

Synthesis Reports on Intensive Academic and Behavioral Intervention Annotated Bibliography

March 2015

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This document was produced under U.S. Department of Education, Office of Special Education Programs, Award No. H326Q110005. Celia Rosenquist serves as the project officer. The views expressed herein do not necessarily represent the positions or policies of the U.S. Department of Education. No official endorsement by the U.S. Department of Education of any product, commodity, service or enterprise mentioned in this document is intended or should be inferred.

1648_03/15



Contents

	Page
Introduction.....	1
Reading	2
Mathematics	11
Behavior	14
Data-Based Individualization.....	18

Introduction

This document is the first in a series of products that will be developed under the knowledge production service area of the National Center on Intensive Intervention (NCII), with the purpose of describing and communicating the results of research on intensive intervention. The synthesis studies summarized here, and others to be identified, will inform the development of a concept paper about intensive intervention. The concept paper will be produced in multiple formats to reach a diverse range of stakeholders. These products will be produced within the first year of NCII's operation.

The purpose of this deliverable is to identify and describe major synthesis studies that have been conducted to date regarding the effectiveness of intervention strategies targeting students with disabilities who have intensive academic or behavioral needs. NCII senior advisors identified the synthesis studies, which are considered the most comprehensive and informative for the purpose of NCII. However, the studies identified do not necessarily reflect all of the synthesis work that has been conducted in the area of intensive academic and behavioral intervention. We will continue to identify and review synthesis studies as appropriate and add to this annotated bibliography during the course of NCII's operation.

The following annotations are organized into four topic areas: (1) Reading, (2) Mathematics, (3) Behavior, and (4) Data-Based Individualization. The annotations include the following information about each synthesis report: citation, abstract, studies included (number of studies, years included, grades included, search procedures, and study selection criteria), synthesis methods, and synthesis results.

Reading

1. Gajria, M., Jitendra, A., Sood, S., & Sacks, G. (2007). Improving comprehension of expository text in students with LD: A research synthesis. *Journal of Learning Disabilities*, 40(3), 210–225. Retrieved from <http://ldx.sagepub.com/content/40/3/210.full.pdf+html>

Abstract

Author abstract, courtesy of Sage Publications: “This article summarizes the findings of research studies designed to improve the comprehension of expository text for students with learning disabilities. Twenty-nine studies were located that met the inclusion criteria. Interventions gleaned from the review were categorized as content enhancement (i.e., advance and graphic organizers, visual displays, mnemonic illustrations, and computer-assisted instruction) or cognitive strategy instruction (i.e., text structure, main idea identification, summarization, questioning, cognitive mapping, and reciprocal teaching). Treatment outcomes are discussed in relation to the various instructional approaches, student characteristics (e.g., grade, IQ), instructional features (e.g., materials, treatment length), methodological features, strategy maintenance, and generalization components. Implications for classroom practice and future research directions are provided.”

Studies Included

Number of Studies: 29

Years Included: January 1978–July 2005

Grades Included: School-age

Search Procedures: The following search procedures were used:

1. Electronic search of PsycINFO, ERIC, and Social Sciences Citation Index
2. Ancestral search using reference list of identified articles
3. Hand search of six major journals

Study Selection Criteria: In order to meet the criteria for inclusion, studies must have:

1. Included a content area intervention, or the study must have provided opportunities to practice or apply strategies to comprehend expository textual materials
2. Identified recipients of the intervention as school-age children or adolescents with learning disabilities (LD)
3. An experimental or a quasi-experimental group design that had a control group
4. Included at least one measure of expository text comprehension
5. Provided sufficient quantitative information regarding outcomes so that effect sizes could be calculated
6. Been published in English

Synthesis Method

Effect sizes for each study were calculated and summarized by instructional approach, content enhancements, and cognitive strategy instruction (broken down by single and multiple strategies), student characteristics, instructional features, methodological features, and strategy maintenance and generalization.

