

# ***Research in Reading Interventions for Students with Emotional and Behavioral Disorders***

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## ***Abstract***

The purpose of this study is to examine research trends in reading intervention research for students with emotional and behavioral disorders (EBD). Thirty studies published between 1990 and 2010 that met all pre-established criteria were included in the descriptive analyses. The authors examined the literature to assess the following variables across time: (a) participant characteristics, (b) participant placements, (c) study type used, (d) outcome measures, and (e) intervention areas. Results indicated that researchers mostly used single-subject designs; the main intervention area in most of the studies was fluency; most of the studies were conducted with participants from resource room models and the number of studies on reading interventions for students with EBD was overall very limited.

## ***Research in Reading Interventions for Students with Emotional and Behavioral Disorders***

Children and adolescents with emotional and behavioral disorders (EBD) exhibit both academic and behavioral problems (Epstein, Kinder, & Bursuck, 2009). Aggressive and disruptive behaviors, disobedience (Maughen, Pickles, Hagell, Rutter, & Yule, 2006), tantrums, and disruptive verbalizations (Mayfield, Golston, Walsh, Reboussin, Sergeant, & Hickman, 2005) are characteristics of students with EBD. In addition, students with EBD present poor academic skills which result in low grades (Wagner, 2005) and low graduation rates (Malmgren & Leone, 2008). Furthermore, students with EBD are less likely to be members of a club or participate in social groups; their grade point averages are lower than those of students with other disabilities and dropout rates are much higher (55%) than for any other disability category (Wagner, 2005).

Although students with EBD have both academic and behavioral problems, researchers have historically focused more intervention research on behavioral problems than academic problems (Webby, Faulk, Barton-Ardwood, Lane, & Cooley, 2003). It has been well documented that research on the academic status of students with EBD is very limited (Epstein et al., 2009). For example, Miller, Miller, & Wheelen, (2009) examined the status of experimental research on interventions designed to modify the behaviors of children with EBD from 2000 to 2003, and found that the most frequently used dependent variable was appropriate and inappropriate behavior both in school and social interactions. In another study, Mooney, Epstein, Reid, and Nelson (2003) examined trends in academic intervention research for students with EBD and

found that only 55 studies have been conducted since 1985.

### *Theoretical Framework*

It is important to note that students with EBD demonstrate significant difficulties in reading (Coleman & Vaughn, 2000). According to Wagner (2005), students with EBD were approximately 2.2 grade levels behind in reading. Furthermore, students with reading difficulties present both depression and anxiety than those with typical reading skills and students who have poor reading in mid to late adolescence would have increased risk for internalizing behaviors (Carr & Punzo, 2003).

One method of addressing the academic problems of students with EBD is to implement effective interventions (Mooney et al., 2003). Even though students with EBD exhibit significant academic delays, little research has addressed the effect of academic interventions for these students (Coleman & Vaughn, 2000; Falk & Wehby, 2001). Furthermore, relatively very few studies have addressed the effect of reading interventions for students with EBD specifically (Coleman & Vaughn, 2000).

Several researchers have reviewed academic status of students with EBD over the years. For example, Epstein and his colleagues examined research on the academic status of adolescents with EBD and found 15 articles met the criteria for inclusion to their study (Epstein et al., 2009). However, the authors reviewed the literature only for the academic status of adolescents with EBD and it was not focused especially on trends in reading intervention for students with EBD. In another study, Mooney and his colleagues examined the status and trends in academic intervention research for students with EBD (Mooney et al., 2003). Results of this study indicated that settings were generally special education classrooms, researchers were mostly used single-subject design, and there has been a decline in number of studies published.

Trout, Nordness, Pierce, and Epstein (2003) conducted an exhaustive examination of the current state of the literature on the academic status of students with EBD. The authors examined the literature to evaluate student characteristics, placement settings, academic subject areas, and measures used to evaluate academic achievement. In addition, Trout et al. (2003) examined the trends in the research on academic status of students with EBD and found that the number of articles assessing the academic status of students with EBD has rapidly increased. Although this study was a comprehensive examination of the literature on the academic status of students of students with EBD, Trout et al. (2003) did not focus on a specific academic skill area such as reading.

