other academic areas can potentially be improved and workplace success is more likely.

A number of studies have specifically investigated the reading achievement of students with EBD. Couthino (1986) compared the past and subsequent reading performance of students with EBD to that of their peers without disabilities. She found that the reading achievement of the students with EBD was significantly below that of their peers. More disturbing was the fact that the achievement discrepancy between the two groups increased as they progressed through school. A study (Wehby, as cited in Strong et al., 2004) compared 21 high school students with EBD to a sample of typically achieving students, matched on their grade-level reading ability. The results indicated that the students with EBD performed significantly lower on word attack skills, reading fluency and accuracy, and overall reading rate.

Some variation in the reading ability of students with EBD was identified by Coleman and Vaughn (2000). The teachers in their focus group found that it was difficult to separate the emotional and behavioural problems of this population from their academic difficulties. Interestingly, they found that some students with EBD were very strong readers and used reading as a means of escape, while others could barely read. Most of the teachers agreed that students who had “pure” EBD (without any coexisting disabilities) were likely to be good readers. Conversely, the teachers believed that those students who had additional challenges such as ADHD or learning disabilities were likely to have significant problems with reading.

### **Current Classroom Instruction for Students with EBD**

The focus of most EBD programs is behaviour management, not academic instruction. Recent evidence has revealed that teachers in self-contained classrooms for EBD students devote only 30% of the school day to academic instruction (Wehby, Lane, et al., 2003). In a regular classroom setting there is little focus on the specific academic needs of students with EBD. Wehby, Lane, et al. suggested four possible factors that contribute to this lack of academic instruction:

1. *Student behaviour interferes with instruction.* The social and behavioural challenges of students with EBD frequently disrupt the class, interfering with the instruction and learning of the student and of the class in general.
2. *Students influence teacher behaviour.* Because the most consistent interactions between the student with EBD and the teacher are likely to occur around instances of inappropriate behaviour, there tends to be a lack of praise or positive statements, low rates of instructional demands, and high rates of reprimands.
3. *There is a lack of teacher preparation.* The training of most pre-service teachers centres on the management of antisocial behaviour, placing little or no emphasis on effective instruction for this population.
4. *There is a lack of research on the academic needs and best instructional practices for children and youth with EBD.*

According to Wehby, Lane, et al. (2003), the last of these is the most disconcerting because students with EBD often have academic deficits similar to students with learning disabilities but do not receive the same academic focus. Furthermore, as several authors have indicated, these deficits do not appear to be remediated over time.

Observational studies provide insights into the reading instruction provided to students with EBD. A recent review of published observational studies revealed that 40% or more of EBD students' instructional time in reading is spent doing independent seatwork (Vaughn, Levy, Coleman, & Bos, 2002). In general, the results of this review indicated that the overall quality of reading instruction was poor, with too much of the allocated reading time spent on waiting, seatwork, and independent work. On average, more than half of the allocated reading time was spent on independent seatwork and completing worksheets, regardless of the setting (general education, special education, and/or remedial reading). Little time was devoted to the reading of text or to direct instruction, even though current research emphasizes the need for systematic and explicit instruction. Furthermore, and despite the evidence supporting small-group instruction, studies conducted before 1990 showed a greater emphasis on small-group instruction than do more contemporary studies.

Levy and Chard (2001) conducted an observational study of reading instruction in elementary self-contained classrooms for students with EBD and confirmed these findings. Independent seatwork dominated the instructional time and although half of the teachers did provide instruction in phonological awareness and word analysis, these skills were not applied when the students

were reading. Furthermore, the emphasis was on managing student behaviour and little instruction was teacher-directed.

Based on the observational research, it appears that academic and reading instruction for students with EBD may not reflect the most current knowledge about effective instruction. There is little focus on improving the academic status of this population in regular and special education classroom settings. The academic instruction these students receive is often far from engaging and often over-dependent on individual seatwork. At minimum, instruction for students with EBD should follow current best practices that the evidence suggests benefit most students. The following section reports on what research suggests constitutes effective instruction for students with EBD.

### **Effective Instructional Practices for Students with EBD: What the Research Shows**

Emerging evidence suggests that many of the academic characteristics associated with other students experiencing difficulties in learning to read (developmental delays and specific reading disabilities) are similar to those of students with EBD (Levy & Chard, 2001). However, assessment and intervention research for the EBD population has focused almost exclusively on social skill development and effective behavioural supports. Reviews of academic interventions for students with EBD (Coleman & Vaughn, 2000; Ruhl & Berlinghoff, 1992) indicate a scarcity of academic treatment-outcome studies. All academic intervention studies reviewed here involve some component of literacy instruction, indicating the pervasive concern about reading.

