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Academic Interventions For Successful Inclusion Of Students With Mild To Moderate Emotional/behavioral Disabilities In General E

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ACADEMIC INTERVENTIONS FOR SUCCESSFUL INCLUSION OF STUDENTS WITH
MILD TO MODERATE EMOTIONAL/BEHAVIORAL DISABILITIES IN GENERAL
EDUCATION CLASSROOMS: A SYSTEMATIC REVIEW OF LITERATURE

by

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ABSTRACT

Students with emotional and behavioral disorders (EBD) have traditionally been educated in self-contained special education settings. Recent legislative changes such as the No Child Left Behind (NCLB) Act of 2001 and the Individuals with Disabilities Education Act (IDEA) 2004 have led to increased inclusion of students with EBD in general education classrooms. Because of these changes, general educators need to know which research-based interventions are effective in improving academic performance with these students.

This systematic review examined the literature to identify research-based effective interventions for students with EBD served in general education settings. Studies included in this review had to meet the following criteria: research sample includes students identified with EBD as their primary disability who are being educated full time in general education settings; description of intervention and implementation are thorough enough to allow replication; documented relationship between intervention and academic performance is clearly established; and data documenting intervention effect is provided. The focus of interventions for students with EBD is too often only on controlling behavior, whereas this review focused on improving academics. Studies not meeting these criteria were excluded from the review. These inclusion and exclusion criteria were necessary to identify studies relevant to current practice of inclusion, as well as to provide information to educators on interventions having an effect on academic performance.

Five studies met all inclusion criteria. Effective interventions included: writing instruction, discovery teaching, teacher modeling, cross-age tutoring, and guided notes. Nineteen studies met all inclusion criteria except setting, with intervention and data collection performed in self-contained special education classrooms. These studies suggest that peer-tutoring and self-management interventions may also be effective if introduced into general education classrooms. The study concludes by suggesting specific methodological criteria needed for future research in this area.

to my husband Ed

for his love and support

~~~~~~~~~~

throughout this incredibly long journey

he never once asked

Are we there yet?

~~~~~~~~~~

i love you

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LIST OF ACRONYMS/ABBREVIATIONS

ADD   Attention Deficit Disorder

ADHD   Attention Deficit Hyperactivity Disorder

AYP   Adequate Yearly Progress

CBA   Curriculum Based Assessment

EBD   Emotional and Behavioral Disorder

EMH   Educable Mental Handicap

ESE   Exceptional Student Education

FAPE   Free Appropriate Public Education

FBA   Functional Behavior Analysis

HQT   Highly Qualified Teacher

IDEA   Individuals with Disabilities Education Act (2004)

IEP   Individual Education Plan

LRE   Least Restrictive Environment

NCLB   No Child Left Behind (Act) 2001

PBS   Positive Behavior Support

REI   Regular Education Initiative

SED   Severe Emotional Disturbance

SLD   Specific Learning Disability

SLI   Speech/Language Impairment

CHAPTER 1: INTRODUCTION

<u>Chapter Introduction</u>

The needs of students with emotional and behavioral disorders (EBD) are complex and demanding, requiring extra attention and effort from classroom teachers (J. M. Kauffman, 2005). Although students with EBD have historically been educated in self-contained classrooms (J. M. Kauffman, Brigham, & Mock, 2004), this population is increasingly being educated in general education classrooms (Kavale, 2002). General education teachers report they feel unprepared to teach students with EBD (Scruggs & Mastropieri, 1996). As a result, the majority of general education teachers are reluctant to include students with EBD in their classrooms.

In a meta-analysis of 28 reports on teacher attitudes and perceptions of inclusion published between 1958 and 1995, Scruggs and Mastropieri (1996) found general education teachers perceive the inclusion of students with EBD to be the most challenging of all students with mild to moderate disabilities. Approximately 65% of teachers surveyed supported the overall concepts of mainstreaming and inclusion, while only about 30% supported including students with EBD in the general education classroom (Scruggs & Mastropieri, 1996). In addition, only 30% of the respondents believed general education teachers had the skills and training necessary to meet the needs of students with disabilities (Scruggs & Mastropieri, 1996).

The findings from the Scruggs and Mastropieri (1996) meta-analysis described above indicate general education teachers do not feel equipped to meet the needs of students with EBD in general education classrooms, however they do agree individual interventions are desirable for students with disabilities (Schumm & Vaughn, 1991). General educators need information on academic interventions shown to be effective for students with disabilities who are educated in general education classrooms. This study provides a synthesis of literature germane to this issue, and presents findings and implications for educators and future research. (From this point forward, this study will be referred to as the "review" or "systematic review" in order to avoid being confused with the studies that were captured in the search and included in this review.) Chapter 1 presents the need for this review as well as practical and scholarly significance. Research questions and methodology are identified, and assumptions and terms are defined.

<u>Need for Systematic Review</u>

Including students with EBD in the general education classroom is becoming a priority goal and reality for many school districts. Recent changes in federal legislation such as the No Child Left Behind (NCLB) Act of 2001 and the Individuals with Disabilities Education Act (IDEA) of 2004 have made a major impact on these decisions. However, as discussed in the chapter introduction, general educators are not prepared to meet the needs of these students with EBD who are or will be included in their classrooms (Schumm & Vaughn, 1991; Scruggs & Mastropieri, 1996).

A preliminary search of the literature indicated empirical research examining academic

interventions for students with EBD in general education classrooms is sparse. Even considering

the paucity of research, this systematic review is necessary in order to document the research that

does exist; what is known about effective academic interventions for this population; and what

areas need further study or are yet to be explored. In addition to providing educators with

information about effective academic interventions for students with EBD in general education

classrooms, this systematic review will provide a landscape of the literature and a map for future

research on this topic.

<center>Significance of Review</center>

The purpose of this systematic review is to synthesize the literature on academic interventions

shown to have an effect on academic outcomes for students with EBD who are being educated

full time in general education classrooms. A systematic review is necessary to synthesize the

literature and document what is known about this topic. The results of this review will provide

both scholarly and practical significance.

<center>Scholarly Significance</center>

Few studies examining interventions for inclusion of students with mild to moderate disabilities

in the general education classroom focus exclusively on students with EBD (Kavale & Mostert,

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2003; Lipsky & Gartner, 1997; Simpson, 2004). Much of the recent literature on inclusion either focuses generally on students with mild to moderate disabilities or specifically on students with learning disabilities. For example, Mastropieri and Scruggs (2001) described characteristics of successful inclusive classrooms (i.e. administrative support, positive classroom atmosphere, appropriate curriculum) across grade levels and disability areas, as well as challenges secondary classrooms present to students with disabilities (i.e. expectations of independent study skills and prerequisite content knowledge). Both of these sections described the needs of students with disabilities in general. In the third section of this same article, the authors presented an analysis of inclusion strategies for secondary classrooms including peer tutoring, co-teaching, and strategy instruction. Of the 16 total studies included in Mastropieri and Scruggs (2001) article, participants in eight of the studies were identified as either students with disabilities or students with mild to moderate disabilities; participants for five of the studies included only students with learning disabilities; and the sample population was not specified for the remaining three studies. None of the 16 studies included in the Mastropieri and Scruggs (2001) analysis identified the sample population as exclusively students with EBD.

One reason for this lack of studies with samples including exclusively students with EBD may be the lower prevalence of students with EBD as compared to students with SLD. Approximately 1% of the student population is identified as EBD, compared to 6% identified as SLD (National Center for Education Statistics, 2005). The lower prevalence of students with EBD, in particular in general education classrooms, makes it more challenging for researchers to identify enough

study participants to assemble a significant study sample. Smaller sample size decreases the external validity of the study, and this may cause researchers to consider a mixed population of students with disabilities to increase sample size. Although this systematic review will not change prevalence of students with EBD, it is expected that the clarification of the literature will highlight the need for further research and provide direction for researchers; this may in turn induce further study of academic interventions for students with EBD in general education classrooms, despite the low prevalence.

Literature examining interventions for students with EBD in self-contained special education classrooms is more abundant than studies conducted in general education classrooms. Several literature reviews have been conducted regarding interventions for students with EBD, however the majority of the interventions investigated were implemented in self-contained special education environments rather than general education classrooms (Conroy, Dunlap, Clarke, & Alter, 2005; Pierce, Reid, & Epstein, 2004; Skiba & Casey, 1985). Skiba and Casey (1985) conducted a meta-analysis of 41 studies on behavioral interventions for students with EBD. In their review, Skiba and Casey identified effective behavioral interventions; however they also reported the majority of the studies reviewed contained design flaws and/or inappropriate statistical analysis. In addition, their research was conducted 22 years ago and much has changed in both special education and general education practice since then.

More recently, Pierce et al. (2004) examined 30 studies of teacher-mediated interventions for students with EBD and found some of these interventions had an effect on academic outcomes when proper teacher training was provided. Once again, the majority of these studies were conducted in special education settings rather than general education settings. Although Pierce et al. (2004) reported positive outcomes, they also cautioned that none of the individual teacher-mediated interventions had been adequately studied and therefore external validity is weak. Another concern reported by Pierce et al. (2004) was the lack of group studies; this was a concern shared by Conroy et al. (2005) who reviewed 73 studies on the use of positive behavioral interventions with young children at risk for EBD. All but one of the 73 studies in the Conroy et al. (2005) review were single-subject design (Conroy, Dunlap, Clarke, & Alter, 2005). Although single-subject design is sometimes appropriate, random controlled trials claim greater internal validity (Shadish, Cook, & Campbell, 2002).

To accomplish the goal of successfully including students with EBD in general education classrooms, it is first necessary to provide teachers with information about interventions shown to be effective with this population in general education settings. Although it is clear from the research reviewed above that studies investigating effective interventions for students with EBD in general education classrooms is lacking, comprehensive systematic review of literature germane to this specific population and setting has not yet been conducted. Therefore, a current synthesis and analysis of studies specifically focused on interventions for successful inclusion of students with EBD in the general education environment is needed. This systematic review,

through a thorough search and analysis of the literature, identified studies of academic interventions for students with EBD in general education classrooms. The resulting synthesis of this study will clarify the current state of the literature regarding academic interventions effective for inclusion of students with EBD in general education classrooms. Areas needing additional research will be identified as well as areas yet to be explored.

Practical Significance

School districts are finding it necessary to provide increased access to general education curriculum to students with EBD who had previously been educated in separate, self-contained classrooms. The No Child Left Behind (NCLB) Act of 2001 requires all students in grades three through eight to be assessed on progress towards achieving general curriculum reading and math standards; these assessment results are then used to determine if student subgroups, including students with disabilities, are making adequate yearly progress (AYP) (No Child Left Behind Act of 2001, Pub. L. No. 107-110, Title II: § 201). For all students, except for those with the most severe cognitive disabilities, AYP is determined using assessment of student progress in the general education curriculum. For this reason, access to the general education curriculum for students with disabilities is critical for schools and districts to achieve AYP.

Another component of NCLB 2001 that impacts educational service delivery for students with EBD is the Highly Qualified Teacher (HQT) requirement (No Child Left Behind Act of 2001,

Pub. L. No. 107-110, 34 CFR§200.56(b)(2-3)). In addition, IDEA 2004 requires special education teachers to be "highly qualified" in the areas they teach (Individuals with Disabilities Education Act of 2004, 20 USC 1401 §602(10)(B)(i)). To be in compliance with the HQT requirement, all teachers must be certified in each content area for which they are the teacher of record (No Child Left Behind Act of 2001, Pub. L. No. 107-110, 34 CFR§200.56(b)(2-3)). In the past, secondary special education teachers in self-contained classrooms typically provided instruction in several content areas while holding only a special education teaching certificate. With the new HQT requirement, these teachers are no longer considered qualified to teach content areas without obtaining that particular content area certification. Therefore, to be in compliance with the HQT requirement of NCLB 2001, students with mild to moderate disabilities are being placed in general education classrooms and receiving their special education services within the general education classroom or via resource rooms (Muller & Burdette, 2007).

In addition to the influences of NCLB 2001, the Individuals with Disabilities Education Act (IDEA) of 2004 has contributed to increased inclusion of students with EBD in general education classrooms by requiring students with disabilities to be educated with non-disabled peers to the greatest extent possible. This IDEA 2004 requirement, least restrictive environment (LRE), is defined:

To the maximum extent appropriate, children with disabilities, including children

in public or private institutions or other care facilities, are educated with children

who are not disabled, and special classes, separate schooling, or other removal of

children with disabilities from the regular educational environment occurs only

when the nature or severity of the disability of a child is such that education in

regular classes with the use of supplementary aids and services cannot be

achieved satisfactorily. (IDEA 2004, Statute: TITLE I/B/612/a/5)

According to this legislation, students with EBD are entitled to be educated with non-disabled

peers in the general education classroom if they can be successful with appropriate services,

accommodations, and interventions. Although special education teachers still provide services to

students with disabilities who are placed in general education classrooms, general educators are

responsible for implementing effective instructional practices for all students in their classrooms

and therefore need information on effective interventions that meet the unique needs of students

with EBD.

The practice of including students with disabilities in the general education classroom is already

in place at many schools, and this trend is increasing (Kavale, 2002). However students with

EBD are still being included in general education classrooms at just over half the rate of students

with Specific Learning Disabilities (SLD). Source According to the *27th Annual Report to*

Congress on the Implementation of the Individuals with Disabilities Education Act 2005, 86.1%

of students with SLD receive 40% or more of their education in a general education classroom, compared to only 52.9% of students with EBD. Although a requirement of IDEA 2004 to educate students with disabilities with their non-disabled peers, inclusion of students with EBD may be impeded by the general educator's lack of knowledge on interventions effective in teaching these students. General educators need to be prepared to meet the unique needs of students with EBD and to have knowledge of research-based effective interventions which address these needs.

Educators may not be meeting the needs of students with disabilities included in general education classrooms. According to a study in which the inclusive practices in six schools were observed and analyzed, no evidence was found to indicate instructional practices meeting individual student need were being implemented (Zigmond & Baker, 1995). In addition, research on the effectiveness of the inclusive service delivery model in raising student achievement is inconclusive (Dunn, 1968; Will, 1986).

To individualize instruction and meet the individual needs of students with EBD in their classrooms, general educators must first be provided with a selection of research-based interventions from which to choose. This systematic review will provide educators information about academic interventions proven effective in promoting success for students with EBD being served full time in the general education classroom. The outcome of this review will allow

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general educators to make informed decisions regarding how best to educate students with EBD

in the general education classroom and to therefore assist this population in being successful in

school. In addition to the widely accepted notion that all students benefit from academic success,

the NCLB 2001 and IDEA 2004 require the implementation of research-based practices for

students with disabilities. Therefore, there is a need to identify the research-based strategies

already show to be effective in the general education environment for students with EBD.

<u>Research Questions</u>

This review will address the following questions:

1. What interventions are effective in improving academic performance for students with

   emotional/behavioral disorders (EBD) who are being educated full time in general

   education K-12 classrooms?

   a. How are these interventions being implemented?

   b. In what context are these interventions successful?

   c. Does the intervention address behavioral performance in addition to academic

      outcomes?

<center>Methodology</center>

Research on education is abundant, although poor organization and lack of synthesis make it difficult for educators, researchers, and policy makers to locate information addressing a specific topic (Fink, 2005). Due in large part to recent advancements in technology, the availability and accessibility of research provides educators with an abundant source of information. However, without an effective system for sorting and analyzing the current research base, this information can easily become overwhelming and therefore ineffective (Fink, 2005; Petticrew & Roberts, 2006). A systematic review is one research method for clarifying the literature on a given topic (Campbell Collaboration, 2001; Fink, 2005; Petticrew & Roberts, 2006).