Few studies have reviewed the literature on reading intervention for students with EBD. Coleman and Vaughn (2000) reviewed the literature and provided a summary of reading intervention research with elementary school students with EBD and found eight articles that met their selection criteria. Although previous reviews have concentrated on the academic status of students with EBD, additional reviews are needed for several reasons. First, none of the reviews have focused on all school levels. Second, most of the reviews published have focused on academics in general, not reading specifically. Finally, none of the reviews have reported

National Reading Panel (NRP) reading components in their results. Reporting these components in reviews can provide the opportunity to understand which components of reading more research is needed (Browder & Shear, 2003).

This study makes several contributions to the literature addressing research involving reading intervention for students with EBD. First, investigation of research trends in reading interventions research summarizes what has been done in the past and suggests what can be done in the future. For example, it has become obvious that students with EBD have reading deficiencies but it is not widely apparent what specific skills they lack (Trout et al., 2003). Therefore, it is possible to conclude that future studies should examine specific skill areas to determine their significance. Second, the need to consider the effect of such characteristics as outcome measures, and reading skills on academic success is fundamental to improving future research. For example, according to the 32<sup>nd</sup> Annual Report to Congress on the Implementation of Individuals with Disabilities Education Act (U.S. Department of Education, 2010), 21% of the students with EBD received all their instruction in regular education classrooms, which is more than the percentage of the students with EBD who received their education in special education classrooms. Therefore, to serve students with EBD better, it is crucial to realize unique characteristics of this population and determine the direction of future research in light of these facts. Finally, this study establishes a baseline for understanding what already exists in the relevant literature. It is our hope this information will be used to help determine the direction of future research in this important area.

Despite the importance of research published since 1961 on the academic status of students with EBD, several questions about student characteristics, and specific academic skills remain unanswered, for example, it is obvious that students with EBD have reading deficiencies but it is not apparent what specific skills they lack (Trout et al., 2003). Therefore, the purpose of this study is to examine the trends in reading intervention research for students with EBD. Specifically, six questions directed this study. Some of the questions were also used in Mooney et al.'s (2003) study which examined the status of and trends in academic intervention research for students with EBD. Additional questions were added by the researchers. These six resulting questions are:

1. What participant characteristics were described in the reading interventions literature?
2. Where did studies take place?
3. What design types were used?
4. What school levels were targeted?
5. What outcome measures were targeted?
6. What types of intervention have been employed?

### ***Method***

#### *Selecting Articles*

Studies were identified by searching computer databases and a hand search of all issues of the *Behavioral Disorders*, *Journal of Emotional and Behavioral Disorders*, *Remedial and Special Education*, *Exceptional Children* and *Journal of Special Education* from 1990 to 2010. The authors checked the titles and abstracts of every issue of these journals between the specified

dates. Electronic databases utilized in the search included Educational Resources Information Center (ERIC), Academic Search Elite and PsycINFO. The following keywords were used to frame the search: (Emotional disturbance OR behavioral disorder OR emotional and behavioral disorders) AND (reading). Moreover, previous studies that reviewed the literature on any type of academic intervention research for students with EBD were identified and reviewed. Finally, the reference lists of all included articles were searched. In addition to 14 articles found by the hand search, more than 500 titles were initially identified for review by the electronic database. However, because the authors searched multiple databases, many of the initial titles were duplicates and irrelevant to this research interest. When these duplicates and irrelevant titles were eliminated, 68 articles were remained. Abstracts of these 68 articles were read and coded by one of the authors. In addition, the authors sent a-mails to the editors of the journals in which the authors did hand search in order to inquire about in-press articles to be sure that the review included all articles relevant to the topic. All of the editors responded e-mails and stated that there were no relevant articles in press. Finally, articles from the electronic database search were included in the review if they met each of the following criteria:

1. Participants were students who were receiving special education services under the category of EBD.
2. Article was published in a peer-reviewed journal.
3. At least one of the dependent variables had to be an academic measure of reading skill.
4. Publication data was between 1990 and 2010.

### *Procedure*

A coding form was developed to record information presented in the articles that were chosen. Articles were coded by the first author. The coding procedure was similar to that used by Mooney et al. (2003).