Pierce et al. (2004) reviewed 30 studies that used a variety of teacher-mediated interventions and found that they were successful across all academic subject areas. The majority of the studies focused on reading (50%). Although most of the interventions were implemented for a short period of time (the average length of intervention being 22 days), the authors found that overall, most (90%) teacher-mediated interventions were effective in improving the academic performance of students with EBD. Because a variety of interventions were used, it was difficult to find commonalities to define effective intervention. However, several studies suggest that providing the student with choice, using reinforcements, structuring academic tasks, and using contingency plans and sequential prompting were effective in improving the academic performance of students with EBD. Nevertheless, these findings should be interpreted with caution because the results were drawn from only a few studies and, in

most of studies, participant and program details were limited, thus restricting generalization (Pierce et al., 2004).

### *Effective Reading Instruction*

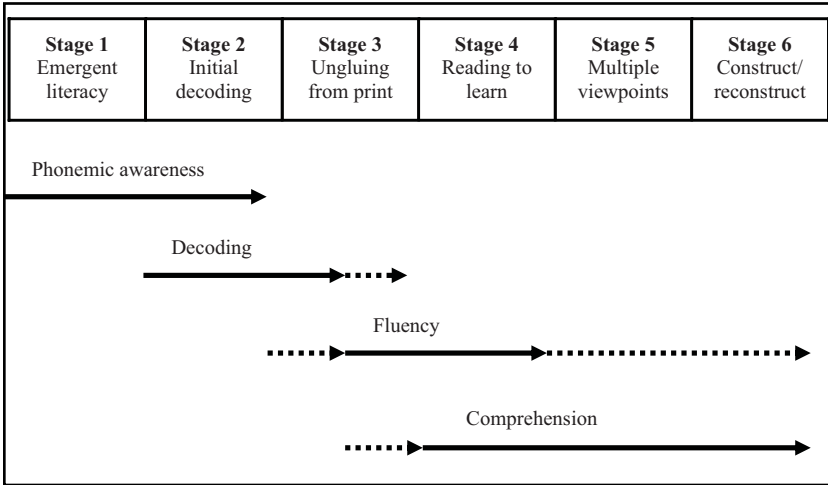
The teaching of reading has been a critical issue in education for almost a century. Research on the most effective means of instruction for promoting success in learning to read and comprehending text is ongoing. For the general population, there is now considerable agreement on the need for systematic and explicit instruction in phonological awareness, decoding, fluency, and comprehension (National Reading Panel, 2000). There is also a large body of research on effective instructional practices for students with other disabilities (e.g., learning disabilities); unfortunately this is not the case for students with EBD (Wehby, Lane, et al., 2003).

Reading interventions become a necessary component of reading instruction when students exhibit a significant delay in their ability to read. There are multiple causes of this delay that can act either independently or in combination. Developmental delays, dyslexia, learning disabilities, attention deficit (hyperactivity) disorder (ADD/ADHD), emotional/behavioural problems, and myriad other neurological, biological, and environmental factors can result in reading difficulties. In choosing the appropriate intervention it is crucial to understand the underlying causes and degree of difficulty, as well as the student's reading developmental stage. In Chall's (1996) model, there are six stages through which a reader progresses in order to become a fluent and critical reader. Each stage emphasizes a specific aspect of reading development which is necessarily achieved before progression to a subsequent stage. The developmental stage of the student indicates which dimensions of reading need to be targeted (Figure 1). Instruction can then be directed to the specific needs of the student.

Phonemic Awareness (PA) is the ability to perceive and manipulate the sounds in *spoken* language. It is evaluated and instructed by specific tasks such as phoneme isolation, identification, categorization, blending, segmentation, and deletion. Phonemes are the smallest units in spoken language. Effective PA instruction includes explicit and systematic instruction in phoneme manipulation. Small-group teaching with a focus on one or two phoneme types is considered to be the most effective instructional method (National Reading Panel, 2000).

Phonemic awareness and letter knowledge are the two best predictors of how well students will learn to read (National Reading Panel, 2000). Pho-

**Figure 1**  
**Stages of Reading Development**  
*(based on Chall, 1996) and Focus of Instruction*



nemic awareness is necessary before children can make use of letter-sound knowledge. The decoding of words is enhanced by explicit instruction in letter-sound relationships (phonics) and the major word chunks such as affixes, base words, blends, and diagraphs. In addition, students need multiple opportunities to sound out words (Pressley, 2000).

