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Writing Intervention for Spanish-Speaking English Language Learners: A Review of Research

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# **Structured Abstract**

**Clinical Question:** Would Spanish-speaking ELL students who struggle to learn to write (P) benefit more from writing intervention that addresses cognitive (executive function) and social well-being (motivation, peer inclusion) (I), or writing intervention strategies that address written language text macrostructure or microstructure only (C), as shown by significant changes in macro- and microstructural components in students' written compositions (O)?

# Method: Review

**Study Sources:** ERIC, PsychARTICLES, PsychINFO, Education Research Complete, ASHA.org, JSTOR, *Elementary School Journal, Reading Teacher, American Educational Research Journal* 

**Search Terms:** ESL, ELL, Spanish-English learners, emerging bilinguals, Spanish-speakers, ESOL, intervention, instruction, strategies, planning, revising, organizing, writing, text composition, expository, narrative writing, vocabulary, syntax, morphology, self-regulation, executive functioning

# Number of Included Studies: 3

## **Primary Results:**

- 1. Explicit instruction of the writing process, including linguistic features of writing (syntactic, semantic, and orthographic) and revision strategies, appears to be beneficial for ELLs.
- 2. When writing is viewed as a social process or provided in a group setting where peer review or peer responses are included, ELLs significantly increased in their written language outcomes, including topic development, organization, meaning, sentence construction, and mechanics.

## **Conclusions:**

- 1. There is limited evidence on using writing strategies to improve ELLs written language outcomes; therefore, there is a great need for further investigations on writing strategies that address cognitive, linguistic, and self-regulatory skills in ELLs.
- 2. Using self-regulated strategy development instruction, combining explicit instruction, self-review, and peer models may be beneficial for addressing the writing abilities in ELLs.

# Writing Intervention for Spanish-Speaking English Language Learners: A Review of Research

## María R. Brea-Spahn Megan Dunn Davison

#### Scenario

A third-grade teacher who was concerned about one of his students, Alexandra, recently approached Daphne, a monolingual elementary school speech-language pathologist (SLP). Alexandra is a 9-year-old Spanish– English bilingual student who has been learning English since kindergarten. Alexandra's mother is originally from Cuba and reportedly uses Spanish in the home approximately 75% of the time, and her father is U.S. born and speaks only English. When the family is together for meals, completing homework, and celebrations, both languages are used. Alexandra understands Spanish; however, her language of choice when socializing and completing academic tasks is English.

Alexandra attends a regular third-grade classroom, and her teacher and mother describe her as a very hardworking, shy child who easily cries when she becomes frustrated with academic text composition. Daphne assumed that Alexandra's struggles with text composition were related to her emerging bilingual status. Alexandra started kindergarten at age 5 and was considered a "non-English speaker." She received primarily English instruction because she had tested low on English language proficiency tests and she produced almost no oral or written language in the classroom. In first grade, Alexandra struggled with decoding simple texts in English, but eventually caught up to her peers; therefore, no interventions were necessary that school year. It was not until the second grade that Alexandra's language and literacy skills were assessed using a variety of tests in both Spanish and English after her teacher suggested that she was noticeably withdrawn and floundering academically. Standard scores in an oral language and a decoding assessment were within the norms of typical performance. However, she had below-average scores in tasks that involved phonological working memory and retrieval. Her performance on a spelling inventory revealed she had considerable difficulties spelling orthographical,

phonological, and morphological patterns within words. Intervention in the area of spelling was provided within small groups of peers, but little emphasis was placed on written text composition that year.

At the beginning of third grade, Daphne adapted a writing rubric (Westby & Clauser, 1999) to evaluate Alexandra's expository written samples in English and discovered that Alexandra did not employ any planning strategies (i.e., graphic organizers, reflecting on the prompt, or outlining) prior to initiating writing. She also lacked clear openings in her paragraphs, which were limited in length. She exhibited reduced use of cohesive devises and elaboration of ideas via the integration of clausal connectives. When she analyzed Alexandra's use of syntax, she determined that Alexandra used only simple sentences with no subordination and that some of her syntactic constructions appeared to be more characteristic of Spanish. An analysis of vocabulary extracted from her samples enabled Daphne to determine that Alexandra primarily used high frequency (tier 1) words more characteristic of the oral language register and that she omitted morphological endings. An analysis of her spellings revealed phonologically-based misspellings with some influence from Spanish phonology (e.g., "famaly," "wach"). According to Daphne, Alexandra's syntactic, semantic, and orthographic skills would benefit from explicit instruction. Daphne believes this would also maximize the integration of structures in both of Alexandra's languages. Finally, when given a questionnaire about her attitudes and feelings about writing, Alexandra expressed that she felt anxious during writing assignments and that she "did not like them." Daphne thought that Alexandra would be a prime candidate for writing intervention focused on strategic learning and selfregulation, but is inexperienced with teaching English language learners (ELLs). Daphne began a literature search for evidence regarding writing intervention programs validated with monolingual Spanish speakers and ELLs.