Synthesis Results

The studies “provide strong support for the use of text enhancements to facilitate content area comprehension for students with LD” as well as “support for systematic instruction in cognitive strategies to enhance comprehension of expository text for students with LD.” The results indicated large effects for cognitive strategy instruction. For instructional settings, “the outcomes were the largest for special education classrooms, followed by instruction delivered in other settings and general education classrooms.” “Large effects were noted whether researchers or teachers delivered instruction (in contrast to computer/multimedia tools).” “Treatment effects were large for studies that either randomly assigned students to treatment conditions or did not include random assignment.” “Scores on follow-up tests and transfer tests were associated with large effect sizes.” (Gajria, Jitendra, Sood, & Sacks, 2007)

2. Scammacca, N., Roberts, G., Vaughn, S., Edmonds, M., Wexler, J., Reutebuch, C. K., & Torgesen, J. K. (2007). *Interventions for adolescent struggling readers: A meta-analysis with implications for practice*. Portsmouth, NH: RMC Research Corporation, Center on Instruction. Retrieved from <http://www.centeroninstruction.org/files/Meta-analysis%20Struggling%20Readers1.pdf>

Abstract

Author abstract, courtesy of the Center on Instruction: “This meta-analysis offers decision-makers research-based guidance for intervening with adolescent struggling readers. The authors outline major implications for practice: (1) Adolescence is not too late to intervene. Interventions do benefit older students; (2) Older students with reading difficulties benefit from interventions focused at both the word and the text level; (3) Older students with reading difficulties benefit from improved knowledge of word meanings and concepts; (4) Word-study interventions are appropriate for older students struggling at the word level; (5) Teachers can provide interventions that are associated with positive effects; (6) Teaching comprehension strategies to older students with reading difficulties is beneficial; (7) Older readers’ average gains in reading comprehension are somewhat smaller than those in other reading and reading-related areas studied; (8) Older students with learning disabilities (LD) benefit from reading intervention when it is appropriately focused; and (9) To learn more about instructional conditions that could close the reading gap for struggling readers, individuals will need studies that provide instruction over longer periods of time and assess outcomes with measures more like those schools use to monitor reading progress of all students. This report summarizes aspects of recent research on reading instruction for adolescent struggling readers. It both synthesizes research findings to determine the relative effectiveness of interventions for struggling older readers and outlines the implications of

these findings for practice. Its purpose is to advance the knowledge of technical assistance providers working with state departments of education and local education agencies concerning reading-related issues for students with reading difficulties and learning disabilities.”

Studies Included

Number of Studies: 31

Years Included: 1980–2006

Grades Included: 4–12

Search Procedures: The following search procedures were used:

1. Search of electronic databases
2. Search of reference lists of prior syntheses on related topics

Note: Authors make it clear this was not an exhaustive list of studies.

Study Selection Criteria: In order to meet the criteria for inclusion, studies must have:

1. Been published between 1980 and 2006
2. Included only students who were English-speaking struggling readers in Grades 4–12 (or provided disaggregated data for this group)
3. Consisted of an intervention focused on word study, fluency, vocabulary, reading comprehension strategies, or multiple components of reading instruction
4. Reported data for at least one dependent measure that assessed reading or reading-related variables
5. Reported sufficient data to allow for the computation of an effect size and a measure of standard error

Synthesis Method

The synthesis method was meta-analysis. Effect sizes for each study were calculated using Hedge’s *g* formula and were summarized by type of intervention, grade grouping, type of implementer, and LD status.

Synthesis Results

“The overall effect size calculated based on standardized measures was much lower than the overall effect size calculated based on both standardized and researcher-developed measures. The effect size for reading comprehension strategy interventions was very large. Interventions focused on word study had a moderate overall effect. Multi-component interventions demonstrated a moderate overall effect. Fluency interventions had a small effect. Vocabulary interventions had the largest overall effect size. Effect sizes were larger in studies where participants were middle-grade students. Across all studies, those with only participants with learning disabilities had significantly higher effects than those with no participants with learning disabilities. Effect sizes were larger for researcher-implemented interventions.” (Scammacca et al., 2007)

3. Scammacca, N. K., Roberts, G., Vaughn, S., & Stuebing, K. K. (2013). A meta-analysis of interventions for struggling readers in Grades 4–12: 1980–2011. *Journal of Learning Disabilities*. Advance online publication. doi:10.1177/0022219413504995