Fluency in reading is the rapid, accurate, and expressive reading of text. Fluency develops as the need for decoding decreases and more sight words are accumulated. Fluency aids in comprehension as more memory is freed from the process of decoding. Two main types of fluency instruction (unassisted and assisted) have been shown to improve reading fluency (Kuhn & Stahl, 2003). Repeated reading is the independent (unassisted) strategy most commonly used to improve fluency. Assisted fluency instructional strategies provide a model of fluent reading. Both methods have been shown to improve fluency in readers in terms of speed and accuracy (automaticity), while assisted methods are more effective in improving expressive reading of text (prosody; Kuhn & Stahl, 2003).

Along the continuum of developing reading skills, fluency encompasses accurate word recognition and is foundational for higher-order reading skills such as reading comprehension (National Reading Panel, 2000). Early flu-

ency-based reading indicators can therefore be used as predictors of reading difficulties and to inform educational decisions and interventions in order to improve the reading outcomes of students identified as being at risk of reading difficulties (Good, Simmons, & Kameenui, 2001). In their longitudinal study, Good et al., examined the utility and predictive value of fluency measures of four cohorts from Kindergarten through Grade 3. The fluency-based indicators of foundational reading skills consistently indicated that students who scored low on one indicator were at serious risk of not attaining acceptable levels of performance (according to the Oregon Statewide Assessment) on subsequent measures. Prevention-oriented assessments, such as the fluency-based indicators in this study, can be used to inform instructional decisions to remediate reading difficulties in the early stages of reading development.

The ultimate purpose of reading is to gather meaning from text. Comprehension depends primarily on three variables: word-level skills, background knowledge, and comprehension strategies (Pressley, 2000). It follows that, in order to improve the level of comprehension, word-level decoding is critical (Kuhn & Stahl, 2003; Lovett, Lacerenza, & Borden, 2000; Pressley, 2000). Freeing memory from word identification allows for more of the working memory capacity to be devoted to comprehension.

A firm foundation in reading should be established in the early primary grades in order for further growth and development. Without this foundation, “Matthew effects” (Stanovich, 1986) mean that poor readers will get poorer, while good readers get better. This theoretical framework emphasizes the effects of reading on cognitive development; good readers read more frequently and read increasingly difficult text, further improving their ability to read, while the reverse is true for struggling readers. Readers who are experiencing difficulties do not advance at the same rate. Because reading is difficult, they seldom read and therefore do not get the same decoding practice and opportunities for sight word acquisition. The struggling reader is further challenged when confronted with relatively more difficult text. They are less likely to develop the automaticity (speed and word recognition) that is essential to becoming an accomplished reader. If unresolved, this limitation will mean that struggling readers are at risk of falling increasingly further behind their normally achieving peers as they progress through school.

### *Reading Instruction for Students with EBD*

Reading instruction for students with EBD should be based on the same multidimensional framework established by the National Reading Panel (2000). However, given the unique social, emotional, and behavioural characteristics

of students with EBD, their specific needs must be understood and addressed before an effective reading program can be developed. Little is known about the demographic characteristics of students with comorbid EBD and reading disorders and few intervention studies assess academic outcomes (Pierce et al., 2004). The published research on reading interventions for students with emotional and behavioural problems is particularly sparse for the intermediate and senior grades (Strong et al., 2004). In their review of the literature between 1975 and 1998 regarding reading interventions for elementary students with EBD, Coleman and Vaughn (2000) found only eight publications that met their selection criteria, most of which were conducted with early primary children. A review of these publications yielded two commonalities:

1. Five of the eight studies used a single-subject design (the remainder were group design), suggesting that this is the design of choice among researchers for this population.
2. Three of the eight studies assessed the impact of peer tutoring on the reading and social behaviour of students with EBD, and provided evidence that peer tutoring may be an effective practice for this group, especially in the elementary grades.

All three tutoring studies were cross-age tutoring interventions, and two of them had students with EBD as both tutors and tutees. In all three studies, improvements in reading skills were found on various reading measures (sight word acquisition, standardized reading tests, and reading inventories).

Because Coleman and Vaughn (2000) found so few publications describing reading interventions for students with EBD, they supplemented and extended their findings by conducting a 2-hour focus group with eight elementary school teachers. These teachers taught reading to students with EBD for at least 60 minutes each day. The results of the focus group discussion yielded six themes: the emotional variability demonstrated by the students with EBD, an issue related to a fear of failure and lack of trust, the need to keep students engaged, instructional practices, assessment and monitoring, and daily reading. The teachers agreed that because students with EBD were on a variable emotional level from day to day, the progress in their reading was irregular, rather than steady. Also, the teachers indicated that a fear of failure was so ingrained in many of these students that they would often refuse to even attempt to read, unless they felt certain to succeed. Trust building was also considered to be an essential precursor to instruction of any type (Coleman & Vaughn, 2000; Weaster, 2004). The teachers stressed that if students with EBD were to succeed at reading, they would have to maintain a high level of interest and engagement. In terms of instructional practices, the teachers reinforced the



findings on the effectiveness of peer tutoring. They reported that peer tutoring was highly motivational for students with EBD because they considered it to be a worthwhile, real-world application of reading. In addition, the teachers reported that it was important to provide ongoing monitoring of students' progress. The greatest impact occurred when this monitoring was done by the students themselves. Finally, several teachers agreed that it was important to provide the opportunity to read, every day, allowing students to choose their reading material. These six themes may be helpful for guiding and structuring an effective reading program for students with EBD.