#### **Background and Rationale**

According to the 2010 U.S. Census, the Latino population increased by 55% to include a total of 50.7 million (U.S. Census Bureau, 2012). These increases in the general population have been observed in the schoolage population as well. Approximately 20% of the school-age population speaks a language other than English in the home with 15% of those children reporting speaking English "less than very well" (Motel, 2012). Slightly more than half (52.8%) of the school-age children who speak a language other than English at home speak Spanish as their home language (U.S. Census Bureau, 2012). Therefore, educational programs now serve a large percentage of children who are primarily Spanish speaking or who are bilingual. Only 7% of students with limited English abilities scored at proficiency level in reading and writing in grade four (National Center for Education Statistics, 2011), with approximately 60% of SLPs providing speech and language services to ELLs and an average of seven students per SLP (American Speech-Language-Hearing Association, 2010).

Most research about English language learners' development of academic knowledge focuses on oral language skills; as a result, "there is a paucity of research on becoming literate in two languages, or more" (Moll, Sáez, & Dworin, 2001, p.436). In fact, most studies focus on children and adolescents' developmental patterns when learning to write in both Spanish and English (e.g., Escamilla, 2000; Freeman & Freeman, 1997; Moll et al., 2001). Fewer empirical investigations have delved into how micro level (e.g., lexical, syntactic, or discourse) elements in the written samples of second language learners are influenced by instruction.

Two instructional approaches are noted in the literature for improving written language for struggling students. The more traditional approach is teachercentered, focuses on discrete microstructural skills, uses scripted writing tasks, and depends on preprinted materials (i.e., textbooks or worksheets). Instruction involves a series of specific skills and typically is presented first without a writing context. The teacher accentuates grammar and conventions, and manages the topics, audience, and time allotted for writing. The traditional writing approach embraces whole-group instruction and focuses on the final written product, including grammar and writing conventions (Pollington, Wilcox, & Morrison, 2001; Tidwell & Steele, 1995). One concern with this approach to teaching writing is students may be less invested in writing experiences that concentrate on grammar, punctuation, or usage than they would be in actual content learning interactions.

In contrast, a relatively newer approach focuses instruction on executive function and motivational aspects of the writing process, and teaches struggling writers to break writing tasks into manageable subtasks (Baker, Chard, Ketterlin-Geller, Apichatabutra, & Doable, 2009). The SRSD (Self-Regulation Strategy Development; Harris, Graham, Mason, & Friedlander, 2008) combines explicit instruction in self-regulation procedures with strategy instruction. Development of SRSD was influenced by the cognitive-behavior modification work of Meichenbaum (1977), selfregulation research (e.g., Hallahan & Spano, 1983), and Vygotsky's (1986) social origin of self-control and development of the mind.

There are six steps for strategy acquisition in SRSD lessons: (a) develop pre-skills, (b) discuss the strategy, (c) model the strategy, (d) memorize, (e) guided practice, and (f) independent practice. Procedures for self-regulation (i.e., self-instruction, goal-setting, self-monitoring, and self-reinforcement) are embedded in SRSD. Instruction is recursive rather than linear; lessons may be repeated and revisited based on individual student needs. Graham, Harris, and Mason (2005) also found that adding a peer support component to SRSD had positive effects on the performance of struggling writers. Particularly, peers helping each other apply what they have learned could facilitate the academic performance of young children, at least those who experienced difficulty learning to write. Graham et al. (2005) found that including peer support in the strategic self-regulation writing instruction resulted in advantages in the number of story elements contained in posttest narratives, time spent composing posttest informative papers, and knowledge about how the process of planning a paper.