Abstract

Author abstract, courtesy of Sage Publications: “This meta-analysis synthesizes the literature on interventions for struggling readers in Grades 4 through 12 published between 1980 and 2011. It updates Scammacca et al.’s analysis of studies published between 1980 and 2004. The combined corpus of 82 study-wise effect sizes was meta-analyzed to determine (a) the overall effectiveness of reading interventions studied over the past 30 years, (b) how the magnitude of the effect varies based on student, intervention, and research design characteristics, and (c) what differences in effectiveness exist between more recent interventions and older ones. The analysis yielded a mean effect of 0.49, considerably smaller than the 0.95 mean effect reported in 2007. The mean effect for standardized measures was 0.21, also much smaller than the 0.42 mean effect reported in 2007. The mean effects for reading comprehension measures were similarly diminished. Results indicated that the mean effects for the 1980–2004 and 2005–2011 groups of studies were different to a statistically significant degree. The decline in effect sizes over time is attributed at least in part to increased use of standardized measures, more rigorous and complex research designs, differences in participant characteristics, and improvements in the school’s ‘business-as-usual’ instruction that often serves as the comparison condition in intervention studies.”

Studies Included

Number of Studies: 82

Years Included: 1980–2011

Grades Included: 4–12

Search Procedures: The following search procedures were used:

1. Search of electronic databases
2. Search of reference lists of prior syntheses on related topics

Study Selection Criteria: In order to meet the criteria for inclusion, studies must have:

1. Been published between 1980 and 2011
2. Included only students who were English-speaking struggling readers in Grades 4–12 (or provided disaggregated data for this group)
3. Been conducted using a validated design, such as experimental or quasi-experimental treatment-comparison, or multiple-treatment comparison
4. Evaluated an intervention focused on word study, fluency, vocabulary, reading comprehension, or multiple components of reading instruction
5. Reported data for at least one dependent measure that assessed reading or reading-related variables

6. Reported sufficient data to allow for the calculation of effect sizes and standard errors

Synthesis Method

The synthesis method was meta-analysis. Effect sizes for each study were calculated using Hedge's *g* formula and were analyzed using a random-effects model. Results reported mean effect sizes across all studies, standardized outcome measures, reading comprehension measures, and standardized reading comprehension measures. In addition, the authors presented findings from moderator analyses, focused on the impact of variables such as type of intervention, LD status, hours of intervention, type of implementer, grade level, and study design type.

Synthesis Results

The authors' goal was to update Scammacca et al.'s prior analysis of studies published between 1980 and 2004, with additional studies published from 2004–2011. The authors calculated a mean effect size of 0.49 across the expanded set of 82 studies. The authors also took steps to compare the results of the earlier studies (1980–2004) and the later studies (2004–2011). Researchers calculated that the mean effect size for the later studies was 0.23, which was significantly smaller than the mean effect size computed for the earlier studies (0.96). The revised mean effect size (including modern studies) for standardized measures was 0.21. The overall mean effect size for reading comprehension measures was 0.45. By comparison, the overall mean effect size for standardized reading comprehension measures was a smaller 0.24. All mean effect sizes were significant at the .001 level.

4. Solis, M., Ciullo, S., Vaughn, S., Pyle, N. Hassaram, B., & Leroux, A. (2011). Reading comprehension interventions for middle school students with learning disabilities: A synthesis of 30 years of research. *Journal of Learning Disabilities*. Retrieved from <http://ldx.sagepub.com/content/early/2011/04/12/0022219411402691.full.pdf+html>

Abstract

Author abstract, courtesy of Sage Publications: "The authors conducted a synthesis of studies of reading comprehension interventions for middle school students (Grades 6–8) identified with a learning disability. They identified 12 studies between 1979 and 2009 with treatment and comparison designs and 2 single-participant studies. Findings from the studies indicate large effect sizes for researcher-developed comprehension measures. Few studies ($n = 4$) reported standardized measures of reading comprehension, which indicated medium effect sizes. The majority of study treatments ($n = 13$) utilized strategy instruction related to main idea or summarization."

Studies Included

Number of Studies: 14

Years Included: 1979–2009

Grades Included: 6–8

Search Procedures: The following search procedures were used:

1. Electronic search of ERIC and PsycINFO
2. Search of references from previously published syntheses for Grades 6–12 reading comprehension outcomes for students with LD
3. Hand search of four major journals

Study Selection Criteria: In order to meet the criteria for inclusion, studies must have:

1. Participants in Grades 6–8 (ages 12–14) or disaggregated data for any student or students who fell in this grade or age range
2. Participants identified with an LD
 - a. Studies were included if a minimum of 50 percent of the participants met the grade or age range and were identified with an LD.
 - b. Studies that identified students only as struggling readers and not as students with an LD were excluded.
2. Targeted reading comprehension as the treatment (Studies that included other areas of reading instruction such as phonemic awareness, phonics, fluency, or vocabulary as part of the treatment were excluded.)
3. An experimental, quasi-experimental, or single-participant design (Studies had to show evidence of a control or comparison group within the design.)
4. English as the language of instruction and must be published in English
5. Included a dependent measure of reading comprehension (If studies had only listening comprehension or content learning as the outcome measure, they were excluded.)