### *Participants and Settings*

The following items were coded for participants:

- Sample size was categorized as the total number of participants for a given intervention type.
- Participant grade-level was coded as elementary, middle, or high school level. Elementary school was defined as Kindergarten through 5<sup>th</sup> grade, middle school as 6<sup>th</sup> through 8<sup>th</sup> grade, and high school was identified as 9<sup>th</sup> to 12<sup>th</sup> grade.
- Age of the participants was coded as range, mean, or exact age.
- Gender was categorized as all males, all females, both, or not identifiable.
- Race was categorized as reported or not reported. When reported, categories were: Caucasian, African American, Hispanic, Native American, Asian American, and other.

Setting in which data were collected will be categorized as:

- General education classroom
- Special education resource room

- Special education self-contained classroom
- Classrooms (Unspecified)
- Non-classroom school settings (e.g. lunchroom, courtyard)
- Separate special school, day school, or clinic
- Residential facility
- Home
- Other
- Not reported or clearly specified

### *Designs*

Research design were categorized as single-subject or group study.

### *Dependent Measure*

Dependent measures were coded as:

- standardized tests
- grades
- teacher ratings
- curriculum-based measurement (CBM).

### *Characteristics of Intervention*

Characteristics of intervention were coded as comprehension, fluency, phonics, phonemic awareness, vocabulary.

## **Results**

Of the 30 studies included in the review, 3 (10%) were published between 1990 and 2000, 12 (33%) were published between 2000 and 2005, and 15 (57%) were published between 2005 and 2010. The number of articles focusing on reading problems of students with EBD has increased between 2000 and 2010 and more than half of the studies were published in the last ten years.

Student age was reported in 28 (90%) of the studies. Of these, 18 (58%) included students 5 to 12 years old, 6 (19%) assessed students 12 to 16 years old, and 1 (3%) involved students in the 16 to 21 year old age range. Between 1990 and 2000, 3 (11%) of the studies included elementary school students and 1 (4%) included middle school students. From 2000 to 2010, 5 (19%) studies included elementary age students and 2 (7%) included middle school students.

Race/ethnicity of the participants was reported in 10 (32%) studies. Of those, 7 (22%) studies were conducted with Caucasians, 10 (32%) were conducted with African Americans and 1 (3%) was conducted with Hispanics. None of the studies were conducted with Native Americans or Asian Americans. Two studies included only African American students. Trend analysis revealed that the number of studies reporting race/ethnicity of the participants increased over time. Finally, the analysis demonstrated that the number of studies including more than one race/ethnicity also increased over time.

Twenty-nine of the thirty studies reported intervention settings: 10 (33%) were conducted in self-contained classrooms, 8 (27%) in separate special schools, 6 (20%) in other settings (e.g. private room, summer camp), and 5 (17%) in special education resource rooms. Only 1 study (3%) assessed students in general education classrooms. Five studies (17%) were conducted in more than one setting.

Another finding is that single-subject research has been the commonly used design for conducting reading interventions for students with EBD. Of the 30 studies, 26 (87 %) used single subject designs, whereas only 4 (13%) used group designs. Even though single subject design is the predominantly used research design, it appears the kinds of research questions that can be answered using this design are limited (Mooney et al., 2003).

With regard to outcome measures, 11 (37%) used number of items answered or identified correctly, 9 (30%) used words read correctly per minute (WPM), 6 (20%) used standardized tests, 5 (17%) used comprehension questions answered correctly. One (3%) used number of assignments completed. Trend analysis revealed that researchers tend to use more than one outcome measure.

Most of the articles ( $n = 22$ ; 73%) focused on improving reading fluency of students with EBD. Reading comprehension skills were the focus of 9 (30%) articles. Five (17%) focused on phonemic awareness and an additional 2 (7%) focused on phonics. Only one (3%) study focused on vocabulary. Trend analysis revealed that studies focusing on phonemic awareness area were increasing over time. None of the studies published in the first two decades focused on phonemic awareness and all of the studies focusing on phonemic awareness were published in the last six years.