The success of directly teaching writing strategies to monolingual students with disabilities has been well documented in the literature (Graham, 2006). Selfregulated strategy development instruction for teaching writing strategies to monolingual students who are identified as low-achieving or struggling learners, for example, has been tested in multiple studies utilizing group experimental as well as single-subject designs (Baker et al., 2009; Graham & Perrin, 2007; Rogers & Graham, 2008). The findings from these studies consistently show that this type of instruction has a positive and strong impact on students' writing (Mason & Graham, 2008). Because the available information on SRSD focuses on monolingual students, Daphne is uncertain whether that approach would be effective for her ELL students.

## The Clinical Question

Daphne's hypothesis was that intervention strategies that focused on supporting the development of academic language use might be beneficial for Alexandra. Though both traditional interventions and SRSD approaches would enable Daphne to address Alexandra's difficulties with micro- and macrostructures in her writing, Daphne was concerned about other features of Alexandra's writing process. Because Alexandra did not plan or display the use of strategies for organizing her essays, Daphne hypothesized that intervention strategies that scaffold the development of self-regulatory behaviors would be effective. She also thought that, because Alexandra was already displaying self-doubt and frustration, interventions that address attitudes and beliefs, and promote self-efficacy during writing would help her. With these assumptions, Daphne used the PICO format (Centre for Evidence Based Medicine, 2001) to frame her clinical question: Would Spanish-speaking ELL students who struggle to learn to write (P) benefit more from writing intervention that addresses cognitive (executive function) and social well-being (motivation, peer inclusion) (I) or writing intervention strategies that address written language text macrostructure or microstructure only (C) as shown by significant changes in macro- and microstructural components in students' written compositions (O)?

## Search for Evidence

The goal of this search is to locate, evaluate, and compare outcomes of studies relevant to writing development and instruction in monolingual Spanishspeakers and Spanish-speaking English language learners. The essential purpose of such a search is Daphne's need to determine the most effective writing intervention approach for students like Alexandra.

#### Information Retrieval

Daphne conducted multiple searches via computer and print sources to locate as many empirical studies and articles as possible. She used the following databases to identify research related to Spanish writing development and writing intervention with Spanish-speaking English language learners: Educational Resource Information Center (ERIC), PsychARTICLES, PsychINFO, Education Research Complete, and the American Speech Language and Hearing Association's (ASHA) journal database. Each of these databases is accessible through EBSCOHost Publishing, which is available to subscribed K-12 school libraries. Publications in print by Ferreiro and Teberosky (1999), Teberosky and Tolchinsky (1995), and Tolchinsky (2003) also were consulted with the purpose of identifying developmental patterns in the development of writing devices among monolingual Spanish-speakers. Computer searches of specific journals were also completed. For instance, JSTOR (Journal Storage), the Elementary School Journal database, the Reading Teacher, and the American Educational Research Journal were consulted. For computer searches, descriptor terms (words characterizing the desired population, intervention, and outcome measures) were included to yield the greatest number of relevant studies. These terms included:

- Population terms—(ESL, ELL, Spanish–English learners, emerging bilinguals, Spanish-speakers, ESOL)
- Intervention terms—(intervention, instruction, strategies, planning, revising, organizing)
- Outcome terms—(writing, text composition, expository, narrative writing, vocabulary, syntax, morphology, self-regulation, executive functioning)
- A combination of terms from the following inclusion guidelines [(a) through (c)] was also used.
  - a. The sample had to include participants identified as English as a second language learners, English language learners, limited English proficient, emerging bilinguals, writers of English, Spanish speakers, or English speakers of other languages, as these are commonly identified in the literature as descriptors for children whose English language proficiency is still in development as a result of a different native tongue or first language.

- b. The participants had to be in elementary, middle, and high school.
- c. Intervention had to include writing strategies. For instance, studies that focused on cognitive processes, linguistic structures, and executive functions related to the text composition process were included. Studies in which the intervention focused on decoding, comprehension, vocabulary, or syntax without it being embedded in the framework of a strategic writing instruction paradigm/procedure were not included.
- d. The studies had to be published in a peerreviewed journal between 1980–present.

#### **Evaluating the Evidence**

Table 1 provides a detailed summary of the three included studies, including the participating sample, design, dependent variables, and results.