Synthesis Method

Effect sizes were calculated by study, and there was a focus on whether the measure was standardized or researcher developed. Based on the description of the intervention provided by the authors, treatments were organized into the following sections: summarization-main idea; summarization-main idea with self-monitoring; multiple strategy interventions; and other treatments.

Synthesis Results

“Findings from the studies synthesized in this article indicate outcomes largely characterized by medium to large effect sizes derived primarily from researcher-developed comprehension measures.” “The vast majority of study treatments utilized strategy instruction related to main idea or summarization.” (Solis, 2011)

5. Wanzek, J., & Vaughn, S. (2007). Research-based implications from extensive early reading interventions. *School Psychology Review, 36*(4), 541–561.

Abstract

Author abstract: “A synthesis of the extant research on extensive early reading interventions for students with reading difficulties and disabilities is provided. Findings from 18 studies published between 1995 and 2005 revealed positive outcomes for students participating in extensive interventions. Results indicated higher effects for studies providing intervention to students in the smallest group sizes as well as providing intervention early (grades K–1). No differences in overall outcomes were revealed between studies implementing highly standardized interventions or interventions with less standardized implementation. Implications for practice and future research are discussed.”

Studies Included

Number of Studies: 18

Years Included: 1995–2005

Grades Included: K–3

Search Procedures: The following search procedures were used:

1. Electronic search of ERIC and PsycINFO
2. Hand search of seven major journals for 2003–2005

Study Selection Criteria: In order to meet the criteria for inclusion, studies must have:

1. Been reported in a peer-reviewed journal and printed in English
2. Included students with LD or students identified as at risk for reading difficulties (Studies with additional participants were included if disaggregated data were provided for the students with LD or the students were identified as at risk.)
3. Participants enrolled in grade levels between kindergarten and third grade inclusive
4. Interventions that targeted early literacy in an alphabetic language, were provided for 100 sessions or more, and were not part of the general education curriculum provided to all students
5. Interventions provided as part of the school programming
6. Dependent variables that address reading outcomes

Synthesis Method

Effect sizes were calculated and summarized by duration of intervention, instructional group size, grade level of intervention, and degree of standardization.

Synthesis Results

The findings suggest generally positive outcomes for students with reading difficulties and disabilities participating in extensive interventions. Studies with the highest effects emphasized both phonics instruction and text reading.

6. Wanzek, J., Vaughn, S., Scammacca, N. K., Metz, K., Murray, C. S., Roberts, G., & Danielson, L. (2013). Extensive reading interventions for students with reading difficulties after grade 3. *Review of Educational Research, 83*(2), 163–195.

Abstract

Author abstract: “This synthesis extends a report of research on extensive interventions in kindergarten through third grade (Wanzek & Vaughn, 2007) to students in Grades 4 through 12, recognizing that many of the same questions about the effectiveness of reading interventions with younger students are important to address with older students, including (a) how effective are extensive interventions in improving reading outcomes for older students with reading difficulties or disabilities and (b) what features of extensive interventions (e.g., group size, duration, grade level) are associated with improved outcomes. Nineteen studies were synthesized. Ten studies met criteria for a meta-analysis, reporting on 22 distinct treatment/comparison differences. Mean effect sizes ranged from 0.10 to 0.16 for comprehension, word reading, word reading fluency, reading fluency, and spelling outcomes. No significant differences in student outcomes were noted among studies related to instructional group size, relative number of hours of intervention, or grade level of intervention.”