The purpose of a systematic literature review is to identify, evaluate, and synthesize "the existing body of completed work produces by researchers, scholars, and practitioners" in a systematic, explicit, and transparent method (Fink, 2005, p. 3). Systematic reviews include a systematic and comprehensive search of literature to identify all studies germane to the topic being examined; screening according to inclusion and exclusion criteria set by the researcher; and an analysis and synthesis of studies that met the inclusion criteria (Campbell Collaboration, 2001; Petticrew & Roberts, 2006; Rothstein, Turner III, Lavenberg, & Campbell Collaboration, 2004). Studies not meeting the criteria are excluded from the systematic review.

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Before additional research is conducted on academic interventions effective for students with EBD in general education settings, it is first necessary to examine and clarify the current literature and thereby identify areas needing further study and research methods that will provide the most useful information. A systematic review of literature examining academic interventions for students with EBD educated in general education classrooms will provide clarity to the literature, identify what is known, and identify areas needing further study and those yet to be explored. Currently, no such systematic review exists.

This systematic review of literature on academic interventions for students with EBD in general education classrooms was developed based on the submission protocol developed for the Campbell Collaboration, and modeled after the systematic review conducted by Hadwin and Winne (1996) on study strategies (Campbell Collaboration, 2001; Hadwin & Winne, 1996). A comprehensive search was conducted to identify all literature potentially relevant to the topic, and then inclusion and exclusion criteria were applied. Remaining studies were analyzed for threats to internal validity (Shadish, Cook, & Campbell, 2002). Results are presented in chapter 4; findings and implications are discussed in chapter 5.

<u>Assumptions</u>

This study design was developed in consideration of the following assumptions:

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1. Research-based interventions are necessary for students with EBD to be successful in general education settings.

2. Interventions effective for non-disabled students, or students with other mild to moderate disabilities, are not necessarily effective for students with EBD (J.M. Kauffman, Landrum, Mock, Sayeski, & Sayeski, 2005). Due to the unique challenges characteristic of students with EBD, it would be unwise to assume research-based interventions effective for the general student population would also be effective for students with EBD.

3. Interventions effective for students with EBD in self-contained special education classrooms are not necessarily effective in inclusive, general education settings. Self-contained special education classrooms often include fewer students and a higher adult-to-student ratio, therefore interventions requiring significant individual or small group assistance may not be feasible in the general education classroom. In addition, students with EBD served in general education settings may be more likely to prefer covert interventions rather than those which are more obtrusive.

Although it is quite possible for interventions to be effective for both students with and without disabilities, in both self-contained and general education settings, it is necessary to document evidence of effectiveness with these various populations and in a variety of settings rather than to assume effectiveness.

Definition of Terms

1. Adequate yearly progress (AYP): measurement of student progress towards achieving state academic standards.

2. Attention deficit disorder (ADD): disorder characterized by persistent patterns of inattention and distractibility, causing difficulty with maintaining focus, organization, and completion of tasks.

3. Attention deficit/hyperactivity disorder (ADHD): includes characteristics of ADD as well as over-activity, impulsiveness, and frequent movement.

4. Educable mental handicap (EMH): mild cognitive disability resulting in impaired learning skills.

5. Emotional and behavioral disorders (EBD): significant behavioral and emotional dysfunction which interferes with student's academic success.

6. Exceptional student education (ESE): special education services provided to students with disabilities or who are gifted.

7. Free appropriate public education (FAPE): a provision included in the Individuals with Disabilities Education Act that requires local school districts to provide a free and appropriate public education to all children.

8. General education: basic classroom or educational setting where access to general education curriculum is provided to heterogeneous groups of students by a general educator.

9. Inclusion: educating students with disabilities in general education settings with non-disabled peers.

10. Individuals with Disabilities Education Act (IDEA) 2004: federal law addressing the education of students with disabilities; reauthorization of the landmark special education law, the Education for All Handicapped Children Act, P.L.-94142, originally passed in 1975.

11. Intervention: specific instructional or behavioral strategy targeted to address the needs of students failing or at risk of failing; may be implemented by teacher, instructional aide, peer, or self.

12. Learning theory: set of principles organized to explain how people learn.

13. Least restrictive environment (LRE): educating a student with disabilities with non-disabled peers to the greatest extent appropriate based on the student's individual needs.

14. Mainstreaming: a student with disabilities who receives the majority of his/her education in a self-contained classroom and a portion of his/her education in a general education setting.

15. No Child Left Behind (NCLB) Act (2001): a federal education reform law with an emphasis on accountability and research-based instructional practices; requires all states to assess and report student proficiency levels to determine if schools are making adequate yearly progress (AYP).

16. Placement: where a student receives the majority of his her instruction (i.e. self-contained classroom, general education classroom).

17. Self-contained: classroom or educational environment where all students are disabled; oftentimes includes special instructional practices and an alternative curriculum delivered by a special educator.

18. Service delivery model: how special education services are provided to students with disabilities (i.e. self-contained, resource room, inclusion).

19. Speech/language impairment (SLI): problems with articulation of sounds and speaking fluently, or with receptive and/or expressive language; students often have difficulty communicating verbally and/or in writing.

20. Specific learning disability (SLD): processing difficulties in students with average intelligence that impede student learning.

CHAPTER 2: REVIEW OF LITERATURE

Chapter Introduction

The primary purpose of this review is to identify research-based interventions effective for students with EBD being educated full time in general education classrooms. Understanding the characteristics of students with EBD is necessary to comprehend the unique needs and challenges of this population and the necessity of research-based interventions that address these issues. To this end, an overview of students with EBD is provided in this chapter, including the federal definition of this disability, process for identification and eligibility, and characteristics of this population. In addition, the historical context and current practices of including students with EBD in general education settings is discussed; this will provide a framework for interpreting the findings of the systematic review. Finally, types of academic and behavioral interventions are discussed in the context of how they are supported by learning theories. Cognitive, behavioral, and social learning theories provide a framework for sorting and discussing interventions, as well as for identifying and analyzing patterns of intervention types implemented by setting (i.e. general education rather than special education classrooms).

Emotional and Behavioral Disorders

The discussion of emotional and behavioral disorders is by nature complex as this topic includes the affective domain of emotions and their resulting actions. Emotions are not easily observed or studied in an objective and empirical manner, although emotional problems can and do cause

significant disruptions in schools. Adding to the complexity of the discussion, a variety of terms

are used in the literature to refer to this mild to moderate disability category of emotional and

behavioral disorders (i.e. emotional disturbance, emotional handicap, emotional impairment,

behavioral disturbance, behavioral handicap, and behavioral impairment). For the purposes of

this review, all of the previous terms are considered equivalent to the term used in this systematic

review: emotional and behavioral disorder (EBD).

Definition

Various definitions exist for EBD, however this review examines interventions researched

specifically with students in school settings and therefore the definition most appropriate for the

context of this study is the US federal definition included in the Individuals with Disabilities

Education Act (IDEA) of 2004. IDEA 2004 is the reauthorization of the landmark legislation for

students with disabilities, the Education for All Handicapped Children Act, P.L. 94-142,

originally enacted in 1975.

The process and criteria for identifying a student with EBD is defined by IDEA 2004, the federal

law governing the education of students with disabilities. Thirteen disabilities are defined under

IDEA, including cognitive disabilities, physical disabilities, and speech/language impairments.

The IDEA disability category of emotional disturbance is defined as follows:

,..a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child's educational performance:

(A) An inability to learn that cannot be explained by intellectual, sensory, or health factors.

(B) An inability to build or maintain satisfactory interpersonal relationships with peers and teachers.

(C) Inappropriate types of behavior or feelings under normal circumstances.

(D) A general pervasive mood of unhappiness or depression.

(E) A tendency to develop physical symptoms or fears associated with personal or school problems. [Code of Federal Regulations, Title 34, Section 300.7(c)(4)(i)]

As defined by the IDEA, emotional disturbance includes schizophrenia but does not apply to children who are socially maladjusted, unless it is determined that

they have an emotional disturbance. [Code of Federal Regulation, Title 34,

Section 300.7(c)(4)(ii)]

Eligibility and Prevalence

Students exhibiting characteristics of EBD and experiencing academic difficulty must

proceed through an eligibility evaluation process and meet the IDEA 2004 requirements

described above in order to qualify for special education services. This process involves

pre-referral activities such as documented interventions, parent conferences, input from a

multi-disciplinary team, parental consent, psycho-educational assessment, and a

determination of eligibility meeting. Although the process may vary somewhat by state,

federal guidelines detailed in IDEA 2004 guide the process.

Because of the subjective nature of emotional and behavioral disorders and possible

misinterpretation of the definition, some would argue that students with EBD have been

under-identified for special education services (J. M. Kauffman, 2005). According to the

National Center for Education Statistics (2008), the percentage of students identified

nationally as EBD rose steadily from .6% in 1976 to 1% in 1994, and has remained at 1%

since. During that same time period, the percentage of students identified as SLD rose

from 1.8% to 5.8%. While prevalence of students with SLD more than tripled during the

last 30 years, prevalence of students with EBD has not quite doubled. Approximately 8%

of students receiving special education services qualify under the category of EBD

(Office of Special Education and Rehabilitative Services & Westat, 2007). According to

the National Longitudinal Transition Study (2004) of youths with disabilities, this

percentage has not changed significantly over the past 15 years (Wagner, Cameto, &

National Center on Secondary Education and Transition, 2004).

Interventions shown to be effective for students identified as EBD and educated in

general education classrooms may also be effective for students with characteristics of

EBD but who have not been referred for evaluation and/or identified as EBD. This

systematic review will provide much needed information on academic interventions for

students identified as EBD; this information may also be beneficial to those not yet

identified but who exhibit similar characteristics and needs. Early identification of

students with disabilities has been the goal, and yet the highest rate of referrals for EBD

identification occurs during the age range of 14 to 15 years old (J. M. Kauffman, 2005).

Approximately half of all students with EBD were identified in elementary school and

half at the secondary level. The percentage of students identified as EBD has increased

slowly since passage of the original federal special education legislation, however there is

disagreement as to the accuracy of those numbers and whether all students meeting the

eligibility criteria are actually being identified and receiving services (J. M. Kauffman,

2005).

Student Characteristics

Students with EBD have complex academic, social, and behavioral needs that put them at risk of failing academically. This section will provide an overview of the characteristics of students with EBD, as well as the impact the characteristics of EBD have on academic and post-school outcomes for this population. This information will help readers to better understand the needs of the population participating in the studies that are discussed in this systematic review of literature.

As with other disability categories, there is no single prototype that captures all characteristics exhibited by students with EBD. These students, like all students, are individuals with unique combinations of behaviors and needs. There are, however, a few generalizations that can be made about students with EBD as a group, such as demographic information, lack of academic and social success, and post-school outcomes (i.e. social, post-secondary education, and employment). Additional characteristics may be categorized into two major domains: internalizing and externalizing disorders. General characteristics and characteristics of internalizing and externalizing domains are described in the following sections.

General Characteristics

Demographic

Students with EBD as a group differ demographically from the general student population regarding gender, race/ethnicity, and socioeconomic status. More males than females are identified as EBD, with males comprising approximately 77% of the EBD population compared with 51% of the general population (Wagner, Cameto, & National Center on Secondary Education and Transition, 2004). In addition, African-American students are identified as EBD at disproportionately higher rates, with 25% of the EBD population consisting of African-Americans compared with 16% of the general population (Wagner, et al., 2004). Students with EBD are also more likely than the general student population to be living in poverty with a single parent who holds less than a high-school education (Wagner, et al., 2004).

Social

Students with EBD often have difficulty developing and maintaining appropriate relationships, both with peers and adults (J. M. Kauffman, 2005). This may be due to the difficulty these students experience in detecting and understanding social cues, such as non-verbal communication and societal norms and expectations. Teachers and peers often avoid interaction with students with EBD as they perceive these students to be annoying, irritating, and even frightening (J. M. Kauffman, 2005). Compared to students with other mild to moderate disabilities, students with EBD are 2 ½ times more likely to be rated low on overall social skills

and significantly more likely to be rated low in self-control (Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005).

Academic

As stated in the IDEA 2004 definition for students with EBD, one eligibility requirement for a student to receive special education services is "an inability to learn that cannot be explained by intellectual, sensory, or health factors" [Code of Federal Regulations, Title 34, Section 300.7(c)(4)(i)(A)]. It is therefore fair to assume that students with EBD are not demonstrating satisfactory academic progress; studies have documented these academic deficits (Epstein, Kinder, & Bursuck, 1989). This is not to say, however, that students with EBD do not possess the intellectual abilities necessary to succeed academically, but rather indicates some characteristic(s) of the student's disability is impeding his/her academic progress.

According to Wave 3 of the Special Education Elementary Longitudinal Study (SEELS) conducted by the Office of Special Education Programs (OSEP) in 2004, 49% or more of students with EBD score in the bottom quartile on the Woodcock Johnson III subtests of letter-word identification, passage comprehension, math calculation, and applied problems (Table 1) (Special Education Elementary Longitudinal Study, 2004). Students with EBD performed slightly higher than other students with mild to moderate disabilities in reading skills, and slightly lower in math. With only 14.5 to 27.5% of students with EBD performing in the upper

quartiles (3rd and 4th), it is clear the majority of students with EBD are not achieving

satisfactorily in the core subjects of math and reading. These data support the urgent need for

academic interventions effective for students with EBD in the general education classroom.

Table 1. Achievement Scores for Elementary and Middle School Students with Disabilities

Woodcock Johnson – III Subtests	Disability	Quartile			
		1st	2nd	3rd	4th
Letter-word Identification	All Mild to Moderate Disabilities	59.7	22.3	11.1	6.9
	EBD	49.2	28.0	13.2	9.7
Passage Comprehension	All Mild to Moderate Disabilities	64.0	22.9	8.5	4.7
	EBD	62.4	23.1	8.6	5.9
Mathematics Calculation	All Mild to Moderate Disabilities	45.7	20.4	17.3	16.6
	EBD	49.8	22.8	20.2	7.3
Applied Problems	All Mild to Moderate Disabilities	50.7	25.2	14.8	9.2
	EBD	52.7	26.3	16.5	4.5

Note. Values represent percentage of students scoring in each quartile.

Source. Data obtained from Wave 3 of the Special Education Elementary Longitudinal Study (SEELS), 2004.

As a group, students with EBD experience lower high school completion rates than non-disable students and students with other disabilities. According to data from the U.S. Department of Education National Center for Special Education Research (2005) as cited in Wagner et al. (2006) and the National Center for Education Statistics (2005), only 56% of students with EBD complete high school, compared to 72% of all students with disabilities and 86% of the general student population (Wagner et al., 2006). These statistics are troubling because students with disabilities who complete high school are more likely to find employment than those who do not (D'Amico & Marder, 1991). Additional findings comparing life outcomes of students completing high school to those who have dropped out include steadier employment, higher engagement in social activities, and less alcohol and drug abuse (McCaul, Donaldson Jr., Coladarci, & Davis, 1992). High school completion is defined as earning a high school diploma, certificate of completion, or similar document (Institute of Education Sciences, 2005; Wagner et al., 2006).

Post-school

The primary goal of education for any student is successful transition to adulthood, including securing competitive employment, independent living, and positive social experiences. Not surprisingly, primary transition goals for secondary students with EBD include these same outcomes. Results from the National Longitudinal Transition Study (NLTS) of youths with disabilities Wave I follow-up study (2002) (Institute of Education Sciences, 2005) indicate nearly half of secondary students with EBD would like to attend college or vocational school,

gain competitive employment, and live independently; goals for 25% of students with EBD include improving social and interpersonal relationships (Institute of Education Sciences, 2005).

The outcome for employment is more favorable for students with EBD compared to students with other disabilities. Approximately 60% of students with EBD obtain competitive employment in adulthood (Wagner et al., 2006). Students with EBD are the most likely of students with disabilities to lead an active social life with 52% seeing friends weekly and approximately 20% participating in community groups and/or volunteer activities (Wagner et al., 2006).