The factors posited by Wehby, Lane, et al. (2003) that explain why there is a lack of academic instruction for students with EBD might also contribute to a framework with which to start. With a clear understanding of the academic needs of students with EBD and of best instructional practices for this population, effective programs can be designed to meet the specific academic needs of this group. For example, capturing and maintaining the attention of students with EBD is often pivotal in their learning. Instruction should therefore be highly engaging if disengagement and possible behavioural problems are to be avoided. Furthermore, academic instruction needs to take place in conjunction with behavioural programs. Although beyond the scope of this paper, school-wide interventions are likely to be most effective, with the majority of children and adults within the entire school working together to create a proactive, consistent, and positive environment (Bowen, Jenson, & Clark, 2004).

Pre-service and in-service teachers require clear and feasible guidelines about best instructional practices for students with EBD, updated by current findings as the research becomes available. Similarly, the six themes identified by Coleman and Vaughn (2000) are specific to the reading instructional needs of students with EBD. Programs that consider and incorporate these dimensions will likely advance the academic status of these students. Furthermore, instruction that fosters the success of the student, permits considerable student input and control, and is perceived as having real-world value will likely enhance student learning. It is clear, however, that more research is needed to extend the knowledge base about effective academic instruction for students with EBD.

## **Summary**

Data on the nature of the relationship between academic achievement and behaviour and on effective instructional programs for students with EBD is limited. Table 1 categorizes and summarizes the research reviewed in this paper – studies that contribute to our understanding of the academic achieve-

ment of students with EBD and of interventions that might enhance their achievement, especially in reading.

There has been very little recent empirical research on the academic achievement of students with EBD and few on effective academic interventions, none of which is Canadian. Dworet and Rathgeber (1998) highlighted the diversity of approaches to EBD across Canada, and suggested that the large amount of variation from province to province may increase the need for multi-site Canadian studies. Most of the intervention studies used a baseline approach, and none used a traditional randomized control group experimental design, perhaps because it is becoming increasingly difficult to implement this design in schools. All of the sample sizes were small, ranging in size from three to eight participants. None of the reading intervention programs targeted all the areas recommended by the National Reading Panel (2000) as essential components of effective reading instruction. Nevertheless, the results of these intervention studies are remarkably consistent in showing improvements in the reading domain, even with minimal and perhaps not optimal academic instruction.

## **Conclusions**

Despite the strong relationship between achievement and behaviour, there remains a lack of research on effective academic instruction for students with EBD. Levy and Chard (2001) suggest that in the absence of such research, we should do, at a minimum, what the current research says about effective instruction. With reading, for instance, all students, including those with EBD, can benefit from systematic and explicit instruction in phonological awareness, word identification, fluency, vocabulary, and comprehension. Recognizing that deficits in language may be negatively influencing the behaviour and academic life of students with EBD is vital to creating effective instructional programs. Furthermore, these programs need to be highly engaging if they are to be successful. Given the poor outcomes for this population, it is urgent that literacy instruction become an integral part of their intervention.

In drawing conclusions, it may be helpful to acknowledge the limitations of this review. It has provided an update on the research on academic achievement of students with EBD by reviewing studies published between 2001 and 2007, and by merging this research with the findings that describe current instructional approaches in use with students with EBD and those that describe most effective instructional practices. While this is not an exhaustive review