Studies Included

Number of Studies: 19

Years Included: 1995–2011

Grades Included: 4–12

Search Procedures: The following search procedures were used:

1. Electronic search of ERIC and PsycINFO
2. Hand search of eight major journals for 2010–2011

Study Selection Criteria: In order to meet the criteria for inclusion, studies must have:

1. Been reported in a peer-reviewed journal and printed in English
2. Included students with LD or reading difficulties (studies with additional participants were eligible if disaggregated data were provided for the students of interest)
3. Included participants enrolled in Grades 4–12 (studies with other age ranges were eligible if the majority of students were in Grades 4–12, or if disaggregated data were provided for the students of interest)

4. Evaluated interventions that targeted reading in an alphabetic language, were provided for a minimum of 75 sessions, and were not part of the general education curriculum provided to all students
5. Evaluated interventions that were provided as part of the school-day programming
6. Featured dependent variables that addressed reading outcomes
7. Used an experimental, quasi-experimental, single-group, or single-case design

Synthesis Method

The synthesis method was meta-analysis. Effect sizes for each study were calculated using Hedge's *g* formula and were analyzed using a random-effects model. Results reported mean effect sizes across all studies and across five categories of measures: reading comprehension, reading fluency, word reading, word reading fluency, and spelling. The authors also conducted moderator analyses with variables of interest such as instructional group size, hours of intervention, and grade level of intervention.

Synthesis Results

The meta-analysis suggested that extensive reading interventions in Grades 4–12 produced a small, positive effect on students' reading comprehension—the authors calculated a mean effect size of 0.10 ($p < .001$). Likewise, the mean effect size estimates for reading fluency, word reading, word reading fluency, and spelling outcomes also were small and in a positive direction, ranging from 0.15 to 0.16. All these effect sizes were significant at the 0.05 level or below. The moderator analyses did not reveal any significant relationships between moderator variables (group size, hours of intervention, student grade level) and differences observed between groups.

Mathematics

1. Baker, S., Gersten, R., & Lee, D. (2002). A synthesis of empirical research on teaching mathematics to low-achieving students. *The Elementary School Journal*, 103(1), 51–73. Retrieved from <http://www.jstor.org/stable/1002308>

Abstract

This study used meta-analysis to synthesize research on the effects of interventions to improve mathematics achievement of students considered at risk for academic failure. The study found that effective interventions included providing teachers and students with student performance data; using peer tutors; providing clear, specific feedback to parents on children's mathematics success; and using explicit instruction to teach mathematics concepts and procedures.

Studies Included

Number of Studies: 15

Years Included: 1971–1999

Grades Included: Does not specify

Search Procedures: The following search procedures were used:

1. Electronic search of ERIC and PsycINFO
2. Bibliographies of research reviews in the area of learning disabilities
3. Manual search of major journals in special, remedial, and elementary education

Study Selection Criteria: In order to meet the criteria for inclusion, studies must have:

1. Examined the practice of mathematics instruction or structured opportunities for students to practice or apply classroom mathematics lesson objectives
2. Examined mathematics instruction lasting for a minimum of 90 minutes during the course of the intervention
3. Been an experimental or quasi-experimental intervention that employed group-design methods with a control group or a quasi-experiment as long as one of three conditions was met: (a) posttest performance could be adjusted statistically by factoring in pretest performance on relevant outcome measures, or (b) the researchers in the original study adjusted posttest performance using appropriate analysis of covariance techniques
4. Included at least one mathematics performance or achievement measure
5. Reported means and standard deviations, or F-values, so that effect sizes could be calculated

Synthesis Method

This meta-analysis calculated effect sizes based on the study information/characteristics. Studies were summarized and compared based on the following: providing data or recommendation to teachers and students; peer-assisted learning; explicit teacher-led and contextualized teacher-facilitated approaches; and providing parents with information about student successes.

Synthesis Results

The meta-analysis found that providing teachers and students with specific information on how each student is performing seems to enhance mathematics achievement consistently. Using peers as tutors or guides enhances achievement. Providing clear, specific feedback to parents of low achievers about their children's successes in mathematics seems to have the potential to enhance achievement, although perhaps only modestly. A small body of research suggests that principles of direct or explicit instruction can be useful in teaching mathematics concepts and procedures.