The outcome for post-secondary education is not so favorable for students with disabilities; only one in five students with disabilities enrolled in any type of post-secondary education (Wagner et al., 2006). This is not surprising considering the difficulties experienced by students with EBD in their K-12 school years. One could argue that positive and successful K-12 school experiences might lead to increased post-secondary education for students with EBD.

Cognitive Characteristics

The majority of students with EBD are of average to low average intelligence (J. M. Kauffman, 2005). The mean intelligence quotient (IQ) for students with EBD falls within the low normal

range (Wagner, Cameto, & National Center on Secondary Education and Transition, 2004). However IQ scores of this population span a wide range, from scores that indicate mental handicaps (1% of students with EBD) to scores considered gifted (2% of students with EBD), (J. M. Kauffman, 2005; Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005).

Students receiving an IQ score below 70 are occasionally found eligible for services as EBD if it is believed the student performed poorly on the IQ test due to characteristics of EBD (J. M. Kauffman, 2005). Typically however students receiving an IQ score below 70 are not considered EBD as they do not meet criteria *A* of the IDEA 2004 definition for students with EBD, "an inability to learn that cannot be explained by intellectual, sensory, or health factors." An IQ below 70 would indicate a cognitive disorder to which academic difficulties could be attributed; meeting all other requirements, students would then be identified as mentally handicapped instead of EBD regardless of whether they exhibit emotional and behavioral issues.

Students with EBD are often identified with multiple disabilities (Wagner et al., 2005). According to parent reports, approximately 65% of all students with EBD are reported to have attention deficit disorder (ADD) or attention deficit/hyperactivity disorder (ADHD) (Wagner et al., 2005). In addition, 25 to 30% of students with EBD are identified as having a learning disability (Wagner et al., 2005).

Prevalence of multiple disabilities for students with EBD complicates the issue of determining

academic intervention effectiveness for this population. For example, consider an intervention

that has previously been shown to be effective for students with SLD (i.e. advance organizers)

that is then examined with a sample of students identified as EBD who also have learning

disabilities; it would be difficult, if not impossible, to determine whether the intervention were

addressing characteristics of the learning disability or characteristics of the emotional and

behavioral disorder. Limitations of this systematic review pertaining to study samples consisting

of students with multiple disabilities are discussed in chapter five.

Behavioral Characteristics

Behavioral characteristics of students with EBD can be categorized as either externalizing

disorders or internalizing disorders. Characteristics of externalizing disorders include disruption,

noncompliance, verbal abuse, aggression, and violence (J. M. Kauffman, 2005). Students with

EBD who exhibit primarily externalizing behaviors are more likely than those exhibiting

primarily internalizing behaviors to receive discipline referrals and disciplinary actions, and to be

educated in self-contained special education classrooms or alternative settings (Furlong,

Morrison, & Jimerson, 2004). Characteristics of internalizing disorders include anxiety,

depression, social withdrawal, and mood disorders (J. M. Kauffman, 2005). The approach taken

most often with students exhibiting internalizing behaviors is a "medical model" including

therapy and counseling (Gresham & Kern, 2004). Although it is useful for purposes of

understanding and discussion to categorize these behaviors, it should be noted that all behavioral characteristics of students with EBD may be complexly interconnected; changes in internalizing behaviors often impact externalizing behaviors, and vice versa (Furlong et al., 2004).

<div align="center">Inclusion</div>

Inclusion is the practice of educating students with disabilities in settings with non-disabled peers. For the purposes of this study, a student is considered fully included if he/she is educated in an inclusive setting for 79% or more of the school day. In the following sections, the history and current practice regarding inclusion will be discussed. Benefits of inclusion for students with disabilities will be presented, as well as barriers to implementing inclusion of students with disabilities in general education classrooms.

<div align="center">Historical Context</div>

The special education field, particularly regarding students with EBD, has historically been very closely connected to the mental health field. Until 1950, children with severe emotional disorders were typically institutionalized in hospitals for the mentally ill (Osgood, 2008; Wood, 2001). At that time, laws did not yet exist in the United States that required school districts to educate all students. In the early half of the 20th century, interventions for students with EBD were typically based on mental health practices and psychoanalytic theory and presented as case studies (J. M.

Kauffman, Brigham, & Mock, 2004). It wasn't until the 1950's that experimental research was introduced to the field of EBD, resulting in a limited literature base addressing research-based practices for students with EBD (J. M. Kauffman, Brigham, & Mock, 2004).

Around the mid 20th century, individual states began to develop and implement guidelines for educating students with disabilities (Osgood, 2008). Even with the emergence of state legislation, most school districts were not yet required to accept *all* students with disabilities however and many were still turned away (J. M. Kauffman, 2005). The most notable change regarding the education of students with disabilities was the passage of the Education for All Handicapped Children Act (P.L. 94-142) in 1975, which was later reauthorized as the Individuals with Disabilities Education Act (IDEA). This law requires districts to provide a free and appropriate education (FAPE) for all students, including those with disabilities. According to IDEA 2004:

> The purposes of this chapter are to ensure that all children with disabilities have
> available to them a free appropriate public education that emphasizes special
> education and related services designed to meet their unique needs and prepare
> them for further education, employment, and independent living (IDEA 2004,
> Statue: TITLE 20/33/I §1400(d)(1)(A))

This IDEA 2004 requirement of FAPE meant school districts were no longer able to refuse

education services to any student. As a result, students with disabilities began to make their way

into public schools, albeit not necessarily in the same school buildings or classrooms as their

non-disabled peers. Students with disabilities were typically educated in self-contained special

education classrooms, and sometimes in separate school buildings altogether (Kavale, 2002;

Osgood, 2008).

Current Practice

Eventually, school districts began including students with disabilities in general education

classrooms with non-disabled peers (Osgood, 2008). Parent organizations and advocacy groups

played a significant role in instigating this change (Kavale, 2002). The current practice of

including students with disabilities in general education classrooms is largely a result of IDEA

2004's least restrictive environment (LRE) requirement. This IDEA 2004 regulation states:

> To the maximum extent appropriate, children with disabilities including children
>
> in public or private institutions or other care facilities should be educated with
>
> children who are not disabled, and (2) That special classes, separate schooling or
>
> other removal of children with disabilities from the regular educational
>
> environment should occur only when the nature or severity of the disability is
>
> such that education in regular classes with the use of supplementary aids and

services cannot be achieved satisfactorily. (IDEA 2004, 34 CFR

§300.114(a)(2)(ii))

According to IDEA 2004, if schools wish to provide special education services to a student with

a disability in a self-contained special education classroom, the school must document that

particular student's inability to be successful in the general education classroom with appropriate

supports. Therefore, educational placement decisions must be made based on individual student

need. Currently, the majority of all students with mild to moderate disabilities receive their

education in the general education classroom (Kavale, 2002), although students with EBD are

less likely to be included in general education settings than students with other mild to moderate

disabilities (J. M. Kauffman, 2005; Kavale & Mostert, 2003; Swan, Brown, & Jacob, 1987). The

reluctance of general educators to include students with EBD in their classrooms may contribute

to lower rates of inclusion for this population (Scruggs & Mastropieri, 1996).

Efficacy of Inclusion

One rationale for the implementation of inclusion programs is the belief that special education

classrooms are less effective than general education environments. However, research to

determine the efficacy of general versus special education has produced varied and inconclusive

results (Dunn, 1968; Kavale & Mostert, 2003; Lipsky & Gartner, 1997; Wang & Reynolds,

1996; Zigmond, 2006).

In the late 1960s, Dunn reviewed studies to determine whether self-contained special education classrooms provided more effective education for students with disabilities than general education classrooms. Dunn's (1968) conclusion based on study results was that self-contained classrooms were ineffective. He therefore advocated elimination of these classrooms in favor of serving students with disabilities in more inclusive environments, such as general education classrooms utilizing pull-out or resource services. More recent studies have reported similar findings; students with mild to moderate disabilities are somewhat more successful academically in general education settings with appropriate supports provided, either directly in the classroom or in a resource room (E. T. Baker, Wang, & Walberg, 1995; Banerji & Dailey, 1995; Bear & Proctor, 1990; Deno, Maruyama, Espin, & Cohen, 1990; Rea, McLaughlin, & Walther-Thomas, 2002; Schulte, Osborne, & McKinney, 1990). It should be noted differences were slight and that none of these studies reported remarkable differences in academic achievement based on setting. Other studies reported inconclusive results or no significant difference in academic achievement for students with mild to moderate disabilities based on setting (Hocutt, 1996; Manset & Semmel, 1997; Saint-Laurent et al., 1998; Sale & Carey, 1995; Vaughn, Elbaum, & Boardman, 2001; Waldron & McLeskey, 1998).

Lipsky and Gartner (1997) suggested students educated in special education classrooms are not receiving appropriate access to general education curriculum; are not exposed to high expectations by their teachers; and are hindered from developing relationships with non-disabled peers. According to Lipsky and Gartner (1997), the only way to provide students with disabilities

with an education "equal" to their non-disabled peers is via the general education classroom. Wang, Reynolds, and Walberg (1986) caution that as long as self-contained classrooms exist as a placement option, students who might otherwise be served best in general education settings will continue to be segregated.

Research does support placement decisions based on individual student need (Carlberg & Kavale, 1980; Zigmond, 2006). Carlberg and Kavale found placement efficacy was largely determined by the student's disability. While general versus special placement produced no significant difference in achievement for students with mental handicaps, a significant difference was found in academic achievement of students with learning disabilities who achieved slightly higher when served in self-contained special education classrooms (Carlberg & Kavale, 1980). Zigmond (2006) suggests future studies should report individual student characteristics so that efficacy of placement can be examined based on individual student needs.

Kavale and Mostert (2003) strongly encouraged that further research be conducted on the issue of inclusion, and stated policy on inclusion should not be formulated based on "ideology" but should instead be developed based on supportive empirical evidence. The first step in doing such is gathering, sorting, and analyzing the current empirical studies of interventions for students with disabilities in general education classrooms. This systematic review will provide information on academic interventions for students with EBD in general education classrooms.

Barriers to Inclusion

Not everyone agrees with the practice of including students with disabilities in the general

education classroom. Concern and perspectives of general educators is a significant barrier to

successful inclusion of students with EBD in general education settings (Larrivee & Cook, 1979;

Mastropieri & Scruggs, 2001; Scruggs & Mastropieri, 1996). Teacher concerns about inclusion

can be categorized into three major areas: academic, administrative, and pedagogical (Larrivee &

Cook, 1979). These categories include concerns of being adequately prepared to meet the

academic and behavioral needs of students with disabilities; the effects of inclusion on non-

disabled students; and receiving appropriate support from administrators and special education

teachers (Larrivee & Cook, 1979). The majority of general education teachers support inclusion

but few are willing to actually participate and include students with disabilities in their own

classrooms (Scruggs & Mastropieri, 1996). General educators are more reluctant to include

students with EBD than students with other mild to moderate disabilities (Scruggs &

Mastropieri, 1996).

Students with disabilities who are included in general education classrooms are not necessarily

receiving an effective education that meets individual student needs. General education teachers

in inclusion classrooms were less likely than special educators to implement strategies and

accommodations for students with disabilities (J. M. Baker & Zigmond, 1995). According to

Baker and Zigmond (1995), general educators expect students to conform to the instructional

style of the teacher. Many students with disabilities do not receive the accommodations and differentiated instruction that they require in general education classrooms, and therefore Baker and Zigmond (1995) assert these students do not make the same academic progress as they could have made in special education classrooms. According to Fuchs and Fuchs (1998), general education teachers believe many adaptations and accommodations that they are expected to implement are not feasible. These interventions are therefore not implemented at all or not implemented consistently. In order for interventions to be implemented with fidelity, general education teachers must perceive them to be easily implemented and require little change in the classroom routine (Fuchs & Fuchs, 1998). Implementation details of interventions included in this study are provided whenever available.

Interventions for Students with EBD

Types of Interventions

For the purposes of this systematic review, interventions will be categorized using three learning theories: cognitive, behavioral, and social learning theories. According to Schunk (2004), learning theories are an effective way to organize research results; "without theories, research findings would be disorganized collections of data" as researchers would have no framework for linking the data (Schunk, 2004, p. 3). A preliminary search of the literature on academic interventions for students with EBD revealed patterns of intervention approaches that appear to be related to learning theories. Categorizing the interventions discussed in this review by

learning theories may allow these patterns to emerge more fully and may provide information on current and past trends.

There is no direct link between learning theories and academic interventions, and it could be argued that some interventions are supported by more than one learning theory. However, for the purposes of this review, each intervention is identified with a single learning theory only. To select a learning theory that best supported the intervention, each intervention was compared to the defining characteristics of each learning theory described in the following sections.

Cognitive Learning Theory

Jean Piaget's cognitive learning theory attempted to explain learning as the integration of new ideas with the learner's already existing schema or the development of new schema. Learning takes place as stimuli are received from the environment and processed through rehearsal and encoding (Eggen & Kauchak, 2001). Processed information is either stored in long term memory or discarded if the information is not perceived as useful. The work of later cognitivists Noam Chomsky and Jerome Bruner evolved as a response to B.F. Skinner's behaviorism (Phye, 1997). Chomsky, a linguist, criticized that behaviorism could not explain the learning of language and the production of infinite and complex sentences never before heard (Schunk, 2004). Bruner described learning as an outcome of thinking rather than a change in observable behavior (Phye, 1997). Cognitive learning theory interventions include instructional strategies such as the use of

guided notes and graphic organizers that try to make explicit the implicit organization of knowledge, making it more open to discussion and change.

Within the broader context of cognitive learning theory is meta-cognitive learning theory. Meta-cognition involves self-regulated learning, "a cognitively inherent aspect of learning…principally comprised of knowledge, beliefs, and learned skills" (Winne, 1995, p. 186). Meta-cognition can be described as student self-regulated learning, a process in which the student monitors his/her engagement in work and the progress he/she has made towards learning goals (Winne, 1995). One essential element of self-regulation is that students are "aware of qualities of their own knowledge, beliefs, motivation, and cognitive processing" and that awareness of these combined qualities provides constant cognitive feedback which the student uses to adjust learning tactics (Butler & Winne, 1995). To be considered a self-regulated meta-cognitive process, an intervention must address awareness of the student's own thinking and motivation, as well as strategies to change thinking and motivation.

<div align="center">Behavioral Learning Theory</div>

While cognitive learning theory is concerned with the thought processes, behavioral learning theory is concerned only with observable behavior (Bigge & Shermis, 1999; Phye, 1997; Schunk, 2004). Behavioral learning theory is based on behaviorism and the works of John B. Watson and B. F. Skinner (Bigge & Shermis, 1999; Schunk, 2004). Watson argued that in order

for psychology to be considered a true science, it must deal with observable behavior (Schunk, 2004). Skinner further developed behavioral theory to include operant conditioning; a process of changing behavior with use of reinforcers and punishers (Bigge & Shermis, 1999). The defining characteristic of behavioral learning theory is the stimulus-response system and focus on observable behavior. Behavioral learning theory acknowledges the existence of mental processes but does not consider these processes necessary to explain or affect learning (Schunk, 2004).

 Behaviorism explains learning as an observable behavioral change in response to an external stimulus (Bigge & Shermis, 1999). Instructional goals based on behavioral learning theory tend to include increases in number of correct student responses and strengthened responses, and therefore instructional goals tend to address lower levels of learning such as memorizing math facts and spelling words (Schunk, 2004). Interventions based on behavioral learning theory typically include attempts to modify the student's behavior through the use of reinforcers or punishers (Bigge & Shermis, 1999). Although behavioral interventions are by nature intended to address behavior, it is also possible for behavioral interventions to impact academic achievement (Frey & George-Nichols, 2003).