A summary of appraisal points for the selected articles, based on Gillam and Gillam (2006), was used to determine the quality of evidence for each study and included eight appraisal points: comparisons, random assignment, participants, initial group similarity, blinding, measures, statistical significance, and practical significance. Table 2 provides the summary of appraisal points for each study. None of the studies evaluated received all eight appraisal points with a range between 4 and 6 total points. Garcia-Sanchez and Fidalgo-Redondo (2006) received the highest score with 6 points, and provided the most evidence to guide Daphne in choosing best practices in writing for Alexandra. As can be observed in Table 2, results from this study suggest that interventions that center on the development of selfregulation can influence the structure, coherence, and quality of students' writing products. Specifically, both interventions utilized in the Garcia-Sanchez and Fidalgo-Redondo (2006) study showed a significant improvement with a large effect size in the time students spent on planning, writing, and revising their texts-all areas of the writing process with which Alexandra seemed to struggle.

#### Making the Evidence-Based Decision

Daphne's search for written language strategies for Alexandra, an ELL student, began with reviewing the literature for evidence regarding writing strategies that target linguistic, cognitive, and social–motivational features, as in SRSD instruction, in ELL students. The review and analysis of evidence in three research studies indicated that evidence for using multiple strategies for writing outcomes with ELL students is better than more traditional, individual instruction for writing. However, this evidence is limited; only one of the three studies demonstrated both the statistical and practical significance of using a self-regulated strategy development instruction. Daphne wondered how to interpret the evidence with such a small number of research articles.

From the little research that is available on the influence of instruction on ELL writing development, a few general lessons might be extracted. First, strategies may be useful as examples of good teaching, but these must be modified to meet the unique needs of ELLs like Alexandra (Escamilla, 2006). No two emerging bilinguals are the same and every ELL brings different backgrounds to the literacy-learning context. In contrast, an ELL student who is developing literacy in his or her second language, like Alexandra, may have at her disposal some basic underlying and common language proficiency structures and strategies that may be useful and transferrable from her native language to her second language. However, the list of strategies that "work" and can be used efficiently in both languages remains widely variable across investigations.

Three key findings in the instruction of writing with ELL students, as summarized in the studies in Table 1, include: (a) ELLs appear to advance more in their writing ability when instructions use structured writing, rather than free writing, (b) both cognitive and linguistic approaches to intervention appear to have reasonably positive outcomes on writing products, and (c) there appear to be no effects of cooperative learning groups in the teaching of ELL writing. Escamilla (2006) and Shanahan and Beck (2006) warn that while teaching specific writing elements has its benefits, a one-size-fits-all approach to teaching will not enhance academic performance in ELL learners like Alexandra. From previous research, it is widely recognized that students who demonstrate difficulty with reading and writing, including ELLs with learning disabilities or language

disorders, would benefit from active instructional strategies that provide opportunities for students to practice use of unfamiliar vocabulary, more complex sentence structures, and executive functions.

Together, effective instruction that targets the structural components of language, cognitive strategies that support executive functions, and the co-creation of an educational context in which social and cultural identities are supported seem to be equally important in meeting the academic needs of ELL students. However, the evidence from Prater and Bermudez (1993) and Garcia-Sanchez and Fidalgo-Redondo (2006) suggest that despite the importance of addressing students' difficulties in mastering complex literacy skills, research for combined approaches for writing and language intervention is not well established (Graham & Hebert, 2010). On the other hand, a small body of intervention research (Mason, Harris, & Graham, 2011, Mason, Hickey Snyder, Sukhram, & Kedem, 2006) has resulted in the identification and validation of effective instructional components and approaches for teaching reading comprehension, writing, and language to students identified with language-learning disabilities. These same instructional components are suggested for ELL students (Garcia-Sanchez & Fidalgo-Redondo, 2006; Rivera, Moughamian, Lesaux,, & Francis, 2008).

Because Alexandra seems to have difficulties with retrieval and working memory capacity, and she is not effectively using her self-regulation skills when writing, Daphne has begun an SRSD instructional program with her where curriculum-based materials and lessons scaffold Alexandra's learning and move her from dependence upon the teacher and materials to independent performance. This program is based upon what is known to be effective with monolingual children who struggle with writing and the results of Prater and Bermudez (1993) and Garcia-Sanchez and Fidalgo-Redondo (2006). Alexandra's first lesson was on the writing process and how to set goals that help her understand the task to be completed, fostering effort and motivation. Daphne used analogies (e.g., "Like a pilot in control of a plane, you can control your writing.") in teaching the first lesson. In the next lesson, Alexandra practiced memorization. Following that, Daphne modeled the strategy of using support materials, and how and when to use them (i.e., check-sheet for self-monitoring, rocket graph for self-reinforcement, self-statement sheets). Steps for developing main ideas and the five rules for summarization also were modeled. For the last step, Daphne modeled how to complete a written response of what Alexandra learned after reading the curriculum-based text. Following modeling, Alexandra developed and recorded personal self-statements to be used before, during, and after reading, and throughout the writing process. Lessons were repeated with group/ peer collaborative practice until Alexandra and the other students demonstrated that they could use these strategies with the supporting materials and then without support. The focus of all lessons was to scaffold instruction until students independently implemented the reading and writing process without prompts.