**Table 1**  
**Research regarding the academic achievement of students with EBD**

Citation	Study Type	Sample /Study Characteristics	Purpose of Study	Findings
Research showing the relationship between academic achievement and behaviour				
Morgan et al. (in press)	Longitudinal study	<ul style="list-style-type: none"> <li>• used a multi-level logistic regression model</li> <li>• data from Early Childhood Longitudinal Study – Kindergarten Class</li> </ul>	<ul style="list-style-type: none"> <li>• investigated the reciprocal relationship between behaviour and reading difficulties (between grade 1 and grade 3)</li> </ul>	<ul style="list-style-type: none"> <li>• children with reading problems in grade 1 were <i>significantly</i> more likely to display behaviour problems (poor task engagement, self-control, externalizing, and internalizing behaviours), in grade 3</li> <li>• Children with poor task engagement in grade 1 were more likely to experience reading problems in grade 3</li> </ul>
Trzeshewski et al., 2006	Longitudinal twin study	<ul style="list-style-type: none"> <li>• E-Risk Longitudinal Twin Study data (1994 and 1995 cohorts)</li> <li>• Investigates how genetic and environmental factors affect development</li> <li>• 5- and 7-year-olds</li> </ul>	<ul style="list-style-type: none"> <li>• to investigate the association between reading achievement and antisocial behaviour and the role of genetic and environmental factors in both</li> </ul>	<ul style="list-style-type: none"> <li>• for boys, behaviour and reading problems were best explained by environmental factors and a reciprocal causation model; poor reading led to antisocial behaviour and vice versa</li> <li>• the relation between reading achievement and ADHD is genetically based</li> <li>• for girls, antisocial behaviour led to reading problems (and not vice versa)</li> </ul>
Research on the academic achievement of students with EBD				

Anderson et al., 2001	Academic achievement assessment (longitudinal study)	<ul style="list-style-type: none"> <li>• <math>n = 61</math></li> <li>• five year longitudinal study</li> </ul>	<ul style="list-style-type: none"> <li>• to compare the academic progress of students with LD to that of students with EBD</li> </ul>	<ul style="list-style-type: none"> <li>• both groups initially below the norm (particularly in math and reading)</li> <li>• only the LD group made significant progress in reading – even though the EBD group received more special education services</li> </ul>
Barriga et al., 2002	Academic achievement assessment	<ul style="list-style-type: none"> <li>• <math>n = 58</math> (41 boys, 17 girls)</li> <li>• adolescents (11 to 19 years)</li> <li>• alternative school for students with EBD</li> </ul>	<ul style="list-style-type: none"> <li>• to investigate the relationship between behaviour and academic achievement, and the unique role of attention problems</li> </ul>	<ul style="list-style-type: none"> <li>• externalizing (attention, delinquency, aggression) and internalizing (withdrawal, somatic complaints) behaviours significantly correlated with academic achievement</li> <li>• relationships were mediated by attention problems</li> </ul>
Nelson et al., 2004	Academic achievement assessment	<ul style="list-style-type: none"> <li>• <math>n = 155</math> (126 boys, 29 girls)</li> <li>• a cross-sectional study</li> <li>• Kindergarten – Grade 12 students</li> </ul>	<ul style="list-style-type: none"> <li>• to assess the academic achievement of students with EBD (relative to a norm group)</li> </ul>	<ul style="list-style-type: none"> <li>• academic deficiencies across all areas (math, reading and written language)</li> <li>• reading and written language deficits remained constant</li> <li>• externalizing behaviours were related to achievement</li> </ul>
Reid et al., 2004	Meta-analysis	<ul style="list-style-type: none"> <li>• literature search (1961-2000)</li> <li>• <math>n = 25</math> (studies)</li> <li>• <math>n = 2,486</math> (participants)</li> </ul>	<ul style="list-style-type: none"> <li>• to report on the academic status of students with EBD</li> </ul>	<ul style="list-style-type: none"> <li>• a moderate to large overall difference in academic performance of students with EBD</li> <li>• 75% of students with EBD scored below the mean of the contrast group</li> <li>• students with EBD performed below peers in all academic domains (with greatest deficits in math and spelling)</li> </ul>
Trout et al., 2003	Literature review (1961-2000)	<ul style="list-style-type: none"> <li>• <math>n = 70</math></li> </ul>	<ul style="list-style-type: none"> <li>• to assess (a) the characteristics of the student, (b) their functioning level, and (c) trends in research</li> </ul>	<ul style="list-style-type: none"> <li>• none of the data sets reported students with EBD achieving above grade level</li> <li>• 32 of 35 reports (91%) showed students with EBD were academically deficient (particularly in reading and math)</li> </ul>