2. Gersten, R., Chard, D. J., Jayanthi, M., Baker, S. K., Morphy, P., & Flojo, J. (2009). Mathematics instruction for students with learning disabilities: A meta-analysis of instructional components. *Review of Educational Research*, 79(3), 1202–1242. Retrieved from <http://rer.sagepub.com/content/79/3/1202.full.pdf+html>

Abstract

Author abstract, courtesy of Sage Publications: “The purpose of this meta-analysis was to synthesize findings from 42 interventions (randomized control trials and quasi-experimental studies) on instructional approaches that enhance the mathematics proficiency of students with learning disabilities. We examined the impact of four categories of instructional components: (a) approaches to instruction and/or curriculum design, (b) formative assessment data and feedback to teachers on students' mathematics performance, (c) formative data and feedback to students with LD on their performance, and (d) peer-assisted mathematics instruction. All instructional components except for student feedback with goal-setting and peer-assisted learning within a class resulted in significant mean effects ranging from 0.21 to 1.56. We also examined the effectiveness of these components conditionally, using hierarchical multiple regressions. Two instructional components provided practically and statistically important increases in effect size—teaching students to use heuristics and explicit instruction. Limitations of the study, suggestions for future research, and applications for improvement of current practice are discussed.”

Studies Included

Number of Studies: 42

Years Included: January 1971–August 2007

Grades Included: Does not specify

Search Procedures: The following search procedures were used:

1. Electronic search of ERIC and PsycINFO
2. Dissertation Abstracts International
3. Manual search of major journals in special, remedial, and elementary education

Study Selection Criteria: In order to meet the criteria for inclusion, studies must have:

1. Been an evaluation of the effectiveness of a well-defined method for improving mathematics proficiency (such as: (a) specific curricula or teaching approaches, (b) various classroom organizational or activity structures, or (c) formative student assessment data). Studies that only examined the effect of test-taking strategies on mathematics test scores, taught students computer-programming logic, or focused on computer-assisted instruction were not included.
2. Had strong claims of casual inferences that could be made, namely, randomized controlled trials or quasi-experimental designs. Quasi-experiments were included if students were pretested on relevant mathematics measures and (a) researchers in the original study adjusted posttest performance, (b) authors provided pretest data so that the effect sizes could be calculated, or (c) if posttest scores could not be adjusted statistically for pretest performances, there was documentation showing that no significant differences existed between groups at pretest on relevant measures of mathematics achievement.
3. Had participants who were students with an identified learning disability. Studies that also included students without LD were included if: (a) separate outcome data were presented so that effect sizes could be computed separately for students with LD, or (b) if separate outcome data were not presented for students with LD, then more than 50 percent of the student participants were students with LD.

Synthesis Method

This meta-analysis examined the impact of four categories of instructional components: approaches to instruction and/or curriculum design; formative assessment data and feedback to teachers on students' mathematics performances; formative data and feedback to students with LD on their performances; and peer-assisted mathematics instruction.

Synthesis Results

“When examined individually, results indicated that only two instructional components did not yield a mean effect size significantly greater than zero: (a) asking students to set a goal and measure attainment of that goal and (b) peer-assisted learning within a class. All other instructional components produced significant positive impacts on mathematics proficiency. The instructional components did however vary greatly in their effects, ranging from mean effect sizes of 0.14 to 1.56.” (Gersten et al., 2009)

Behavior

1. Gresham, F. M., Cook, R. C., Crews, S. D., & Kern, L. (2004). Social skills training for children and youth with emotional and behavioral disorders: Validity considerations and future directions. *Behavioral Disorders, 30*(1), 32–46. Retrieved from <http://www.ccbd.net/sites/default/files/BDv30n1%20Gresham.pdf>

Abstract

Author abstract: “This article provides an analysis of the current knowledge base of social skills training (SST) with students with, or at risk for, Emotional and Behavioral Disorders (EBD). This knowledge base is evaluated with respect to issues regarding construct, internal, external, and social validity of the SST literature. Research syntheses investigating construct validity suggest that the three domains of social interaction, prosocial behavior, and social-cognitive skills adequately represent the social skills construct. Internal validity analyses based on the results of six meta-analyses suggested that SST is an effective intervention strategy for students with EBD, showing a 64% improvement rate relative to controls using the Binomial Effect Size Display. External validity analyses showed that SST is effective across a broad range of behavioral difficulties, such as aggression externalizing behaviors, internalizing behaviors, and antisocial behavior patterns. Some weaknesses were noted in the social validity of SST outcome measures, and recommendations are made for improvement in this area. Overall, SST is an effective and essential part of a comprehensive intervention program for students with EBD.”