Examples of behavioral interventions include token economy, individual or group contingencies, and positive feedback. Self-management interventions, including include self-monitoring, self-

evaluation, and self-reinforcement, may also be considered behavioral learning theory interventions as they include monitoring and reinforcement of observable behaviors.

Social Learning Theory

Social learning theory is based on the premise that the student's biological characteristics interact with his/her environment to produce reciprocal interactions that help shape an individual's growth and development (Bronfenbrenner & Kazdin, 2000). It is the relationship and interaction between the student and his/her social system that results in learning. Social learning theory evolved from the studies on observational learning conducted by Albert Bandura (Schunk, 2004). Bandura noted people learned new behaviors simply by observing others; reinforcement, an essential characteristic of behaviorism, was not necessary for learning to occur (Schunk, 2004).

In social learning theory, emotional and behavioral disorders are not necessarily a disability within the student but result from imbalance within the social system around the student (Webber & Plotts, 2008). Therefore, the goal of a social learning theory intervention is to help balance the social system which will in turn result in improved outcomes for the student. Examples of social learning theory interventions for students with EBD include cooperative learning and peer tutoring (Fuchs, Fuchs, Mathes, & Simmons, 1997; Hogan & Prater, 1993). Cooperative learning and peer tutoring are based on the premise that students learn through observation and

modeling of others; observation and modeling are defining characteristics of social learning theory.

Defining Characteristics

There exists overlap in defining characteristics of cognitive, behavioral, and social learning theories. For example, social learning theory is most concerned with the reciprocal interaction between a student and his/her social system (Bronfenbrenner & Kazdin, 2000; Webber & Plotts, 2008) ; however, Schunk (1980) suggests reinforcement, a defining characteristic of behavioral learning theory, is the primary motivation in social learning. Schunk also suggests social learning relies on the student's self-perception and identification of a gap between capability and desired performance, thereby motivating students to learn (Schunk, 1980); this self-evaluation of capabilities could also be considered an element of cognitive learning theory.

Some might argue that all self-management interventions involve meta-cognition and should therefore be categorized as a cognitive learning theory intervention. However, not all forms of self-management help students develop awareness of their own thinking and beliefs, a defining characteristic for meta-cognitive interventions. If a self-management intervention is concerned primarily with the monitoring and reinforcement of observable behavior, and does not address student awareness of his/her own thought processes, then that intervention would be categorized as a behavioral learning theory intervention.

As the above examples demonstrate, overlap in learning theories exists; however, it is necessary for the purposes of this systematic review to identify defining characteristics by which interventions included in this review are categorized. Table 2 identifies the characteristics of each learning theory used for categorization in this systematic review.

Table 2. Defining Characteristics of Learning Theories

Learning Theory	Defining Characteristics
Cognitive	Concerned with thought processes and/or meta-cognition; learning occurs through development and addition of schema
Behavioral	Concerned with observable behavior only and not cognitive or meta-cognitive processes; learning occurs through stimulus-response
Social	Concerned with reciprocal interaction of student with social environment; learning occurs through modeling and observation

Chapter Summary

Demographic, cognitive, and behavioral characteristics of students with EBD provide unique

challenges that often make academic success difficult. These students have historically been

educated in self-contained settings such as residential facilities, alternative schools, and self-

contained classrooms. Progress has been made to include students with EBD in general

education settings with non-disabled peers largely as a result of NCLB 2001 and IDEA 2004.

However, general educators still have concerns about their abilities to serve this population.

Although social and behavioral issues are of paramount importance with students identified as

EBD, students who fail to succeed academically are very unlikely to graduate from high school

and are likely to struggle throughout life. Educators need information on research-based effective

interventions for including students with EBD in the general education classroom so that student

learning can be supported in that environment. These interventions may be social, cognitive, or

behavioral in nature, while still attempting to provide academic outcomes.

This systematic review attempts to clarify the literature on academic interventions for students

with EBD in general education classrooms. Results are presented in chapter four; findings and

implications for educators and research are discussed in chapter five.

CHAPTER 3: METHODOLOGY

Chapter Introduction

Students with EBD are being included in general education classrooms, an environment where they have previously been unsuccessful (Kavale, 2002). General educators do not feel prepared to meet the needs of students with EBD (Scruggs & Mastropieri, 1996), and therefore information is needed on academic interventions that work for students with EBD in general education classrooms.

With the increasingly vast amounts of literature published and indexed by online databases, it is necessary to examine the literature on this topic and clarify what is known about academic interventions for students with EBD in general education classrooms. A systematic review is one method for accomplishing this task. Systematic reviews provide a summary and analysis of the literature through completion of a comprehensive search and systematic selection process; this methodology allows researchers to make sense of large amounts of information and contribute to the knowledge base of what works and what doesn't work (Campbell Collaboration, 2001; Petticrew & Roberts, 2006, p. 2). Systematic reviews "describe and explain current knowledge to guide professional practice" (Fink, 2005, p. 8). According to Petticrew and Roberts (2006):

> Systematic reviews are literature reviews that adhere closely to a set of scientific
> methods that explicitly aim to limit systematic error (bias), mainly by attempting

to identify, appraise and synthesize all relevant studies (of whatever design) in

order to answer a particular question (or set of questions) (p. 9).

This systematic review addresses the question of what academic interventions work for students

with EBD in general education classrooms. Decisions to accept or reject academic interventions

must be made based on empirical evidence to the greatest extent possible in order to avoid

rejection of efficacious interventions and acceptance of inefficacious interventions (Cook &

Schirmer, 2006; Goodwin & Goodwin, 1984; Sherman, 2003). Empirical studies of interventions

provide documentation of that intervention's effect. Interventions may have positive or negative

effect on academic outcomes are therefore not necessarily effective simply because they produce

effect. However, information on intervention effect is necessary to determine effectiveness and

efficacy of the intervention. A systematic review of the literature captures, sorts, and analyzes

studies to provide a clearer picture of what has and has not been investigated. When the literature

is sufficient, systematic reviews can provide evidence of effect, and possibly effectiveness and

efficacy of interventions (Petticrew & Roberts, 2006). This systematic review examines the

intervention effect on academic outcomes for students with EBD in general education

classrooms.

The primary focus of this systematic review is the identification, analysis, and synthesis of

empirical studies that examine academic interventions for students with EBD being served full

time in the general education classroom. No systematic review currently exists that addresses this specific need. This systematic review will provide needed information on academic interventions to educators, as well as an overview of the literature and recommendations for future research.

In this chapter, a detailed description of the study search and screening processes is provided. Inclusion and exclusion criteria for study selection are described, as well as information on how those criteria were determined. The method of data analysis is also described. Limitations and delimitations of this systematic review are identified.

Procedures

The first step in completing this systematic review was establishing inclusion and exclusion criteria for the selection of studies. Criteria addressed study sample, implementation of intervention, intervention effect, data and verification, and relationship of intervention to academic outcomes. These criteria are described in further detail later in this chapter.

Once the criteria were established, a comprehensive search of online databases was conducted to identify all relevant studies published after 1975 and prior to the completion of the study search for this systematic review in February, 2008. According to Rothstein et al. (2004), a systematic review must include a thorough and comprehensive search of the literature; this is important as

the literature identified must be representative of the population of completed studies in order to limit bias by the researcher (Rothstein, Turner III, Lavenberg, & Campbell Collaboration, 2004). Types of bias that might be introduced by an incomplete search include language, availability, cost, database, familiarity, and reference bias (Rothstein, Turner III, Lavenberg, & Campbell Collaboration, 2004).

Once the search was completed, studies captured by the search were then screened using the inclusion and exclusion criteria detailed in this chapter. Setting appropriate practical and methodological inclusion and exclusion criteria ensures the systematic review's "efficiency, relevance, and accuracy" (Fink, 2005, p. 55). Inclusion and exclusion criteria should describe the population, intervention, outcomes, and elements of the study design for studies that will be included in the systematic review (Petticrew & Roberts, 2006).

Finally, the studies that met inclusion criteria were analyzed for internal validity and intervention effect. Threats to internal validity include maturation, selection, history, instrumentation, regression, and attrition (Fink, 2005). A study design that accounts for these influences will have higher internal validity and have lower rates of error and bias (Fink, 2005).

Results are presented in chapter 4 and discussed in chapter 5. Studies that met all inclusion criteria except for setting are also presented in chapter 4. These studies examined interventions for students with EBD educated in self-contained special education classrooms rather than in general education classrooms. With the exception of setting, these studies met all other inclusion criteria described in this chapter. Although these studies did not meet the inclusion criteria for setting, findings from these studies are valuable in determining areas of future research for students with EBD in general education classrooms. In addition, information on academic interventions for students with EBD in self-contained special education classrooms is valuable to educators. The preliminary search of empirical research on academic interventions for students with EBD indicated the research conducted in general education classrooms is sparse. Until more research is conducted on academic interventions for students with EBD in general education classrooms, interventions shown to be effective in self-contained classrooms serve as a potential resource for general educators; there is also potential for these same interventions shown to be effective in special education classrooms to be effective in general education classrooms. Because of the potential value to educators and future research as described above, studies that met all inclusion criteria except for setting and were conducted in self-contained special education classrooms are identified and summarized in this systematic review.

It is important for systematic reviews to provide detailed explanations of the search and selection

process, and criteria for inclusion and exclusion so that others may see how the review was

conducted and may replicate it later (Campbell Collaboration, 2001; Fink, 2005). This search

process and inclusion criteria used in this systematic review were modeled after the review

guidelines proposed by the Campbell Collaboration for conducting systematic reviews of

literature and the review conducted by Hadwin and Winne (1996) on study strategies for post-

secondary students (Campbell Collaboration, 2001). A preliminary search of literature that

examined academic interventions for students with EBD was conducted. Inclusion criteria for

this systematic review were developed based on results of that preliminary search, and were

intended to identify studies that address specifically academic interventions for students with

EBD in general education classrooms.

Study Search

A systematic and comprehensive search of the literature was completed to identify studies of

academic interventions for K-12 students identified with emotional/behavioral disorders (EBD)

who are being educated full time in general education classrooms ($\geq$ 79%). The following major

online databases were searched: Educational Resources Information Center (ERIC), PsycINFO,

and Dissertation Abstracts. Each database's unique thesaurus was consulted prior to conducting

the search in order to identify all relevant search terms used in that database's indexing system

(Table 3) (Fink, 2005). This process minimized the possibility of missing studies germane to this systematic review(Rothstein, Turner III, Lavenberg, & Campbell Collaboration, 2004). Terms identified for each database were combined to run a Boolean search in that particular database identifying all studies that might possibly meet the set inclusion criteria. A total of 700 unique reports were identified.

Table 3. Study Search Terms

Database	Disability	Achievement	Exclusions
Dissertation Abstracts	Emotional disorder, emotional problem, behavior disorder, behavior problem	Achievement	None
ERIC	Emotional behavioral disorder, emotional disorder, emotional problem, emotional disturbance, behavior disorder, behavior problem,	Achievement, academic performance	Higher education, postsecondary, university, college
PsycINFO	Emotional disturbance, behavior disorder	Achievement	None

Inclusion and Exclusion Criteria

The inclusion and exclusion criteria described below were developed to accurately identify studies that examine academic interventions for students with EBD educated full time in general education classrooms. These criteria were developed based on the example set by Hadwin and Winne in their systematic review of study strategies for post-secondary students;

recommendations by Fink (2005); and the Campbell Collaboration's recommendations for conducting a systematic review (Campbell Collaboration, 2001; Fink, 2005; Hadwin & Winne, 1996).

Setting appropriate inclusion and exclusion criteria ensures the systematic review will provide results that are accurate and relevant (Fink, 2005). The inclusion and exclusion criteria established for this systematic review addressed practical and methodological study characteristics (Fink, 2005): study sample, setting, intervention implementation and effect, data and verification, and link between intervention and academic outcome. These criteria are described in detail in the following sections.

Once an exhaustive search was completed and all studies germane to the review were identified, each of the following inclusion and exclusion criteria were applied to identify remaining studies.

Sample

This review focused on studies with research samples consisting of K-12 students meeting the following criteria:

        a.   identified with EBD as their primary disability, and

b. educated full time in general education classrooms.

Although this review focused on students identified with EBD as their primary disability, students with multiple disabilities of a mild to moderate nature were not excluded (i.e. specific learning disability, speech/language impairment, other health impairment), as long as the study met the remaining inclusion criteria. However, studies were excluded in which the sample consisted of students with various mild to moderate disabilities and:

a. students with EBD were not included, or

b. the data are not disaggregated and results could not be distinguished for students with EBD.

The rationale for excluding such studies is that students with EBD are by definition characteristically different from those with other mild to moderate disabilities (IDEA, 2004), such as specific learning disabilities, mild mental handicaps, and/or speech/language impairment (J.M. Kauffman, Landrum, Mock, Sayeski, & Sayeski, 2005).

For the purposes of this review, "full time" is defined as receiving education services with non-disabled peers for at least 79% of the school day, which is the criterion used by the U.S. Department of Education to categorize placement for students with disabilities (Office of Special Education and Rehabilitative Services & Westat, 2007) . General education classroom is defined

as an educational environment that provides access to general education curriculum and includes non-disabled peers.

Implementation of Intervention

Studies included in this review had to identify and clearly describe the intervention being implemented to the extent that the intervention could be implemented by the reader. Ability to implement the intervention is necessary for this systematic review to serve as a resource to educators. Details provided in the study had to include:

a) a description of the intervention,

b) how the intervention was implemented,

c) the context in which it was implemented (general education classroom, resource room, other location)

d) individual vs. small or whole group, and

e) if appropriate, schedule of implementation (frequency, duration, intensity).

These factors are important as interventions may be effective in certain situations but not in others and implementation factors may impact intervention effect. Educators planning to implement these interventions must know if the intervention has been documented as effective in

their particular situation. Studies missing information essential to the replication of the intervention implementation have been excluded from this review.

Intervention Effect

To be included in this review, studies had to show evidence that the intervention examined had an effect on academic outcomes. Educators often place primary emphasis on behavior management for students with EBD and academic instruction becomes a secondary concern (Heward, 2003; Lane, 2004). While behavior is typically a significant concern in educating students with EBD, it is imperative to maintain an academic focus as all students are entitled to an effective academic education, indicated by the IDEA 2004 requirement of a free, appropriate, public education.

The intervention examined in the study may have been behavioral in nature and may have impacted behavioral outcomes, however to be included in this review the study also had to address academic performance by stating academic outcomes. Studies of interventions that address solely student behavior without addressing academic outcomes were excluded. However, studies of interventions that address solely academic outcomes and do not include documented improvement of behavior were included if they met the other inclusion criteria.

To be included in this systematic review, studies had to present explicit documentation of the targeted intervention's relationship to an academic outcome. Although random controlled trials are preferred by the research community (Shadish, Cook, & Campbell, 2002), group studies and random assignment are not always feasible in education settings. Therefore, true experimental design was not a requirement for this systematic review.

Instead, to be included in this review, studies had to meet at least one of the following three criteria:

a. Data was presented through comparison with a control group.

b. Data was presented through systematic observations conducted by the researcher.

c. Data was presented through direct measure (i.e. quizzes, tests, standardized assessments).

Link to Intervention

In addition to presenting data on the effect of the intervention, in the absence of experimental designs studies included in this review had to present evidence or arguments that the intervention examined is linked to an effect on an academic outcome. Although many factors contribute to academic outcomes, and it is impossible to account for all variables, the study must document or

argue that the targeted intervention was at least partially responsible for the student's altered academic performance. This evidence is important to identify interventions worthy of the time and energy necessary for implementation.

<div align="center">Data Analysis</div>

The study design and type of data reported for each study meeting inclusion and exclusion criteria determined the data analysis completed for this systematic review. Possible study designs include experimental, quasi-experimental, non-experimental, and historical (Sproul, 1988). To be included in this review, studies had to be empirical investigations of academic interventions. Therefore descriptive reports, literature reviews, etc., were not included. Although randomized controlled trials (RCT) are preferred for increased validity (Sproul, 1988), this type of study design is not often feasible in the social sciences (Petticrew & Roberts, 2006); therefore RCT was not a requirement for studies to be included in this systematic review.