Citation	Study Type	Sample /Study Characteristics	Purpose of Study	Findings
Current instructional practices				
Vaughn et al., 2002	Literature review (1975-2000)	<ul style="list-style-type: none"> <li>n = 16</li> </ul>	<ul style="list-style-type: none"> <li>to synthesize observational studies conducted during reading with students with LD and EBD</li> </ul>	<ul style="list-style-type: none"> <li>reading instruction was generally poor</li> <li>most time was spent on waiting and seatwork</li> <li>little on direct instruction and actual reading of text</li> </ul>
Wenby, Lane, et al., 2003	Observational study	<ul style="list-style-type: none"> <li>reviewed current academic instructional practices for students with EBD</li> </ul>	<ul style="list-style-type: none"> <li>to explain current instructional practices</li> </ul>	<ul style="list-style-type: none"> <li>proposed four factors that limit the academic instruction of students with EBD in the classroom</li> </ul>
Academic Intervention Studies				
Coleman & Vaughn, 2000	Literature review (1975-1998)	<ul style="list-style-type: none"> <li>a literature search</li> <li>focus group of 8 teachers who teach reading to students with EBD</li> </ul>	<ul style="list-style-type: none"> <li>to review the literature on reading intervention studies for elementary students with EBD</li> </ul>	<ul style="list-style-type: none"> <li>eight studies that met their criteria</li> <li>a focus group supplemented and extended the information base – identified six themes</li> </ul>
Lane et al., 2002	Intervention study	<ul style="list-style-type: none"> <li>n = 7 (4 boys, 3 girls)</li> <li>Grade 1</li> <li>identified as at-risk for antisocial behaviour</li> </ul>	<ul style="list-style-type: none"> <li>to examine the effect of a supplemental early literacy program</li> </ul>	<ul style="list-style-type: none"> <li>increases in word attack skills (all students)</li> <li>lower levels of disruptive behaviours in the classroom</li> </ul>
Levy & Chard, 2001	Literature review	<ul style="list-style-type: none"> <li>a literature review of reading instruction for students with EBD</li> </ul>	<ul style="list-style-type: none"> <li>to review early reading instruction and to identify how students with EBD are taught to read</li> </ul>	<ul style="list-style-type: none"> <li>identified existing research on best instructional practices</li> <li>showed the discontinuity between best practices and how students with EBD are currently taught to read</li> </ul>

Pierce et al., 2004	Literature review	<ul style="list-style-type: none"> <li>• 30 studies using a variety of teacher-mediated interventions were reviewed</li> </ul>	<ul style="list-style-type: none"> <li>• to review the literature on teacher-mediated interventions for children with EBD and the associated academic outcomes</li> </ul>	<ul style="list-style-type: none"> <li>• participant and program characteristics were poorly defined</li> <li>• effective instruction includes: choice, reinforcements, structured tasks, contingency plans, sequential prompting</li> <li>• teacher-mediated interventions were successful across all subject areas</li> </ul>
Scott & Shearer-Lingo, 2002	Intervention study	<ul style="list-style-type: none"> <li>• <math>n = 3</math> (boys)</li> <li>• Grade 7</li> <li>• in a segregated EBD classroom</li> </ul>	<ul style="list-style-type: none"> <li>• to identify the effects of fluency instruction on fluency and behaviour</li> </ul>	<ul style="list-style-type: none"> <li>• all students showed an increase in fluency by the end of the intervention</li> <li>• on-task behaviour also improved for all three students</li> </ul>
Strong et al., 2004	Intervention study	<ul style="list-style-type: none"> <li>• <math>n = 7</math> (boys)</li> <li>• Grades 7 and 8</li> <li>• in a self-contained school for students with EBD</li> </ul>	<ul style="list-style-type: none"> <li>• to determine the effect of <i>Corrective Reading</i> and repeated reading on fluency</li> </ul>	<ul style="list-style-type: none"> <li>• increase in fluency measures</li> <li>• no change in disruptive or aggressive behaviour (observed, not measured)</li> </ul>
Wehby, Falk, et al., 2003	Intervention study	<ul style="list-style-type: none"> <li>• <math>n = 8</math> (boys)</li> <li>• 7-10 years old</li> <li>• in a self-contained school for students with EBD</li> </ul>	<ul style="list-style-type: none"> <li>• to investigate the effects of academic intervention on achievement and behaviour</li> </ul>	<ul style="list-style-type: none"> <li>• gains in reading (nonsense word fluency, sound naming, blending, and segmenting)</li> <li>• some improvement in on-task behaviour, but no improvement in inappropriate behaviour</li> </ul>

or a meta-analysis, it does demonstrate the need for research that focuses on meeting the learning needs of students with EBD as well as their social and behavioural needs.

### *Future Implications*

Through this review of the literature, five conclusions can be drawn:

1. A high proportion of students with EBD have concomitant academic and reading deficits.
2. Currently the academic instruction of this population is inadequate.
3. Systematic academic instruction, tailored to meet the specific needs of these students can result in improved academic performance.
4. Research is needed that assesses the specific academic needs of students with EBD and the effectiveness of interventions designed expressly to address those needs.
5. More research is required in the Canadian context.