#### Authors' Note

María R. Brea-Spahn is an Assistant Professor at the University of South Florida. Dr. Brea-Spahn teaches in the Department of Communication Sciences and Disorders at USF. Recent research focuses on the interactions between working memory, semantic knowledge, and language-specific phonological patterns within emerging bilingual lexicons. Additional areas include syntactic approaches to analysis of Spanish and English narrative discourse and implementation of strategic writing approaches.

Megan Dunn Davison is a Research Assistant Professor at the University of New Mexico. Dr. Dunn Davison's research focuses on early language and literacy development in children from diverse backgrounds and factors that impact school readiness outcomes. In addition, she conducts research on comprehensive reading and writing interventions on the language and literacy outcomes of school-age students identified with language-based learning disabilities and students identified as English language learners.

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Table 1. Summary of Intervention Studies

Intervention Studies in Spanish monolinguals	Sample Description	Purpose	Intervention Description, Length	Dependent Variables	Results
Garcia-Sanchez & Fidalgo- Redondo (2006)	<i>n</i> = 121, 5th and 6th grade with language disabilities or low achievement; Spanish- speaking	Extension of research in Spanish children with learning disabilities and low achievements	<ul> <li>Two Experimental Groups:</li> <li>Self-Regulated Strategy Development model (Harris &amp; Graham, 1996), n = 48</li> <li>Social Cognitive Model of Sequential Skill Acquisition (Zimmermann, 2000, 2002), n = 41</li> <li>One Control Group:</li> <li>Standard curriculum; no process-oriented or cognitive- strategy instruction only instruction on handwriting, grammar, and spelling, n = 32</li> <li>Intervention groups participated in their respective programs in the second part of the 2003– 2004 academic year, three times a week in groups of 6–8. There were 25, 50-minute sessions for each intervention group</li> </ul>	<ul> <li>Text-based productivity (quantitative measures of paragraphs, sentences, verbs, words)</li> <li>Text-based coherence (quantitative measures of anaphoric, lexical, argumentational, referential, relational and density indices)</li> <li>Text-based structures (e.g., introduction, conclusion)</li> <li>Reader-based structure, coherence, and quality scores</li> <li>Self-efficacy using a 1–9 rating scale, provided self-judgments of their capability to perform successfully writing skills within a writing task</li> </ul>	<ul> <li>Text-Based Measures:</li> <li>Experimental groups &gt; Control group in productivity (d = 1.989), in density of relational coherence (d = 1.058), and in total structure (d = 0.879)</li> <li>Reader-Based Measures:</li> <li>Experimental groups &gt; Control group in structure (d = 1.308), in coherence (d = 1.948), and in quality (d = 1.173). No statistically significant differences between experimental groups</li> <li>Self-Efficacy:</li> <li>Only SCM experimental group had an effect on self-efficacy &gt; Control group self-efficacy total (d = .931)</li> </ul>