After completion of the search and application of inclusion and exclusion criteria, studies included in this systematic review were identified. At this point, studies which met all inclusion and exclusion criteria were examined; the small number of studies and the fact that no two studies researched the same intervention meant that it was inappropriate to analysis the data using meta-analysis. Instead, key features and outcomes of these studies are presented in chapter 4 in a narrative review and summarized in a table.

In addition to the studies meeting all inclusion and exclusion criteria, studies were identified and summarized that met all criteria except setting. These studies examined academic interventions for students with EBD, but were conducted in self-contained special education classrooms instead of general education classrooms. These studies are discussed because of the relatively few studies that met all inclusion criteria. With such limited information on interventions for students with EBD educated in general education classrooms, information gained from the studies conducted in special education classrooms may be valuable to educators and future research.

Limitations

A number of limitations in this review will affect the generalizability of the findings and conclusion.

1. Studies that were vague or didn't report information necessary to verify inclusion criteria described here may have been excluded from this review that should have been included.

2. Difficulties were encountered in determining whether student participants in studies were fully included in general education classrooms ($\geq$ 79% of the school day).

3. Student placement was not always clearly identified in the study report. This may be due to variations in placement of the students included in the sample (i.e. student A - general

education for math and language arts, student B - general education for science only). A student's placement is determined by the individual education plan (IEP) team and therefore may be slightly to significantly different for each student included in the study sample. If it could not be determined that a majority of the study participants received 79% or more of their education in a general education setting, the study was excluded from this systematic review.

4. In addition, full text was not available for some studies. Attempts were made to obtain full text through inter-library loan, hard copy of journals, and/or contact with the author. Authors were also contacted for specific study details when this information was not identified in the study report. Although these attempts were made to gather necessary information, it is still possible that studies meeting the inclusion and exclusion criteria exist but were not included in this systematic review because of vague or incomplete study reports.

5. It is also possible that there are other relevant studies that were not categorized using the key words identified in the subject thesaurus.

<u>Delimitations</u>

The design of this review created a number of delimitations that also may affect the generalizability of the findings and conclusions:

1. This systematic review of academic interventions for students with EBD in general education classrooms included studies published between 1975 and the completion of the study search in February, 2008. The initiation of special education as it is known today began with the passage of the Education for All Handicapped Children, (P.L. 94-142) in 1975. In conducting the search, only one study was excluded due to being conducted prior to 1975.

2. Only studies published and indexed by the electronic databases prior to completion of the study search in February, 2008, were captured by the study search. The most recent study captured by the search was a dissertation published in 2008.

3. It is possible that good studies were conducted but not published. This may be especially possible because of the publication bias for studies that show a statistically significant positive effect.

4. Limiting the search to English language publications may have caused relevant studies published in other languages to be missed.

Since the education of students with disabilities in the United States is impacted by national laws that are not in effect in other countries, this review excluded studies conducted in other countries as well as those published in languages other than English. Therefore, results of this study should not be generalized to educational settings beyond the United States

CHAPTER 4: RESULTS

Chapter Introduction

This systematic review examined literature on academic interventions for students with EBD in general education classrooms. In this chapter, results of the study retrieval and screening process are presented. Studies that met all inclusion and exclusion criteria are identified, summarized, and analyzed for threats to internal validity. In addition, studies are identified and summarized that met all inclusion and exclusion criteria except for setting, and were conducted in self-contained special education classrooms. Studies are categorized by learning theories and any patterns revealed related to learning theories are discussed in chapter 5. Research questions of this systematic review are addressed at the end of this chapter.

Study Retrieval Results

Three major databases known for indexing research pertaining to education topics were searched using a comprehensive combination of search terms related to the topic of this review. The databases searched included Educational Resources Information Center (ERIC), PsycINFO, and Dissertation Abstracts. Results of this search identified 713 potentially relevant reports, of which 13 were duplicates. The remaining 700 reports were screened by title and abstract for topic, population, and design relevance; 531 reports were excluded during the title and abstract screening resulting in 168 reports continuing on to Phase I screening.

In order to decrease the probability of excluding studies that could possibly have met inclusion criteria of this review, no reports were excluded for incomplete or vague information at the title and abstract screening stage. In addition, no reports were excluded at this stage based on setting alone (i.e. general education, self-contained special education, etc.), resulting in many studies continuing on that did not meet the inclusion criteria for setting. The rationale for allowing these studies to progress through Phase I screening was to make them available for comparison with the final sample of studies meeting all inclusion criteria.

```
┌─────────────────────┐
│ Potentially relevant│
│  reports identified │                    ┌─────────────────────┐
│                     │                    │ Reports excluded by │
│     (n = 700)       │──────────────────▶ │  title and abstract │
└─────────┬───────────┘                    │       review        │
          │                                │     (n =531 )       │
          ▼                                └─────────────────────┘
┌─────────────────────┐
│ Reports progressing │
│ to Phase I screening│                    ┌─────────────────────┐
│                     │                    │  Reports excluded at│
│     (n = 168)       │──────────────────▶ │   Phase I screening │
└─────────┬───────────┘                    │                     │
          │                                │      (n = 76)       │
          ▼                                └─────────────────────┘
┌─────────────────────┐
│ Reports progressing │
│ to Phase II screening│                   ┌─────────────────────┐
│                     │                    │  Reports excluded at│
│     (n = 92)        │──────────────────▶ │  Phase II screening │
└─────────┬───────────┘                    │                     │
          │                                │      (n = 87)       │
          ▼                                └─────────────────────┘
┌─────────────────────┐
│  Reports meeting    │
│  inclusion criteria │
│                     │
│     (n = 5)         │
└─────────────────────┘
```
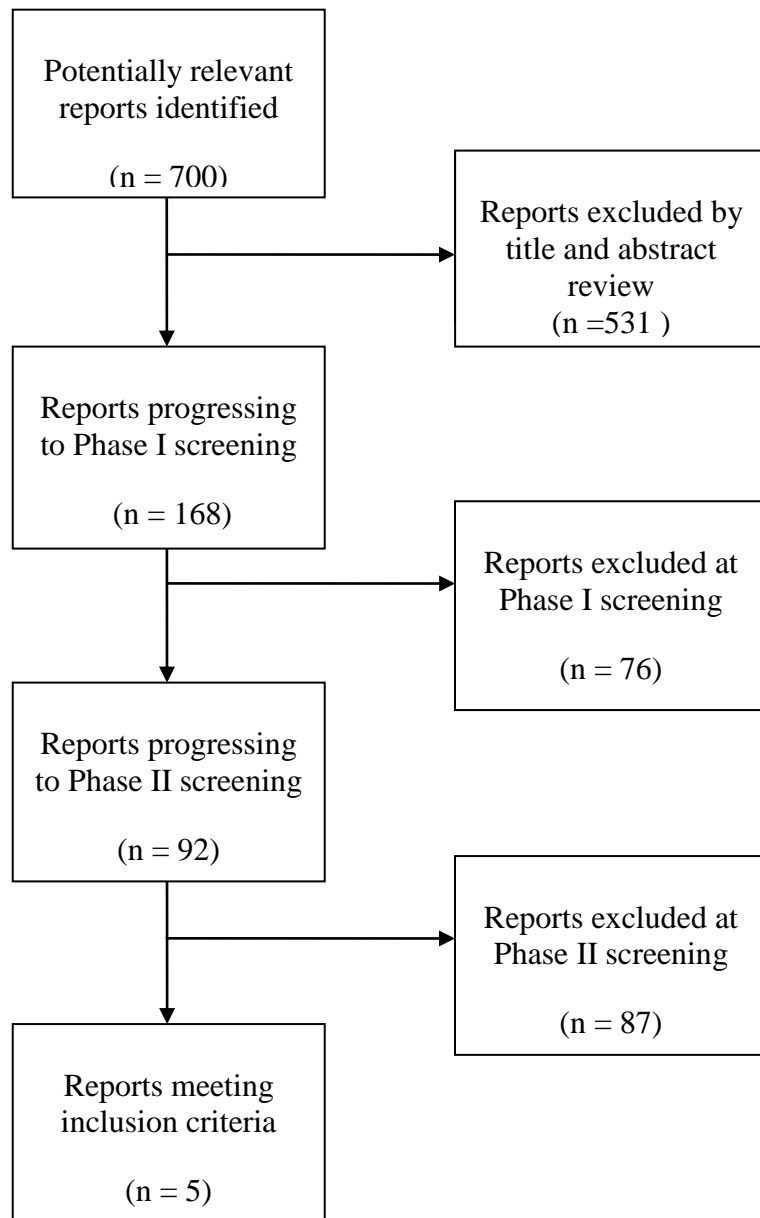
Figure 1. Study Retrieval Flow Chart

Screening: Phase I

After the title and abstract screening was complete, screening was conducted on the remaining 168 reports with the Phase I screening form (Appendix B). At this stage, a database was created and basic information for all 168 studies was entered into the database. Any studies excluded from this point forward remained in the database but were identified as excluded.

During Phase I screening, reports were examined for topic, population, setting, and general design relevance. Reports were excluded if the study did not address students with EBD or take place in a K-12 setting. In addition, reports were excluded where it was clear students in the study sample were not educated full time ($\geq 79\%$) in general education settings. Reports were also excluded if the study was not an empirical examination of an intervention. Seventy six reports were excluded during Phase I screening (Table 4), resulting in 92 studies progressing to Phase II screening.

It is important to note that the Phase I and Phase II screening forms (Appendices B and C) were developed based on a decision making hierarchy. When examining study reports, information critical to inclusion in this systematic review was identified first (i.e. sample and setting). Whenever one of the inclusion criteria was not met, the researcher stopped reading and did not continue to review the study report. For example, if the study did not include sample participants

who were K-12 students identified as EBD, the study was excluded at that point and the researcher did not verify other inclusion or exclusion criteria for that study.

It is also important to note that due to this decision making hierarchy, it is not known how many excluded studies would have met the remaining inclusion or exclusion criteria. Therefore, conclusions and inferences cannot be made about studies excluded from this review. An exception is the group of 19 studies that met all inclusion criteria except setting and are discussed in this chapter; these studies examined academic interventions for students with EBD in self-contained special education classrooms. Although these studies did not meet all of the inclusion criteria, each report was reviewed in its entirety.

Table 4. Phase I Screening – Exclusions by Category

Category	Studies Excluded
Population	31
Setting	25
Intervention	5
Design/methodology	15
Total	76

Screening: Phase II

The remaining 92 studies were screened using the Phase II screening form (Appendix C). At this stage, studies were examined and compared thoroughly to the inclusion and exclusion criteria regarding sample, replicability, intervention effectiveness, and data and verification (Table 5).

Sample

To be included in this review, study samples had to consist of K-12 students identified with EBD as their primary disability, and who were educated full time ($\geq$ 79%) in general education classrooms. Thirty eight studies were excluded during Phase II screening due to not meeting the disability criterion, and 28 studies were excluded due to not meeting the general education criterion.

Of the 38 studies excluded from this review based on study sample disability, 17 included samples consisting of non-disabled students from the general student population, one of which included one student with EBD. Eight studies were excluded because study samples included only students who were at-risk of failing or were considered "behavior problems," but who were not identified as EBD. Nine of the studies excluded for sample disability included samples of students identified with severe emotional disturbance (SED). Students with SED are not included in the category of mild to moderate disabilities due to the severity of the disability. In addition,

all nine of these studies could have been excluded for setting as these students were educated in

self-contained classrooms, a common practice for educating students with SED. The remaining

four studies excluded from this review based on sample disability included samples consisting of

students with other mild to moderate disabilities (SLD, EMH, and SLI) and did not include

students with EBD.

Twenty eight studies were excluded from this review during Phase II screening based on sample

setting. Nine of these studies took place in alternative settings such as separate schools, day

treatment facilities, and residential facilities. Nineteen studies included students with EBD who

were educated in self-contained special education classrooms; four of these studies included

students who were partially mainstreamed into general education settings but not for 79% or

more of the school day, as defined by the review inclusion criteria. These nineteen studies that

took place in self-contained or mainstream settings will be discussed in further detail later in this

chapter.

Implementation of Intervention

To be included in this review, study reports had to identify and clearly describe the intervention

being implemented to the extent that it could be implemented by the reader. Details had to

include a clear description of the intervention, how it was implemented and in what context;

whether implemented individually, or in small or whole group; and the schedule of

implementation. No studies were excluded from this review based on implementation criteria

alone. Among the studies remaining in the sample at this stage of the screening process, study

reports were generally clear in describing the intervention.

Intervention Effect

To be included in this review, studies had to show evidence of intervention effect or lack of

effect in changing academic performance. The intervention may be related to behavior as well as

academics, however may not be connected solely to behavior. Only one study, Hogan and Prater

(1993), was eliminated based on this criterion. In this study, Hogan and Prater examined the

effects of peer tutoring and self-management training on on-task, disruptive behaviors, and

academics. The study sample included two high-school students: the tutor was identified as EBD

and the tutee was identified as SLD. Data was collected on disruptive and on-task behaviors for

both students, however academic data was only collected for the tutee. Therefore this study was

eliminated as there was no documented relationship between the interventions and academics for

the tutor who was the only student included in this study sample with EBD. Data did show

improvement in behavior for both the tutor and tutee, as well as academic improvement in the

tutee (Hogan & Prater, 1993).

Data and Verification

Studies included in this review had to present explicit documentation of the intervention's

relationship to academic performance. The following three categories define possible levels of

verification:

a. Data was presented through comparison with a control group.

b. Data was presented through systematic observations conducted by the researcher.

c. Data was presented through direct measure (i.e. quizzes, tests, standardized assessments).

Studies were excluded from this review if they failed to meet at least one of these three criteria.

A total of three studies were excluded from this review for not meeting the data and verification

criteria as described above.

Link to Intervention

Studies included in this review had to include evidence or arguments that the intervention

examined is connected to the outcome of altered academic performance. The study had to

document or argue that the targeted intervention was at least partially responsible for the

student's change in academic performance. This criterion was important because only one

included study used experimental design and no studies used quasi-experimental design, so the

ability of the author to at least argue or justify the relationship between the intervention and the

effect was necessary. All studies meeting remaining criteria for inclusion documented the link to intervention adequately and therefore no studies were excluded based on this criterion alone.

Other Exclusions

Seventeen additional studies were excluded from this review during the Phase II screening for design and methodological reasons. Nine of these studies were literature reviews, syntheses, or meta-analyses; three were descriptive reports with no intervention; and one was a "hypothetical case study"(Jolivette, Stichter, & McCormick, 2002). Eight studies were eliminated because the type of intervention implemented (i.e. mental health services, speech/language therapy) fell outside of the normal practices of either special education or general education teachers.

The majority of these seventeen studies excluded for other reasons should have been excluded during the title and abstract screening, however they progressed through to the Phase II screening as the information was either not available in the abstract or was not clear and required further investigation. Throughout the screening process, any study in which information pertaining to inclusion or exclusion criteria was unclear remained in the review until attempts were made to clarify information; information was obtained through either full-text articles or author inquiries. In some cases, information was not able to be obtained and studies were excluded based on vague or unclear reporting. After applying all criteria to the search results, five studies met all inclusion criteria and remained in this review.

Table 5. Phase II Screening – Exclusions by Criteria

Criteria	Studies Excluded
Sample: disability	38
Sample: setting	28
Implementation of Intervention	0
Data and Verification	3
Link to Intervention	1
Other (design, methodology)	17
Total	87

Inter-rater Reliability

After the search was completed, 10% (17 studies) of the 168 reports that remain after title and abstract screening were selected at random. These seventeen studies were screened by a second researcher using the Phase I and Phase II screening forms. This reliability check of inclusion and exclusion criteria resulted in 100% agreement between the first and second researchers.