Although a high proportion of students with EBD have coexisting academic and reading deficits, the intervention studies have shown that with specific and systematic academic instruction tailored to meet the needs of the students and ensure their success, academic performance can and does improve. Furthermore, the results indicate that interventions targeting academic (e.g., reading) deficits for students with EBD, can have positive collateral effects on behaviour. Even though the results are generally more varied, several studies have shown at least modest increases in task engagement and decreases in problematic behaviour (Lane et al., 2002; Scott & Shearer-Lingo, 2002; Wehby, Falk, et al., 2003). Clearly, however, the research base on treatment-outcome effects of academic and reading interventions needs to be expanded. With further research, instructional strategies such as peer tutoring may be shown to be particularly effective for and acceptable to students with EBD.

Students with emotional and behavioural disorders have specific needs in the academic, social, and behavioural domains. The optimal intervention program for students with EBD incorporates two interventions simultaneously: behavioural/social interventions and those that target the academic deficits of the student. Effective instruction that takes into account the dichotomous needs of the student with EBD, can have positive academic and behavioural outcomes. From this review, four specific recommendations can be made. Interventions need to be: (a) engaging, (b) based on the individual needs of the student, (c) informed by research, and (d) transitional, in that they help

the student progress from a segregated classroom setting back into a regular classroom. It is possible that with an emphasis on effective instruction, academic achievement and student success, there will also be positive behavioural outcomes. Furthermore, because the achievement level of students with EBD tends to decrease over time while their behaviour becomes more resistant to change, early and effective intervention is imperative.

## References

- Achenbach, T. M. (1991). *Manual for the child behavior checklist/4-18 and 1991 profile*. Burlington, VT: University of Vermont, Department of Psychology.
- Adelman, H. S., & Taylor, L. (2001). Enhancing motivation for overcoming learning and behavior problems. *Journal of Learning Disabilities, 16*, 384-392.
- Anderson, J., Kutash, K., & Duchnowski, A. (2001). A comparison of academic progress of students with EBD and students with LD. *Journal of Emotional and Behavioral Disorders, 9*, 81-144.
- Barriga, A. Q., Doran, J. W., Newell, S. B., Morrison, E. M., Barbetti, V., & Robbins, B. D. (2002). Relationship between problem behaviors and academic achievement in adolescents: The unique role of attention problems. *Journal of Emotional and Behavioral Disorders, 10*, 233-240.
- Bowen, J. M., Jenson, W. R., & Clark, E. (2004). *School-based interventions for students with behavior problems*. New York: Kluwer Academic/Plenum Publishers.
- Chall, J. S. (1996). *Stages of reading development* (2<sup>nd</sup> ed.). Fort Worth, TX: Harcourt-Brace.
- Coleman, M. C. (1996). *Behavior disorders: Theory and practice* (3<sup>rd</sup> ed.). Boston: Allyn and Bacon.
- Coleman, M., & Vaughn, S. (2000). Reading interventions for students with emotional/behavioral disorders. *Behavioral Disorders, 25*, 93-104.
- Couthino, M. (1986). Reading achievement of students identified as behaviorally disordered at the secondary level. *Behavioral Disorders, 11*, 200-207.



- Dworet, D., & Rathgeber, A. (1998). Confusion reigns: Definitions of behaviour exceptionalities in Canada. *Exceptionality Education Canada*, 8, 3-19.
- Glassberg, L. A., Hooper, S. R., & Mattison, R. E. (1999). Prevalence of learning disabilities at enrollment in special education students with behavioral disorders. *Behavioral Disorders*, 25, 9-21.
- Good, R. H., Simmons, D. C., & Kameenui, E. J. (2001). The importance of decision-making utility of a continuum of fluency-based indicators of foundational reading skills for third-grade high-stakes outcomes. *Scientific Studies of Reading*, 5, 257-288.
- Hinshaw, S. P. (1992). Externalizing behavior problems and academic underachievement in childhood and adolescence: Causal relationships and underlying mechanisms. *Psychological Bulletin*, 111, 127-155.
- Hutchinson, N. L. (2007). *Inclusion of exceptional learners in Canadian schools: A practical handbook for teachers* (2<sup>nd</sup> ed.). Toronto, ON: Prentice Hall.
- Kuhn, M. R., & Stahl, S. A. (2003). Fluency: A review of development and remedial practices. *Journal of Educational Psychology*, 95, 3-21.
- Laffey, J. M., Espinosa, L., Moore, J., & Lodree, A. (2003). Supporting learning and behavior of at-risk young children: Computers in urban education. *Journal of Research on Technology in Education*, 35, 423-440.
- Lane, K. L., Wehby, J. H., Menzies, H. M., Gregg, R. M., Doukas, G. L., & Munton, S. M. (2002). Early literacy instruction for first-grade students at-risk for antisocial behavior. *Education and Treatment of Children*, 25, 438-458.
- Levy, S., & Chard, D. (2001). Research on reading instruction for students with emotional and behavioural disorders. *International Journal of Disability, Development and Education*, 48, 429-444.
- Lewis, T. J., & Sugai, G. (1999). Effective behavior support: A systems approach to proactive school-wide management. *Focus on Exceptional Children*, 31, 1-25.
- Lovett, M. A., Lacerenza, L., & Borden, S. L. (2000). Putting struggling readers on the PHAST track: A program to integrate phonological and strategy-based remedial reading instruction and maximize outcomes. *Journal of Learning Disabilities*, 33, 458-476.