Studies Included

Number of Studies: 6

Years Included: 1980–2004

Grades Included: Does not specify

Search Procedures: The following search procedures were used:

1. Electronic search of ERIC, Psychological Abstracts, and Medline

Study Selection Criteria: In order to meet the criteria for inclusion, studies must be meta-analyses that:

1. Delineated specific inclusion criteria indicating that studies had to include samples of participants with or at risk for EBD
2. Stipulated that social skills training was the primary emphasis of the investigation

“Note: Examination was not limited solely to the meta-analytic level; individual studies incorporated within the meta-analyses and extant critiques and reviews of the literature were also examined to shed light on particular validity issues.” (Gresham, Cook, Crews, & Kern, 2004)

Synthesis Method

“With the aim of facilitating the combination and comparison of effect size estimates from the six meta-analyses, each effect size was transformed into a common metric, the Pearson Product Moment correlation (r). When combining the effect sizes to produce a weighted mean effect size, each effect size was first converted to Fisher’s Z_r , then weighted by their number of respective studies. These values were then summed together to elicit a weighted grand mean Z_r , which was reconverted back to r from Z_r . They were further transformed into the binomial effect size display (BESD).” (Gresham et al., 2004)

Study Results

“The weighted grand mean effect size is $r = 0.29$ (range = 0.19–0.40), suggesting that overall, approximately 65% of participants in the SST groups improved compared to 35% of those in the control groups. Five of the six meta-analyses reviewed showed that SST was effective with children and youth with or at risk for EBD. Based on research syntheses that have been conducted, it appears that the three domains of social interaction, prosocial behavior, and social-cognitive skills adequately represent the social skills construct.” (Gresham et al., 2004)

2. Hilt-Panahon, A., Kern, L., Divatia, A., & Gresham, F. (2007). School-based interventions for students with or at risk for depression: A review of the literature. *Advances in School Mental Health Promotion, Inaugural Issue*, 32–41. Retrieved from <http://www.schoolmentalhealth.co.uk/nasp/panahon.pdf>

Abstract

Author abstract: “Internalizing disorders are increasingly recognized as a significant problem for school-aged children. Students with depression may experience lowered self-esteem, withdrawal, lack of concentration, and poor academic performance. Given these negative outcomes, as well as growing support for school-based mental health services, it is critical to examine the evidence supporting school-based interventions for students with or at risk for depression. This paper provides a review of research on interventions implemented in school settings to reduce children’s depressive symptoms. A variety of variables related to intervention implementation and effectiveness were considered. Cognitive behavioral therapies emerged as the intervention with the strongest evidence base for reducing depressive symptoms, showing moderate to large effect sizes. In addition, relaxation training was identified as a promising practice, particularly for children with co-morbid symptoms of anxiety. Implications for both research and practice are discussed.”

Studies Included

Number of Studies: 15

Years Included: 1982–2006

Grades Included: K–12 (ages 6–17)

Search Procedures: The following search procedures were used:

1. Electronic search of PsycINFO, Medline, and ERIC
2. Ancestral search of each reviewed article, conducted by examining the reference section to locate additional articles

Study Selection Criteria: In order to meet the criteria for inclusion, studies must have:

1. Appeared in a peer-reviewed journal (Dissertations were excluded.)
2. Described a prevention or intervention program designed to reduce depressive symptoms
3. Been implemented with children, ages 6 to 17, enrolled in Grades K–12
4. Described interventions implemented in a school setting (public or private) in the United States

Synthesis Method

This is a review of research and effect sizes on interventions implemented in school settings to reduce children's depressive symptoms. A variety of variables related to intervention implementation and effectiveness were considered, including: type of intervention, duration of intervention, intervention delivery, intervention agent, intervention agent training, research design, intervention fidelity, and intervention effectiveness.

Synthesis Results

“Cognitive behavioral therapies emerged as the intervention with the strongest evidence base for reducing depressive symptoms, showing moderate to large effect sizes. In addition, relaxation training was identified as a promising practice, particularly for children with co-morbid symptoms of anxiety.” (Hilt-Panahon, Kern, Divatia, & Gresham, 2007)

3. Kern, L., Hilt, A. M., & Gresham, F. (2004). An evaluation of the functional behavioral assessment process used with students with or at risk for emotional and behavioral disorders. *Education and Treatment of Children, 27*(4), 440–452.