Studies Meeting Inclusion Criteria

After the Phase II screening was complete, the sample for this review included five studies (Table 6). The five studies that met all inclusion criteria examined one social learning theory intervention, cross-age tutoring (Maher, 1986), and four cognitive interventions: *Reasoning and Writing*, discovery teaching, teacher versus computer modeling in reading, and the use of guided notes to aid in retention of science concepts (Anderson & Keel, 2002; Bay, Staver, Bryan, & Hale, 1992; Dawson, Venn, & Gunter, 2000; Patterson, 2005).

Cross-age tutoring is categorized as a social learning theory intervention because it involves learning through modeling and observation (tutee observation of tutor modeling), as well as reciprocal interaction between the participant and his/her social system (tutee and tutor); this reciprocal interaction is a defining characteristic of the social learning theory. The cross-age tutoring study conducted by Maher (1986) included 16 high-school students with EBD as tutors of 8 elementary students identified as EMH. To prepare for the tutoring sessions, tutors received training from high school counselors in three 2-hour workshops, and participated in 15-minute weekly planning meetings with the special education teachers of the tutees. Tutoring sessions took place twice weekly over a period of 10 weeks for a total of 20 tutoring sessions. Tutors engaged in presenting information, question answering, instructing, and socially reinforcing correct responses and positive work behaviors of tutees. Results for tutors showed increased

assignment completion and test accuracy, and decreased discipline referrals; these results were maintained into the next grading period after the tutoring sessions ended.

One of the studies that examined a cognitive learning theory intervention is Anderson and Keel's (2002) study of a direct instruction in writing. Although direct instruction contains some elements of behavioral learning theory (i.e. guided practice, feedback), this intervention is categorized as a cognitive learning theory intervention because it is concerned with the student's thought processes. In the Anderson and Keel study, six students with SLD and four students with EBD were instructed in writing skills using the *Reasoning and Writing* program, Level C, for a six-week period. *Reasoning and Writing* utilizes direct instruction to teach writing in a highly structured and organized manner. Students participating in this study were enrolled in fourth or fifth grade general education classrooms and all received special education services in writing instruction. *Reasoning and Writing* instruction was provided in a separate resource room by a special education teacher with eight years teaching experience. Lessons were presented daily for 35 to 50 minutes. Students were administered the Spontaneous Writing Scale of the Test of Written Language – 2 (TOWL-2) as both pre and posttest. Results of this study include an overall improvement in written language for the study participants (*ES* = 0.36), indicating the *Reasoning and Writing* instructional program had a positive effect on this population.

Another study investigating a cognitive learning theory intervention, and the only experimental study that met inclusion criteria for this review, compared the effect of direct instruction versus discovery teaching in general education science classrooms (Bay, Staver, Bryan, & Hale, 1992). Direct instruction involved teacher modeling and demonstration of concepts followed by guided and independent practice with feedback provided to students. Discovery teaching used a student-centered approach to learning based on student inquiry and systematic problem solving. At the time of the Bay et al. study, both discovery teaching and direct instruction had been proven effective in acquisition, retention, and generalization of science concepts with non-disabled students, however research completed with students with mild to moderate disabilities was limited (Bay et al., 1992). The sample for this study consisted of ten students with SLD and six students with EBD, as well as 91 non-disabled students. Students were randomly assigned to either the direct instruction or discovery teaching condition in triads consisting of one student with SLD or EBD and two non-disabled students. Measures for this study included both a written science test and a performance-based assessment. Results showed no difference between the direct instruction and discovery learning conditions in immediate achievement or generalization of science concepts; results did indicate discovery teaching was more effective than direct instruction in improving retention of concepts.

The third study investigating a cognitive learning theory intervention was Dawson, Venn, and Gunter's (2000) study of teacher versus computer modeling of reading instruction. In this study, researchers used an alternating treatment design to examine the effectiveness of a reading model

presented by the teacher as opposed to a reading model presented by a digital-electronic computer voice. This intervention is supported by cognitive learning theory as it involves the development of language and reading schemata. Four students with EBD from first and second grade general education classrooms participated in this study. Students read part of a story into a tape-recorder after hearing the story read by either the teacher or a digital-electronic computer voice, or without hearing the story. Reported results show students read with greater fluency after hearing the teacher model rather than not hearing the story or hearing it read by the computer, indicating the teacher model is more effective in improving reading fluency.

The final study investigating a cognitive learning intervention was Patterson's (2005) study of using guided notes in raising science achievement for African-American students with EBD. The use of guided notes is supported by cognitive learning theory as it involves the thought processes and development or addition of schema (Ausubel & Eric Information Analysis Center for Science Education, 1970). One student with SLD and seven students with EBD from ages 9 to 11 participated in this study. Participants were provided guided notes prepared by the teacher and were to fill in the blanks during the lesson presentation. Measures were taken on accuracy of notes and science quiz scores, and results showed all students made "sufficient gains to validate the use of guided notes" (Patterson, 2005).

Table 6. Academic Interventions for Students with EBD in General Education Classrooms

Study	Intervention	Participants	Setting	Dependent Variable	Academic Achievemet Measure	Results
Anderson (2002)	*Reason and Writing, Level C*	6 EBD, 1 SLD, 1 EBD/SLD; Grades 4-5	General education & resource	Written language	TOWL-2	Improvement overall (mean *ES* = 0.36)
Bay, Staver, Bryan, & Hale (1992)	Discovery teaching	6 EBD, 10 SLD; Grades 4-6	General education & resource	Science achievement (immediate, retention, generalization)	Written & performance based assessments	No difference in immediate achievement or generalization, improved retention
Dawson, Venn, & Gunter (2000)	Teacher vs. computer model	4 EBD Grades 1-2	General education & resource	Reading fluency	Recorded reading sample	Teacher model increased fluency greater than computer
Maher (1986)	Cross-age tutoring	16 EBD Grades 9-12	General education & resource	General academic & behavioral performance	Assignment completion, quiz scores, attendance, disciplinary referrals	Increased work completion, quiz accuracy, & attendance; decreased referrals
Patterson (2005)	Guided notes	7 EBD, 1 SLD Grade 4	General education	Academic performance in science	Accuracy of notes, quiz scores	Increased note accuracy (ES = 0.71) & increased quiz scores (ES = 0.97)

Threats to Internal Validity

Internal validity refers to the likelihood that the outcome of the dependent variable can be attributed to the intervention (Patten, 1997). One way to reduce the threat to internal validity is to use experimental study design with randomized controlled trials (RCT) (Fink, 2005; Patten, 1997). When studies do not employ experimental design with randomized controlled trials, threats to internal validity may be higher. As presented by Fink (2005) and Patten (1997), threats to internal validity include:

- History: participants experiencing certain events may bias study results (i.e. students in a study measuring science achievement watch a program on television that pertains to the topic addressed by the study, and therefore do better on the assessment)

- Maturation: natural, biological, or psychological changes having no relation to the intervention that occur within the participants over the course of the study, impacting outcomes (i.e. intellectual maturity)

- Testing: students learn from pre-test or the pre-test in some other way prepares the student for the intervention (occurs only in pre-post design)

- Instrumentation: the post-test is easier than the pre-test resulting in inaccurate measure favoring the intervention

- Regression: study participants selected based on extreme scores are not likely to score as low when retested, even without an intervention (regression to the mean)

- Mortality: study outcomes may be impacted by loss of participants (i.e. move away, choose not to participate); as a group, study participants who drop out tend to be different than study completers (i.e. participants with a history of lower achievement may be more likely to drop out)

- Selection: refers to how study participants were selected and grouped; randomized selection and grouping reduces this threat

Table 7 presents an overview of threats addressed by the five studies that met inclusion and exclusion criteria for this systematic review. One study, Bay et al. (1992), addressed most threats to internal validity by utilizing a control group in an experimental study design. The remaining four studies did not use control groups and therefore had increased risk to internal validity.

Table 7. Threats to Internal Validity of Studies Conducted in General Education Classrooms

Study	History	Maturation	Testing	Instrumentation	Regression	Mortality	Selection
Anderson (2002)	O	O	X	X	O	X	n/a
Bay, Staver, Bryan, & Hale (1992)	X	X	n/a	n/a	X	O	X
Dawson, Venn, & Gunter (2000)	O	O	n/a	n/a	O	O	n/a
Maher (1986)	O	O	n/a	n/a	O	X	n/a
Patterson (2005)	O	O	n/a	n/a	O	O	n/a

Note. Table based on study reports. Studies may have addressed threats to validity adequately even if not addressed in study report.
Key. X- threat was addressed and should not have significantly impacted study outcome; O - threat was not addressed and possibly impacted study outcome; n/a - threat is not applicable and should not have significantly impacted study outcome

Studies Excluded Based on Setting

The purpose of this systematic review is to identify academic interventions that had an effect on students with EBD in general education classrooms. The intention was to present only studies whose participants were educated full time ($\geq$ 79%) in general education classrooms, however the literature meeting all inclusion criteria revealed only five studies. It was therefore determined studies that met all inclusion and exclusion criteria except for setting, and examined academic interventions for students with EBD in self-contained special education classrooms, would also be summarized. Because these studies met all inclusion and exclusion criteria except for setting, the findings revealed by these studies may provide valuable information for educators and researchers about academic interventions potentially effective for students with EBD in general education classrooms.

Nineteen studies were excluded from this review due to the educational placement of study participants in self-contained special education classrooms. Of these 19 studies, five examined cognitive learning theory interventions (Table 8), five examined behavioral learning theory interventions that addressed academic outcomes (Table 9), and nine examined social learning theory interventions (Table 10). These studies are summarized below.

Interventions Based on Cognitive Learning Theory

Five studies that addressed academic interventions based on cognitive learning theory were

identified in this review (Cooke, Guzaukas, Pressley, & Kerr, 1993; Jolivette, Wehby, & Hirsch,

1999; Perry & Wake County Public School System, 1986; Rivera, 2003; Yell, 1993). Two of

these studies examined the use of interventions to increase sight-word acquisition and decrease

behavior problems. Rivera (2003) examined the use of pupil illustrated pictorial prompts (PIPP)

and reported increased sight-word acquisition, however no significant change in behavior was

observed. Yell (1993) compared three instructional strategies: direct instruction, personalized

system of instruction, and independent practice; dependent variables included attention to task,

sight words learned, and interfering behaviors. Results of Yell's study indicate direct instruction

was more effective in teaching sight words, resulting in higher rates of attention to task and

lower rates of interfering behaviors.

The remaining three cognitive learning theory intervention studies investigated various strategies

and reported mixed results. Cooke et al. (1993) examined a drill and practice ration of 30% new

information to 70% review in spelling, multiplication, and reading; results indicate this

intervention is effective in learning math facts, however no significant difference was found for

spelling and reading. Jolivette et al. (1999) identified specific strategies for three students with

EBD based on inventory of each student's specific needs and interests, resulting in improved

math accuracy for all participants. Perry et al. (1986) examined instrumental enrichment for 324

students with mild to moderate disabilities and found no significant change in academic

performance, absenteeism, or behavior problems.

Table 8. Cognitive Learning Theory Interventions in Special Education Classrooms

Study	Intervention	Participants	Setting	Dependent Variable	Measure	Results
Cooke & others (1993)	Interspersal drill and practice, 30% new/70% review	17 EBD, SLD, & EMH Ages 9-17	Special education, self-contained	Spelling, multiplication, reading fluency	Reading assessments, objective tests	Gains in math facts; no significant change in ready fluency or spelling
Jolivette, Wehby, & Hirsch (1999)	Academic strategy identification	3 EBD Ages 9-10	Special education, self-contained	Math accuracy	Math worksheets	Improved math accuracy for all
Perry & others (1986)	Instrumental enrichment	324 EBD, SLD, & EMH Grades 7-9	Special education, self-contained	Academic performance, absenteeism, behavior problems	Peabody Picture Vocabulary Test (PPVT), Weschler Intelligence Scale for Children (WISC), GPA, attendance records, teacher observation	No significant change in academic performance, absenteeism, or behavior problems

Table 9. Cognitive Learning Theory Interventions in Special Education Classrooms (cont.)

Study	Intervention	Participants	Setting	Dependent Variable	Measure	Results
Rivera (2003)	Pupil Illustrated Pictorial Prompt (PIPP)	9 EBD Grades 2-3	Special education, self-contained	Sight-word acquisition, behavior problems	Reading assessment, Behavior Assessment Scale for Children (BASC)	Increased sight-word acquisition; no significant change in behavior
Yell (1993)	Direct instruction (DI), personalized system of instruction (PSI), and independent practice (IP)	16 EBD Grades 4-6	Special education, self-contained	Sight-word acquisition, attention to task, interfering behaviors	Time sampling, reading of randomly presented sight words from Dolch Word list	Direct instruction was most effective in teaching sight words, resulting in increased attention to task and decreased interfering behaviors

Interventions Based on Behavioral Learning Theory

Five studies that did not meet inclusion criteria for this systematic review investigated interventions based on behavioral learning theory. Three of these five studies addressed various forms of self-management. Self-management can include self-monitoring, self-evaluation, and self-reinforcement. Self-management is categorized in this review as a behavioral learning theory intervention as it includes identifying and monitoring observable behavior and is not concerned with the thought process or any underlying feelings associated with the behavior (Butler & Winne, 1995; Winne, 1995). All three studies examining self-management strategies for students with EBD in self-contained special education classrooms reported positive academic results as well as behavioral improvements (Carr & Punzo, 1993; Lazarus, 1993; McLaughlin, 1984).

Two other studies examined behavioral interventions (Auerbach, 1980; Mastropieri, Jenne, & Scruggs, 1988). In the Auerbach (1980) study, students identified their own behaviors that interfered with academic success and compared those to teacher identified behaviors. Results indicate identifying and discussing behaviors had a positive effect on overall academic independence as measured by the Deveraux Elementary School Behavior Rating Scale. Mastropieri et al. (1988) used a level system to reinforce appropriate behavior, and measured both behavioral and academic outcomes. Level systems typically include successive behavioral targets (levels), and accumulated rewards and privileges for reaching each level. Mastropieri et

al. reported positive outcomes for their level system intervention: increased assignment

completion and on-task behavior, as well as decreased disruptive behavior.

Table 10. Behavioral Learning Theory Interventions in Special Education Classrooms

Study	Intervention	Participants	Setting	Dependent Variable	Measure	Results
Auerbach (1980)	Student and teacher identification of interfering behaviors	5 EBD Elementary	Special education, self-contained	Academic independence	Devereaux Elementary School Behavior Rating Scale, Student Inventory Rating Scale	Increased academic independence
Carr & Punzo (1993)	Self-monitoring	3 EBD Ages 13 to 15	Special education, self-contained	Academic achievement, productivity, on-task behavior	Work samples, teacher observation	Academic improvement in all subjects; increased productivity and accuracy; increased on-task behavior
Lazarus (1993)	Self-monitoring, self-evaluation, self-reinforcement	18 EBD Ages 11 to 13	Special education, self-contained	Independent math task accuracy	Work samples	Significant improvement in math accuracy
Mastropieri & others (1988)	Level system	19 EBD & SLD	Special education, resource setting	Assignment completion, on-task behavior, disruptive behavior	Work samples, teacher observation	Increase in assignment completion; increase in on-task behavior; decrease in disruptive behavior
McLaughlin (1984)	Self-recording, self-recording plus consequences	12 EBD Ages 10-12	Special education, self-contained	Assignment completion, on-task behavior	Work samples, teacher observation	Significant increases in assignment completion and on-task behavior for both groups

Interventions Based on Social Learning Theory

A total of nine studies that did not meet inclusion criteria based on setting investigated interventions based on social learning theory. Six of these studies investigated the use of peer tutoring for students with EBD in self-contained special education classrooms. In peer tutoring, one student provides instruction or guided practice on an academic task to another student. Tutoring can include same-age tutors or cross-age tutors where the tutor is older than the tutee and thereby becomes the "expert" (Scruggs & Osguthorpe, 1986). Reverse-role tutoring is when the student with the disability tutors a non-disabled student (Shisler, Top, & Osguthorpe, 1986). Tutoring is supported by Bandura's theory of social learning as it provides opportunities for learning through modeling and observation (Bandura, 1991).