Table 1. Summary	of Intervention	Studies (	(continued)
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Intervention Studies in Spanish monolinguals	Sample Description	Purpose	Intervention Description, Length	Dependent Variables	Results			
	Intervention Studies in English–Spanish ELLs							
Gomez, Parker, Lara Alecio, & Gomez (1996)	<ul> <li>N = 72</li> <li>6th grade,</li> <li>Hispanic</li> <li>students who</li> <li>were low-</li> <li>achieving</li> <li>and exhibited</li> <li>varying levels</li> <li>of English</li> <li>proficiency*</li> <li>*Some sample</li> <li>attrition took</li> <li>place</li> <li>Final sample</li> <li>n = 48</li> </ul>	Comparison of two instructional strategies and two levels of frequency of instruction	Two Experimental Groups: • Free writing (FW), $n = 45^*$ ; five classrooms; 2 classrooms practiced writing twice a week, while 3 others practiced writing 4 days per week • No time constraints on writing • No topic constraints, except on testing days (i.e., Fridays) • No error correction • Peer collaboration encouraged during planning and revision phases • Writing seen as a social process • Communication regarding writing errors was encouraged and supported by the teacher • Structured writing (SW), $n = 27^*$ ; one classroom • Topics assigned by teacher • Time constraints on writing: Students wrote for nine minutes every day • Writing seen as an individual process • Error corrections by teacher, but no discussion • Intervention groups participated in their respective programs for six weeks during the summer. Fidelity of implementation through daily monitoring, observational checklists, and the award to each individual classroom of a "treatment fidelity percentage score." A weekly monitoring visit was also conducted. *Some sample attrition took place, thus original <i>n</i> reduced: FW = 23, SW = 25	<ul> <li>Three types of indices of writing quality and productivity employed:</li> <li>Micro-indicators: Percent of correctly spelled words, percent of correct word sequences</li> <li>Analytic Ratings: Topic development, mechanics, organization of thoughts, meaning conveyed, and syntactic constructions</li> <li>Holistic scoring: Overall quality and clarity of communication</li> <li>Productivity: Simple frequency count of words written or total number of words</li> </ul>	<ul> <li>Overall, SW &gt; FW, FW deteriorated in skills</li> <li>The SW had more growth in spelling</li> <li>Both groups made gains in analytic rating scores (topic development, organization, meaning, sentence construction, or mechanics), but no significant gains were found between both groups</li> <li>No statistically significant gains in the holistic score (overall success in communicating a message), but SW student scores were higher than FW students</li> <li>No differences in total of words written</li> <li>Overall: Explicit instruction on revision strategies is beneficial for ELLs</li> <li>Structured writing seems to be more beneficial for ELLs in structural aspects of writing, particularly spelling</li> </ul>			

Intervention Studies in Spanish monolinguals	Sample Description	Purpose	Intervention Description, Length	Dependent Variables	Results			
	Intervention Studies in English–Spanish ELLs							
Prater & Bermudez (1993)	N = 46 4th grade Hispanic and Asian-American Identified as LEP but all were in regular education classrooms (not currently enrolled in ESL or bilingual classroom)	Investigate effectiveness of peer response groups with LEP writers	<ul> <li>Groups were randomly assigned to individual sessions or small group (4–5 students) sessions.</li> <li>Personal writing task was used as a pretest and posttest</li> <li>Instruction was daily for 3 weeks</li> <li>Small group instruction:</li> <li>Step 1: Students met in groups and jointly choose a writing topic; students then worked individually on writing</li> <li>Step 2: Group shared first draft and gave group feedback (positive, elaboration, and clarification)</li> <li>Step 3: Students individually revised writing based on group feedback in Step 2</li> <li>Step 4: Group edited each other's written response</li> <li>Step 5: Students individually rewrote final written response</li> <li>Individual instruction: Same steps only all was included individual work</li> </ul>	<ul> <li>Overall quality of samples (6-point holistic score)</li> <li>Fluency (number of words, number of sentences, and number of idea units in each sample)</li> </ul>	<ul> <li>No significant group differences in pretest or posttest for overall quality (<i>p</i> = 0.35)</li> <li>No significant group differences for number of sentences (<i>p</i> = 0.06)</li> <li>Significant group differences for those in the small group condition was observed for number of words (<i>p</i> = .05) and number of idea units (<i>p</i> = 0.001)</li> </ul>			

# Table 1. Summary of Intervention Studies (continued)

Table 2. Summary of Appraisal Points for Selected Articles

Criteria	Garcia-Sanchez & Fidalgo-Redondo (2006)	Gomez, Parker, Lara Alecio, & Gomez (1996)	Prater & Bermudez (1993)
Comparisons (control group or one or more treatment groups)	Yes	Yes	Yes
Random assignment	Yes	Yes	Yes
Participants (information provided to determine similarity to population relevant to practitioner)	Yes	Yes	Yes
Group similarity (only difference was treatment)	Yes	Yes	Yes
Blinding	Unknown	Unknown	Unknown
Statistical significance ( <i>p</i> -values reported)	Yes	No	Yes
Practical significance (variance or standard deviations reported)	Yes	No	No
Total	6/8	4/8	5/8