Abstract

Author abstract: “The literature reflects an increasing reliance on functional behavioral assessment (FBA) to develop support plans for decreasing problem behavior. However, applications with students with emotional and behavioral disorders (EBD), particularly in classroom settings, continue to be limited. The purpose of the present review was to explore the FBA process, as it has been applied in school settings with students with or at risk for EBD. Twenty articles were identified that met inclusion criteria, with a total of 43 participants. Participants ranged from 4–14 years old, with a variety of externalizing problems. Analysis of assessment methodologies revealed that the most common methods used were direct observation and interview. Limitations noted were the absence of demonstrations with internalizing problems, extensive researcher involvement with implementation, and wide variability in assessment duration. Results are discussed in terms of implications for practice and future research.”

Studies Included

Number of Studies: 20

Years Included: 1982–2003

Grades Included: Ages 4–14

Search Procedures: The following search procedures were used:

1. Electronic search of ERIC, Medline, and PsycINFO
2. Hand search of journals in special education, school psychology, and behavior analysis/behavior support published in the past two years
3. Ancestral search of each reviewed article, conducted by examining the reference section to locate additional articles

Study Selection Criteria: In order to meet the criteria for inclusion, studies must have:

1. Been published in a peer-reviewed publication (Dissertations were excluded.)
2. Implemented any type of functional assessment or functional analysis (Articles using other types of assessments to develop interventions were excluded [e.g., preference assessments].)
3. Participants with labels of EBD, participants described as at risk for EBD, or participants exhibiting behavior problems suggestive of or consistent with EBD
 - a. Participants with both internalizing and externalizing behaviors were included.
 - b. Participants described as having autism, pervasive developmental disorder, or developmental disabilities were excluded.
4. Been conducted in school or preschool settings, public or private

Synthesis Method

The study examined the process/methodology of functional behavioral assessment, as applied with students with or at risk for EBD.

Synthesis Results

There is a growing literature base to substantiate function assessment/analysis applicability with students exhibiting behaviors consistent with EBD. Analysis of assessment methodologies revealed that the most common methods used were direct observation and interview.

Data-Based Individualization

1. Stecker, P. M., Fuchs, L. S., & Fuchs, D. (2005). Using curriculum-based measurement to improve student achievement: Review of research. *Psychology in the Schools, 42*(8), 795–819.

Abstract

Author abstract: “This review examines the efficacy of curriculum-based measurement (CBM) as an assessment methodology for enhancing student achievement. We describe experimental-contrast studies in reading and mathematics in which teachers used CBM to monitor student progress and to make instructional decisions. Overall, teachers’ use of CBM produced significant gains in student achievement; however, several critical variables appeared to be associated with enhanced achievement for students with disabilities: teachers’ use of systematic data-based decision rules, skills analysis feedback, and instructional recommendations for making program modifications. In general education, positive effects for CBM were associated with use of class profiles and implementation of peer-assisted learning strategies. Implications for instructional practice and future applications of CBM are described.”

Studies Included

Number of Studies: 15

Years Included: Does not specify

Grades Included: Does not specify

Search Procedures: Does not specify

Study Selection Criteria: In order to meet the criteria for inclusion, studies must have:

1. Described research for experimental-contrast studies with students with mild to moderate disabilities
2. Utilized a pretest–posttest design for at least one achievement measure
3. Included twice-weekly data collection, teachers’ use of data for instructional decision making, and a treatment period of at least seven weeks

Synthesis Method

This study describes and reviews the results of studies on CBM. First, the synthesis describes studies that incorporate data-based decision rules. Then, it discusses studies in which skills-analysis feedback about student performance was provided to teachers. Finally, it describes studies that also include the provision of instructional recommendations when making program modifications. Following this discussion of studies that focus on results for students with disabilities, the synthesis describes selected studies conducted in general education classrooms that focused on the addition of peer-mediated strategies to the CBM progress monitoring system.

Synthesis Results

The synthesis found that teachers' simple collection of CBM data may not be powerful enough to effect student achievement and that the following five features may be critical for efficacious use of CBM with elementary- or middle-school students with mild to moderate disabilities: significant student gains are realized when teachers respond to the CBM database by tailoring the instructional program to student needs; adherence to a data-decision framework that includes both goal raising when progress is higher than expected as well as implementation of instructional changes when progress is less than expected appears important for stimulating student growth; computer applications for data collection, storage, management, and analysis may enable teachers to be more efficient in using CBM and contribute to overall satisfaction with procedures; skills analysis, when available and when used in conjunction with consultation, also appears to provide information that may help teachers focus on aspects of student performance that are relatively strong or weak; and some form of instructional consultation or ongoing recommendation system may be needed by teachers to devise meaningful programmatic changes.