Peer tutoring has been found to be effective academically for both tutors and tutees from the general population and is potentially effective in preventing school failure (Cohen & Kulik, 1981). Research involving students with mild to moderate disabilities, though limited, also indicates positive results (Scruggs & Osguthorpe, 1986). All of the six studies identified in this review found peer tutoring to be have a positive academic effect for students with EBD in self-contained special education classrooms (Bell, Young, & Blair, 1990; Birnbaum, 1990; Franca, Kerr, & Reitz, 1990; Scruggs & Osguthorpe, 1986; Shisler, Top, & Osguthorpe, 1986; Top & Osguthorpe, 1987). Results of impact on affective variables such as self-esteem and school

attitude were mixed (Birnbaum, 1990; Franca, Kerr, & Reitz, 1990; Scruggs & Osguthorpe, 1986; Shisler, Top, & Osguthorpe, 1986; Top & Osguthorpe, 1987).

In addition to the six studies that investigated peer tutoring, three other studies examined social-cultural interventions in self-contained special education classrooms or part time in general education classrooms (Gromme-Clark, 1995; Maher, 1987; O'Melia & Rosenberg, 1994). Gromme-Clark (1995) and Maher (1987) investigated programs that involved collaboration of teacher and students in instructional planning; both studies reported positive academic outcomes; however, Gromme-Clark reported no change in student attitude or self-esteem. The remaining study (O'Melia & Rosenberg, 1994) examined the use of cooperative homework teams (CHT) and found this intervention had a positive effect on homework completion and accuracy, however did not impact overall math achievement.

Table 11. Social Learning Theory Interventions in Special Education Classrooms

Study	Intervention	Participants	Setting	Dependent Variable	Measure	Results
Bell & others (1990)	Class-wide peer tutoring	6 EBD, 1 SLD, 52 non-disabled Mean age = 16	General education (< 79%)	History test score	History test	All groups: statistically significant increase in test scores
Birnbaum (1990)	Same-age tutoring	14 EBD, 14 non-disabled Ages 13-14	Special education, self-contained	General academic achievement, student self-concept, social interaction	Academic tests, homework, student journals, teacher observation	Students with EBD: academic gains; improved self-concept and attitude toward school
Franca & others (1990)	Same-age tutoring	8 EBD Ages 13-16	Special education, self-contained	Math performance and attitude; social interaction, student self-concept	Work samples, Piers-Harris Children's Self-Concept Scale, peer rating scales	Tutor and tutee: increased academic performance; improved math attitude; improved tutor-tutee social interaction; no change in social status or student self-concept

Table 12. Social Learning Theory Interventions in Special Education Classrooms (cont.)

Study	Intervention	Participants	Setting	Dependent Variable	Measure	Results
Gromme-Clark (1995)	Foxfire pedagogy	6 EBD Elementary	Resource, general education (< 79%)	Writing skills, student self-esteem, student attitude towards school	Peabody Individual Achievement Test – Revised, Piers-Harris Children's Self Concept Scale, student self-evaluation survey	Writing skills increased; no change in self-esteem or school attitude
Maher (1987)	Goal Oriented Approach to Learning (GOAL)	49 EBD Mean age = 15.4	General education (< 79%)	Student attainment of classroom instructional goals	Objective test of student goal	Statistically significant increase in student goal attainment
O'Melia & Rosenberg (2008)	Cooperative Homework Teams (CHT)	179 EBD or SLD Grades 6-8	Special education, self-contained	Rate of math homework completion, math homework accuracy, math achievement	Math homework samples, California Achievement Test (CAT)	Increased homework completion and accuracy; no change in math achievement

Table 13. Social Learning Theory Interventions in Special Education Classrooms (cont.)

Study	Intervention	Participants	Setting	Dependent Variable	Measure	Results
Scruggs & Osguthorpe (1986) *Experiment 1*	Cross-age tutoring	35 EBD, 12 SLD Grades 1-6	Special education, self-contained	Reading skills, school attitude	Woodcock Johnson Psycho-educational Battery; Attitude Toward School Measures	Tutors: significant improvement in word attack; tutees: significant improvement in all areas of reading; significant gain in attitude for tutees only
Experiment 2	Same-age tutoring	31 EBD and SLD	Special education, self-contained	Reading skills, school attitude	Woodcock Johnson Psycho-educational Battery; Attitude Toward School Measures	Tutor and tutee: significant gains in all reading areas; no significant effect on attitude
Shisler, Top, & Osguthorpe (1986) *Experiment 1*	Reverse-role tutoring	23 EBD, 29 non-disabled Elementary	Special education, self-contained	Reading achievement, student self-esteem	Woodcock Johnson, Inferred Self-concept Scale	Significant improvement in reading achievement for all; no significant change in self-esteem

Table 14. Social Learning Theory Interventions in Special Education Classrooms (cont.)

Study	Intervention	Participants	Setting	Dependent Variable	Measure	Results
Experiment 2	Reverse-role tutoring	10 EBD, 30 gifted Elementary	Special education, self-contained	Attitude of gifted students towards peers	Taped interviews	Gifted students had more positive attitudes towards students with EBD
Top, & Osguthorpe (1987)	Reverse-role tutoring	33 EBD, 45 SLD, 82 non-disabled Grades 1, 4-6	Special education, self-contained and resource	Reading achievement, student self-esteem	Woodcock Johnson Psycho-educational Battery, self-esteem scales	Significant improvement in reading achievement for all; no significant change in self-esteem

Results of Research Question

This review addressed the following questions:

Research Question

What interventions are effective in improving academic performance for students with emotional/behavioral disorders (EBD) who are being educated full time in general education K-12 classrooms?

Based on the results of this review, it can be cautiously concluded that cross-age tutoring, *Reasoning and Writing* instruction, discovery teaching, and the use of guided notes had a positive effect in improving academic performance for students with EBD in general education classrooms. In addition, it can be concluded that teacher modeling is more effective than computer modeling in teaching reading fluency. Each study contained small samples (16 or less) and therefore replication of studies is necessary to increase validity of results and draw stronger conclusions about effectiveness.

Sub-question A

How are these interventions being implemented?

With the exception of the cross-age tutoring intervention (Maher, 1986), all interventions were implemented by either the general education or special education teacher. Although the tutors participating in the cross-age tutoring intervention were being educated in general education classrooms, tutor training took place in a resource room and the tutoring intervention took place

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in the tutees' special education self-contained classroom. Patterson's (2005) guided notes intervention was implemented in the general education classroom; intervention implementation for the remaining four studies that met inclusion criteria took place in a separate resource room or special education classroom.

Sub-question B

In what context are these interventions successful?

Each of the five studies that met all inclusion criteria included students with EBD who were educated 79% or more in the general education classroom. Implementation of the intervention, however, took place in separate resource or special education settings with the exception of Patterson's (2005) study on use of guided notes. Therefore, it is inappropriate to conclude interventions would have the same effect if implemented in general education classrooms.

Sub-question C

Does the intervention address behavioral performance in addition to academic concerns?

Of the five studies that qualified for inclusion in this review, only one addressed behavioral performance in addition to academic concerns. Maher's (1986) study of cross-age tutoring reported increased attendance and decreased referrals for tutors.

CHAPTER 5: DISCUSSION

Chapter Introduction

The purpose of this systematic review was to identify academic interventions effective for students with EBD in general education classrooms. A comprehensive search of literature was conducted to capture all studies potentially relevant to this review. Inclusion and exclusion criteria were applied and studies included in this review were summarized; also summarized were studies excluded based only on setting. This chapter will discuss findings and implications for educators and researchers.

The major findings of this systematic review were:

1. Only five studies met the inclusion and exclusion criteria, indicating very few studies have been conducted examining academic interventions for students with EBD in general education classrooms.

2. Four of the five studies that met all inclusion criteria were cognitive learning theory interventions and reported positive academic outcomes (*Reasoning and Writing*, discovery teaching, teacher versus computer modeling, and guided notes); the fifth study that met all inclusion criteria examined a social learning theory intervention, cross-age tutoring.

3. Peer tutoring and self-management strategies have a positive effect on academic performance of students with EBD in self-contained special education classrooms.

The following sections will discuss these findings, limitations of this systematic review, and implications for educators and future research.

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Findings That Confirm Prior Research and Scholarship

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Studies identified in this systematic review of academic interventions for students with EBD in general education classrooms were categorized by cognitive, behavioral, and social learning theories. These learning theories provided a framework to organize results of the systematic review (Schunk, 2004). Findings that confirm prior research are discussed here according to learning theory.

Cognitive learning theory explains learning as the integration of new knowledge with currently existing schema and the creation of new schema. Findings from studies investigating cognitive interventions are consistent with this theory. Of the five studies that met all inclusion criteria of examining academic interventions for students with EBD in general education settings, four investigated interventions supported by cognitive learning theory. Bay et al. (1992) examined discovery teaching in science classrooms and found students had better retention of science

concepts with this instructional method. This finding is consistent with the assertions of Svinicki (1998) that active and meaningful learning, an essential component of discovery teaching, results in stronger connections between new and current schema and therefore increased retention of academic concepts. The use of guided notes by Patterson (2005) is also consistent with cognitive learning theory and the work of David Ausubel (1970) who introduced the use of advance organizers. Advance organizers provide the learner with a framework to connect new information to current schema (Ausubel & Eric Information Analysis Center for Science Education, 1970). Patterson's guided notes provided study participants with a means to organize new science concepts and thereby better integrate these new concepts with current schema. Patterson found students retained information longer and performed better on science quizzes with the use of guided notes.

In addition to the four studies described above that investigated cognitive learning theory interventions for students with EBD in general education classrooms, five studies identified in this review investigated cognitive learning theory interventions for students with EBD in special education classrooms. Cooke et al. (1993) examined a new to review ratio of 30% new concepts presented and 70% review, compared to 100% new concepts presented, and found the 30% to 79% ratio resulted in greater gains in math facts. This finding is consistent with the cognitive learning theory principle that assisting learners in making connections between new information and what they already know improves understanding and retention (Svinicki, 1998). Results of the cognitive learning theory interventions described here indicate these interventions may be

effective for students with EBD in self-contained classrooms. This finding is consistent with cognitive learning theory.

Studies examining interventions supported by behavioral learning theory investigated primarily self-management interventions. Self-management interventions include self-monitoring, self-evaluation, and self-reinforcement. Results of these studies indicate self-management interventions have positive effect on academic outcomes for students with EBD in self-contained classrooms. This finding is consistent with behavioral learning theory and previous research on self-management (Bandura, 1991; Hamilton, 2007).

Nine studies identified in this review examined social learning theory interventions for students with EBD in self-contained classrooms. Six of these studies addressed peer tutoring and positive academic effects for students with EBD in self-contained classrooms. This finding is consistent with social learning theory as well as prior research on peer tutoring (Cohen & Kulik, 1981) . Other studies of social learning theory interventions reporting positive outcomes include Goal Oriented Approach to Learning and cooperative homework teams.

Findings That Contradict Prior Research and Scholarship

Of the five studies that met all inclusion and exclusion criteria for this systematic review, none contradicted prior research and scholarship in the areas of social, behavioral, and cognitive learning theories (Ausubel & Eric Information Analysis Center for Science Education, 1970; Bandura, 1991; Frey & George-Nichols, 2003). In addition, no findings were contradictory to prior academic intervention research (Hamilton, 2007; Svinicki, 1998). This finding may be due to the limited number of empirical studies conducted on academic interventions for students with EBD in general education classrooms.

Studies included in this review did not report data disaggregated by students with multiple disabilities (i.e. students with EBD, students with EBD and SLD, etc.). Bay et al. (1992) reported disaggregated data by disability (i.e. SLD, EBD), however, it is likely several of the students with EBD had multiple disabilities. Approximately 65% of all students with EBD are reported to have attention deficit disorder (ADD) or attention deficit/hyperactivity disorder (ADHD) (Wagner et al., 2005). In addition, 25 to 30% of students with EBD are identified as having a learning disability (Wagner et al., 2005). Without disaggregating data by specific and multiple disabilities, it is difficult to determine if the intervention addresses characteristics of the student's emotional and behavioral disability or of the learning disability. Data in the included study reports are not disaggregated by specific or multiple disabilities; therefore researchers are not acknowledging the differences among students with EBD.

The results of this systematic review indicate that few empirical studies investigating academic interventions for students with EBD support inclusion in the general education classroom. Although federal education policy makers have encouraged inclusion through legislation such as NCLB 2001 and IDEA 2004, little empirical support exists for this position. It is not enough to legislate that students with disabilities should be included in general education classrooms if the general education teachers do not have research-based teaching methods to help those students succeed. Additional research investigating academic interventions for students with EBD in general education classrooms is necessary to provide empirical evidence that will either support or refute inclusive practices.

Findings That Add to the Field

Findings that add to the field include: (a) a paucity of literature exists on academic interventions for students with EBD in general education classrooms; (b) academic interventions for students with EBD educated full time in general education classrooms are more likely to be implemented in separate resource rooms and special education classrooms than in the general education classroom; (c) academic interventions for students with EBD in general education classrooms are more likely to be based on cognitive learning theory, whereas academic interventions for students with EBD in self-contained special education classrooms are more likely to be based on behavioral or social learning theories; (d) more research with high internal and external validity is needed to investigate academic interventions for students with EBD in general education classrooms; and (e) this systematic review establishes a model for future systematic reviews in

the field of special education and demonstrates the value of systematic reviews in clarifying the literature.

Results of this review document that there is a paucity of research investigating academic interventions for students with EBD in the general education classroom. Of the 700 reports captured in the study search for this systematic review, only five studies were identified that met all inclusion and exclusion criteria; these five were the only studies that examined academic interventions for students with EBD in general education classrooms. The fact that so few studies were conducted in general education classrooms may be due to the low prevalence of students with EBD who have been educated in general education classrooms in the past; this has most likely resulted in difficulty obtaining enough participants for an optimal sample size of students with EBD in general education settings. As more students with EBD are educated full time in general education classrooms, establishing optimal sample sizes may be less challenging.

In addition to the paucity of literature this systematic review found that even when study participants were educated full time in general education classrooms, interventions were frequently implemented in separate resource rooms and special education classrooms. To be included in this review, study participants had to be educated in general education classrooms at least 79% of the school day. Even so, for all five studies that met criteria for inclusion in this review, intervention training for student participants took place in resource rooms. In some cases,

most or all of the intervention process took place in a resource room or special education classroom. In the study of *Reasoning and Writing* (Anderson & Keel, 2002), it appeared that the intervention instruction, application, and assessment of academic outcomes all took place in a resource room and were facilitated by a special education teacher. Participant tutor training for Maher's (1986) study of cross-age tutoring took place in a resource room and the tutoring took place in a self-contained special education classroom. An exception is Patterson's (2005) study of guided notes, in which the participants applied the guided note strategy in general education science classrooms. It is interesting to note that the Patterson study is also the most current of the five studies included in this review; perhaps the setting for this study is reflective of current inclusion practices.