### *Discussion*

The aim of conducting a systematic review of research was to assess the current state of knowledge, identify trends, and offer suggestions for future intervention research aimed at improving reading achievement for students with EBD. Several previous studies have reviewed the literature on the academic status of students with EBD in terms of participant characteristics, placements, and outcome measures. However, areas of reading intervention have not previously been examined. The resulting study demonstrates several findings characterizing reading intervention research for students with EBD.

There are four major findings from the present study. First, the results of the analyses, consisted with earlier research by Coleman and Vaughn (2000), showed that research on reading interventions for students with EBD is very limited. Using broad search criteria, which included studies targeting all school age children served in both public and non-public placements, this search netted only 30 studies in the broad category of reading. Conversely, Lingo, Staton, and Jolivet (2006) published a review of 27 intervention studies for students with learning disabilities focusing on reading comprehension alone.

Another issue is the student characteristics described in the literature. Findings of this study indicated that only a few studies reported race of the students with EBD. Although students of minority status identified with EBD constitute more than one third of the EBD population (U.S. Department of Education, 2010), these students are not represented in reading intervention studies. Moreover, only three studies concentrated solely on minority students. The second issue on student characteristics is gender. The results of the analysis, consistent with the earlier research by Mooney et al. (2003), revealed that no studies focused solely in female populations and most of the studies included males. Understanding the differences between male and female students is a crucial factor for answering academic needs of all students (Trout et al., 2003). Most of the studies examining young adults with disabilities clarify the significance of gender as a differentiating variable in educational outcomes (Williams & Mcgee, 2004). As Trout et al. (2003) noted, without a separate analysis of academic achievement by race and gender, it is difficult to find out whether there are some differences exist within these students in terms of gender and race.

The third noteworthy finding is about placement settings where interventions implemented. Similar to Trout et al.'s (2003) findings, the authors found that majority of the research on reading interventions for students with EBD have been conducted outside the general education sweepings. Almost half of the students with EBD (i.e. 48%) are educated in general education settings for 40% or more of the typical school day. On the other end of continuum, 18% are still being educated in completely segregated settings (U.S. Department of Education, 2010). Unfortunately, just five of the studies included in this review were conducted with participants from resource room models and only one study involved participants served primarily in general education settings.

As schools across the country are being mandated by IDEA to include students with EBD in the regular education environment to the greatest extent possible, the need for interventions that will easily transfer to general education settings can only grow. The underrepresentation of participants being served in general education environments is a limiting factor in the utility of the findings reported in this review since the generalizability of findings across vastly different settings is a tenuous prospect. The inordinate number of interventions that were carried out with participants working independently or in a one-on-one setting may also limit the generalizability of findings, particularly to general education settings.

The fourth finding is about design and dependent measures. The results of this study displayed that single subject was the most commonly used study type. This finding is similar to those reported by Mooney et al., (2003). Single subject research is a scientific methodology used to define fundamental principles of behavior and constitute evidence-based practices (Continho, 2006). Even though single subject research design is used commonly, it is not possible to answer all the questions (Maughan et al., 2006). Therefore, researchers should use group designs as well as single subject designs.

The final finding is about the reading intervention area. According to National Reading Panel (NRP, 2010), there are five essential components of reading instruction: (a) phonemic awareness, (b) phonics, (c) fluency, (d) vocabulary, and (e) comprehension. Each of these areas has an

important role on improving reading achievement of students with disabilities. Results of our analysis showed that most of the studies focused on fluency. For example, vocabulary is an important component of reading comprehension (Fuchs, Fuchs, & Kazdan, 2009). While vocabulary is an important component of reading comprehension, none of the studies conducted with students with EBD has primarily focused on vocabulary. Therefore, more research is needed on other areas such as phonics and vocabulary.

In conclusion, the researchers would agree with Coleman and Vaughn's (2000) earlier observation that a "dramatic need" still exists for research on effective reading interventions for students with EBD. In particular, the need for interventions targeting high utility as well as high level skills is particularly acute. The depth and scope of research in reading interventions for students with EBD is clearly lacking. Special and general educators are obligated to meet both the social and academic needs of this population. Researchers can make this possible by providing evidence of efficacious practices that have a high likelihood of success in a variety of school settings and by reporting findings to practitioners. Only then educators can begin to increase the academic achievement of students with EBD to more acceptable levels.

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