- Morgan, P. L., Farkas, G., Tufis, P. S., & Sperling, R. S. (in press). Are reading and behavioral problems risk factors for each other? *Journal of Learning Disabilities*.
- National Reading Panel. (2000). *Report of the National Reading Panel: Reports of the subgroups*. Washington, DC: National Institute of Child Health and Human Development Clearinghouse.
- Nelson, J. R., Benner, G. J., Lane, K., & Smith, B. W. (2004). Academic achievement of K-12 students with emotional and behavioral disorders. *Exceptional Children, 71*, 59-73.
- Pierce, C. D., Reid, R., & Epstein, M.H. (2004). Teacher-mediated interventions for children with EBD and their academic outcomes: A review. *Remedial and Special Education, 25*, 175-188.
- Pressley, M. (2000). What should comprehension instruction be the instruction of? In M. Kamil, P. Rosenthal, P. D. Pearson & R. Barr (Eds.), *Handbook of Reading Research, Vol. 3*, (pp. 545-561). Mahwah, NJ: Erlbaum.
- Reid, R., Gonzalez, J. E., Nordness, P. D., Trout, A., & Epstein, M. H. (2004). A meta-analysis of the academic status of students with emotional/behavioral disturbance. *The Journal of Special Education, 38*, 130-143.
- Ruhl, K. L., & Berlinghoff, D. H. (1992). Research on improving behaviorally disordered students' academic performance: A review of the literature. *Behavioral Disorders, 17*, 178-190.
- Scott, T. M., & Shearer-Lingo, A. (2002). The effects of reading fluency instruction on the behavioral success of middle school students in a self-contained EBD classroom. *Preventing School Failure, 46*, 167-173.
- Stanovich, K. E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly, 31*, 360-407.
- Strong, A. C., Wehby, J. H., Falk, K. B., & Lane, K. L. (2004). The impact of a structured reading curriculum and repeated reading on the performance of junior high students with emotional and behavioural disorders. *School Psychology Review, 33*, 561-581.
- Trout, A. L., Nordness, P. D., Pierce, C. D., & Epstein, M. H. (2003). Research on the academic status of children with emotional and behavioral disorders: A review of the literature from 1961 to 2000. *Journal of Emotional and Behavioral Disorders, 11*, 198-210.

- Trzesniewski, K.H., Moffitt, T.E., Caspi, A., Taylor, A., & Maughan, B. (2006). Revisiting the association between reading achievement and antisocial behavior: New evidence of an environmental explanation from a twin study. *Child Development, 77*, 72-88.
- Vandergriff, L., & Rust, J. O. (1985). The relationship between classroom behavior and self-perception. *Education, 106*, 172-178.
- Vaughn, S., Levy, S., Coleman, M., & Bos, C. S. (2002). Reading instruction for students with LD and EBD: A synthesis of observational studies. *The Journal of Special Education, 36*, 2-13.
- Weaster, K. (2004). Reading and behavioral disorders: Searching for meaning under the streetlight. *Intervention in School and Clinic, 40*, 59-62.
- Weber, K., & Bennett, S. (2004). *Special education in Ontario schools* (5th ed.). Palgrave, ON: Highland Press.
- Wehby, J. H., Falk, K. A., Barton-Arwood, S., Lane, K. L., & Cooley, C. (2003). The impact of comprehensive reading instruction on the academic and social behavior of students with emotional and behavioral disorders. *Journal of Emotional and Behavioral Disorders, 11*, 225-238.
- Wehby, J. H., Lane, K. L., & Falk, K. B. (2003). Academic instruction for students with emotional and behavioral disorders. *Journal of Emotional and Behavioral Disorders, 11*, 194-197.
- Wilkinson, G. S. (1993). *Wide range achievement test* (3<sup>rd</sup> ed.). Wilmington, DE: Wide Range.

### Author's Note

Correspondence concerning this article should be addressed to Jenn de Lugt, Faculty of Education, Graduate Studies and Research, Queen's University, Kingston, ON, K7M 5R7.  
Email: 1ljds@queensu.ca.