Among the studies included in this review, an interesting pattern of intervention type and education setting emerged. Results of this systematic review indicate that cognitive interventions are more likely to be implemented in general education classrooms, while behavioral and social learning theory interventions are more likely to be conducted in self-contained special education classrooms (Table 11). Of the five studies that met all inclusion criteria for this review, four examined cognitive learning interventions and one examined a social learning theory intervention; none of the studies that met all inclusion criteria and were conducted in general education classrooms examined behavioral interventions. Of the 19 studies that met all inclusion criteria except setting and were conducted in self-contained special education classrooms, only five examined cognitive interventions, another five examined behavioral interventions, and nine

examined social learning theory interventions. This review documents that cognitive learning

theory interventions were more likely than behavioral or social interventions to be implemented

in general education classrooms in the included studies; what is not clear is whether this trend is

limited to the studies presented here or is more prevalent, or why cognitive learning theory

interventions are more frequently implemented in general education classrooms.

Table 15. Percentage of Interventions Investigated by Learning Theory

Setting	Learning Theories		
	Cognitive	Behavioral	Social
General Education	80%	0	20%
Special Education	26%	48%	26%

Findings from this systematic review also indicate studies of academic interventions for students

with EBD in general education classrooms typically have weak design resulting in threats to

internal and external validity, and decreased generalizability (Fink, 2005; Patten, 1997). Only

one of the five studies that met inclusion criteria for this review used experimental design with

random assignment of participants to groups (Bay, Staver, Bryan, & Hale, 1992). The absence of

a control group in the remaining four studies increased threats to internal validity, such as

influences from history, maturation, and testing (Fink, 2005). Increased threats to internal

validity weaken external validity and the generalizability of study findings for these four studies included in this review. Methodological recommendations to strengthen future studies are presented later in this chapter.

Finally, this systematic review creates an example for future systematic reviews in related areas of special education and establishes the value of systematic reviews in education. The search process, inclusion and exclusion criteria, and screening process set forth in this review can serve as a model for future systematic reviews addressing students with disabilities. This systematic review documents the paucity and need of literature addressing academic interventions for students with EBD in general education classrooms; findings from studies that met all inclusion criteria except setting and were conducted in self-contained special education classrooms; the need for future studies to strengthen internal and external validity through study design; and the need for study reports to provide critical study information and outcome data clearly.

<u>Limitations of this Systematic Review</u>

Several limitations of this systematic review affect the internal and external validity of the review's findings, and therefore the generalizability of findings is limited. These limitations include (a) possible skewed sample of studies that met inclusion and exclusion due to publication bias; (b) an inability to perform statistical analysis due to the few, diverse studies included in

review and incomplete reporting; and (c) limited generalizability of individual study results to other students and locations.

Threats to Internal Validity

Internal validity of this systematic review may have been influenced by publication bias. This systematic review was limited to published studies and therefore the sample of studies may be skewed by publication bias, which is the lack of studies published with negative outcomes (Rosenthal, 1979). Journals tend to publish studies that have produced statistically significant results (Rosenthal, 1979). Because of this, it is possible that additional studies exist of interventions shown to be ineffective that were never published; therefore information about these ineffective interventions is unavailable to educators and researchers. Knowledge of interventions shown to have negative effect or no effect is just as valuable to educators as interventions shown to have a positive effect, as educators make daily choices about how to educate students with EBD in general education classrooms. This information is also valuable to researchers so that time is not wasted investigating what has already been documented. In addition, relatively good studies may not have reached the literature because of low participant numbers and other study design issues (Fink, 2005; Rothstein et al. 2004). Findings from this systematic review must be interpreted cautiously due to this possible impact of publication bias.

Another influence on internal validity of this review is that it was not possible to conduct statistical meta-analysis; this was due to the limited number of studies that met inclusion criteria, the diversity of interventions investigated by those included studies, and critical information missing from study reports. Only five studies met all inclusion criteria and no two studies examined the same intervention. Also, written reports of studies were often missing critical information (i.e. study participant demographics, specific setting information, instrumentation, effect size, etc.). In addition, many of the studies examined by this review contained less than optimal sample sizes resulting in weaker external validity. Therefore, due to the few, diverse studies included in this review, minimal data reported, and less than optimal sample sizes, conducting a statistical meta-analysis was not practical or possible. Had it been possible to conduct a statistical meta-analysis of the included studies, internal validity of this systematic review would have been strengthened (Shadish, Cook, & Campbell, 2002).

Threats to External Validity

In addition to the influence of publication bias on internal validity, external validity and the generalizability of individual study results included in this systematic review is limited (Fink, 2005). Caution should be used in generalizing individual study findings to students with different needs, as well as to students educated in different settings.

Interpretation of intervention effectiveness is difficult as many factors contribute to academic outcomes. Educators should be made aware that intervention effectiveness is related to the needs and interests of the student (Jolivette, Wehby, & Hirsch, 1999; Morgan, 2006). As Jolivette et al. (1999) reported, analyzing student needs and interests and then selecting strategies based on this information increases the intervention effect on academic outcomes. Prevalence of multiple disabilities for students with EBD complicates the issue of determining academic intervention effectiveness for this population. For example, consider an intervention that has previously been shown to be effective for students with SLD (i.e. advance organizers) that is then examined with a sample of students identified as EBD who also have learning disabilities; it would be difficult, if not impossible, to determine whether the intervention were addressing characteristics of the learning disability or characteristics of the emotional and behavioral disorder.

It is also not appropriate to conclude that academic interventions having a positive effect in one setting would have a similar effect in other settings (Shadish, Cook, & Campbell, 2002). Academic interventions effective in special education classrooms might not be effective in general education settings and vice versa; also academic interventions shown to have an effect in one content area might not have the same effect in another content area. For example, guided notes might have a positive effect on academic outcomes in science, but may have no effect or even a negative effect in math. Although findings from the studies included in this review might indicate possible intervention effect, there is not enough evidence to make causal inference.

Since most of the interventions for studies included in this review were implemented in separate resource room locations, generalizability of individual study results is limited (Patten, 1997). For those studies in which participants were educated full time in general education classrooms, four out of five implemented the intervention in separate resource rooms or special education classrooms. Since the implementation of the intervention did not take place in the general education classroom, this calls into question the ecological validity of the studies included in this review as well as the review itself.

Because of the limitations to external validity described here, caution must be used in interpreting individual study results included in this review (Patten, 1997); it is inappropriate to generalize these study results to all students with EBD in all general education settings.

Implications for Educators

The purpose of this study was to identify academic interventions effective for students with EBD in general education classrooms. General educators need information about academic interventions for students with EBD in general education classrooms to support academic success for this population. General educators have concerns about including students with EBD in general education classrooms (Scruggs & Mastropieri, 1996) and most are not implementing

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practices that meet individual needs of students with mild to moderate disabilities (Zigmond & Baker, 1995). As described in the previous section on limitations, the interventions for four out of the five studies that met all inclusion criteria for this review were not implemented in general education classrooms or by general education teachers. This finding further supports the need for general educators to gain knowledge about effective academic interventions for students with EBD.

Although this review documents that the literature base on academic interventions for students with EBD in general education classrooms is sparse, teacher educators must teach general educators what *is* known about what works for students with EBD. With the increase in both inclusive practices and collaboration between special and general educators, it makes sense that teacher educator programs mirror that collaborative relationship. One recommendation is for teacher education programs to provide integrated coursework where special and general educators learn together about educational strategies for students with mild to moderate disabilities. Another recommendation is for teacher licensing agencies to require general educators to complete coursework or demonstrate competencies that address instructional approaches for students with mild to moderate disabilities.

Based on the results of this systematic review, it can be concluded the literature addressing academic interventions for students with EBD in general education classrooms is sparse. Until the literature on effective interventions for students with EBD reflects current practice regarding service-delivery settings, general educators must employ interventions already known to be effective for students with EBD in self-contained settings landrum1. The results of this study indicate self-management and peer tutoring are effective in self-contained special education classrooms; more studies should be conducted on these interventions with students with EBD in general education classrooms.

Implications for Future Research

The results of this review clearly indicate a need for additional, better designed studies to examine the effectiveness of academic interventions for students with EBD in general education classrooms. Studies should investigate interventions already shown to be effective for students with EBD in self-contained classrooms, as well as interventions that have been shown to be effective for non-disabled students in general education classrooms.

Considering the recent history of service delivery for students with EBD has mainly been in self-contained classrooms (Osgood, 2008), it is no surprise that the literature addressing interventions for this population in general education settings is sparse. In the past, it was the rare student with EBD who was fully included with non-disabled peers. The EBD disability category is by nature

prone to conflict so isolating these students often appeared to be an effective solution. With such a small population of students with EBD served in general education classrooms, it would have been difficult to create a sample large enough to obtain statistically significant results. However, current service delivery for students with mild to moderate disabilities is changing and greater numbers of students with EBD are now being served in general education classrooms. Because of the low incidence of EBD in the general student population, despite being considered a high-incidence disability, the issue of small samples of students with EBD in general education classrooms may still be an issue. Even with the low number of students with EBD served in general education classrooms, it is surprising however that there were not more case studies found in the literature.

<div align="center">Methodological Recommendations for Future Studies</div>

In addition to the need for *additional* studies addressing academic interventions for students with EBD in general education classrooms, there is also a need for *better-designed* studies with more complete and detailed reporting. The design of future studies must address threats to internal and external validity, as well as supply data needed to address current issues in educating students with EBD. As mentioned previously, unclear and incomplete study reports may have interfered with identification of all studies meeting inclusion and exclusion criteria for this systematic review. Based on the findings of this systematic review, recommendations have been developed

for future studies examining academic interventions for students with disabilities. Following are

these recommendations:

1. *Use quasi-experimental design including control groups.* True experimental design with
   randomized selection and assignment is typically not practical in education research.
   However, including control groups in studies of academic interventions is more practical
   and will minimize threats to internal validity, thereby strengthening external validity and
   increasing generalizability of results.

2. *Implement academic interventions in general education classrooms.* As reported here,
   academic interventions for students educated in general education classrooms are
   typically implemented in separate locations; this creates more of a clinical or lab setting.
   To increase external validity and generalizability, all stages of academic interventions –
   including instruction of strategies, implementation by student or teacher, and data
   collection – should take place in the student's authentic educational environment.

3. *Report all critical study information clearly.* Many of the original 700 reports screened
   contained incomplete and unclear information critical for determining inclusion or
   exclusion of the study in this systematic review. Reports should minimally (a) detail
   demographic information for study participants including specific disability; (b) specify
   educational placement using percentage (i.e. 60% of day in general education); (c)
   clearly identify academic intervention and specify implementation details (i.e. frequency
   and duration, person implementing, content addressed); (d) identify and/or describe

clearly the instrumentation used for measure of dependent variable and details of

administration; and (e) report specific data including effect size. This information should

be reported in an organized and logical manner, and ideally a summary of the items

listed above should be presented in the report abstract.

4. *Disaggregate data by specific and multiple disabilities.* For example, data for students

with EBD should be disaggregated from data for students with both EBD and SLD, and

from students with EBD and ADHD, etc. This disaggregation of data will allow

researchers to better determine the effectiveness of interventions for specific students.

The preceding recommendations for study design and reporting were developed based on

findings from this systematic review. Utilization of these recommendations will result in studies

with higher internal and external validity, and greater generalizability. In addition, the overall

literature will provide a better sample for future systematic reviews and meta-analyses, resulting

in stronger evidence of academic intervention effectiveness and efficacy for students with

disabilities.

Conclusion

The purpose of this systematic review was to synthesize the literature on academic interventions

shown to have positive effects on academic outcomes for students with EBD who are being

educated full time in general education classrooms. Based on the findings presented in this

review, it can be concluded that little is known about effective academic interventions for

students with EBD in general education classrooms. Additional research is needed to equip general educators with effective academic interventions for educating students with EBD in general education classrooms. Future studies should be conducted that specifically focus on general education settings. Study validity needs to be strengthened to provide evidence of effective academic interventions. Implications for research and recommendations for methodological design were presented in this chapter.

Beyond the scope of this study remains a more paramount question: Are students with EBD more successful academically in general education classrooms or self-contained special education classrooms? This review was not designed to measure the efficacy of either general education classrooms or self-contained special education classrooms. Therefore, it is inappropriate to interpret the results of this review to either support or refute the inclusion of students with EBD in general education classrooms. However the importance of this question cannot be ignored as the response creates the foundation for future research and policy. Researchers and policy-makers must be made aware of the need for high-quality empirical studies on this issue so that future policy can be made based on objective documentation of academic outcomes rather than subjective rhetoric.

APPENDIX A: UCF IRB APPROVAL

University of
**Central
Florida**

October 10, 2007

Carolynne Gischel
College of Education
Florida Gulf Coast University
10501 FGCU Boulevard South
Fort Myers, FL 33965-6565

Dear Ms. Gischel:

As per our e-mail correspondence, the Institutional Review Board has determined that
your project, "Interventions for Successful Inclusion of Students with Mild to Moderate
Emotional and Behavioral Disabilities in General Education Classrooms: A Systematic
Review of Literature," does not require Institutional Review Board (IRB) approval.
Meta-analysis is not human subjects research.

Thank you for your time in resolving this issue. Please continue to submit applications
that involve human subject activities that could potentially involve human subjects as
research participants.

On behalf of Tracy Dietz, Ph.D., UCF IRB Chair, this letter is signed by:

Joanne Muratori
UCF IRB Coordinator

cc: IRB file
    David Boote, Ph.D.

JM:jm

APPENDIX B: PHASE I SCREENING FORM

Phase I Screening Form:
Topic, Population, Setting, and General Design Relevance

Academic Interventions for Successful Inclusion of Students with Mild to Moderate
Emotional/Behavioral Disabilities in General Education Classrooms:
A Systematic Review of Literature

Study #:   **Date of Screening:**   **Reviewer initials:**

Full Citation:

.

  1. Database:

        ERIC   PsychINFO   Dissertation Abstracts

  2. Does this study address interventions for students with EBD?

        YES   UNSURE   NO (**STOP/exclude**)

  3. Does this study take place in a K-12 school setting?

        YES   UNSURE   NO (**STOP/exclude**)

  4. Can the intervention be implemented by a teacher or student (i.e. not therapy)?

        YES   UNSURE   NO (**STOP/exclude**)

  5. Is this an experimental study design?

        YES   UNSURE   NO (**STOP/exclude**)

Decision: _____ Exclude   _____Include/progress to Phase II screening

Comments:

APPENDIX C: PHASE II SCREENING FORM

Phase II Screening Form:
Sample, Replicability, Intervention Effectiveness, Data and Verification

Academic Interventions for Successful Inclusion of Students with Mild to Moderate
Emotional/Behavioral Disabilities in General Education Classrooms:
A Systematic Review of Literature

Study #:   **Date of Screening:**   **Reviewer initials:**

Full Citation:

Sample:

1. Primary disability:
    a. EBD
    b. EBD primary, and other disabilities
    c. Other disabilities, not EBD (**STOP/exclude)**
    d. At-risk, behavior problems (**STOP/exclude)**
    e. General population (**STOP/exclude)**
    f. Not identified, unclear (**STOP/exclude)**
    g. Other _____

   Comments:

2. Educational placement:
    a. General education ($\geq$79%)
    b. General education ($\leq$78%) (**STOP/exclude)**
    c. Self-contained special education (**STOP/exclude)**
    d. Includes various settings (**STOP/exclude)**
    e. Alternative setting (i.e. day treatment, residential) (**STOP/exclude)**
    f. Not identified, unclear (**STOP/exclude)**

   Comments:

Replicability:

3. Intervention and implementation are described with enough detail to replicate:
   a. Yes
   b. No (**STOP/exclude)**

   Comments:

Intervention Effectiveness:

4. Dependent variable(s) domain:
   a. Academic
   b. Academic and behavioral
   c. Behavioral only (**STOP/exclude)**

   Comments:

Data and Verification:

5. Data documenting relationship of intervention to academic performance is presented through:
   a. Comparison with control group
   b. Researcher observations
   c. Assessment results
   d. No data presented (**STOP/exclude)**

   Comments:

Decision: _____Exclude   _____Include/progress to Coding

Comments:

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