Appendix 1. Technical information on the studies

Recommendation 1. Screen for reading problems and monitor progress

The Panel rated the level of evidence as Strong. It considered 21 studies that addressed the criterion-related validity of assessment measures to screen English learners in reading and to monitor their reading progress over time. The body of research on early screening measures meets the standards of the American Psychological Association for valid screening instruments (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999).

Eighteen reviewed studies conducted screening and criterion assessments with English learners at different points in time on measures of phonological awareness, letter knowledge, and word and text reading. Although the number of studies in this category was large, we noted that in many of these studies the samples of English learners were not adequately representative of the population of English learners in the United States. So, we have some concern about the generalizability.

However, the fact that so many studies have replicated these findings supports this recommendation. In addition, the set of screening measures demonstrates moderate predictive validity for English learners from homes speaking a variety of languages: Spanish, Punjabi, Tamil, Mandarin, Cantonese, Farsi, Hmong, and Portuguese, among others.

Example of a criterion-related validity study

In a recent study by Geva and Yaghoub-Zadeh (2006), second-grade English learners (Cantonese, Punjabi, Tamil, and Portuguese) and native English speakers were assessed in English on cognitive and linguistic measures (nonverbal intelligence, rapid letter naming, phonological awareness, vocabulary, and syntactic knowledge) and reading measures (pseudoword reading, word recognition, and word and text reading fluency).

Phonological awareness, rapid letter naming, and word recognition accounted for the bulk of the variance on word and text reading fluency. These measures accounted for 60 percent and 58 percent of the variance on measures of fluency of word and text reading, respectively, after oral language measures (vocabulary and syntactic knowledge) were entered into the hierarchical regression models. The pattern of relationships among the measures was similar for the English learners and native English speakers. Oral language measures, although entered first into the regression models, accounted for just 11 percent and 12 percent of the variance on measures of word and text reading fluency, respectively. In other studies the predictive validity for oral language measures is even smaller for kindergarten and the first grade. We thus assert that oral language proficiency is a poor predictor of subsequent reading performance.

Studies that systematically monitored student progress over time in grades 1 to 5

Four studies also investigated the regular monitoring of student progress over time (Baker & Good, 1995; Dominguez de Ramirez & Shapiro, 2006; Leafstedt,
Richards, & Gerber, 2004; Wiley & Deno, 2005), with three of four investigating the use of oral reading fluency. Two of these focused specifically on the technical issues of monitoring progress regularly. They indicated that oral reading fluency was sensitive to growth over periods as short as two weeks when used in the early grades (Baker & Good, 1995) and when used with students up to grade 5 (Dominguez de Ramirez & Shapiro, 2006). In two of the studies (Baker & Good, 2005; Wiley & Deno, 2005) oral reading fluency predicted the performance of English learners on comprehensive reading tests such as the SAT-10 and state-developed reading assessments.

**Comparable expectations for English learners**

An interesting and important sidelight of the validity studies is the corresponding set of descriptive statistics. Many of the studies demonstrate that English learners can perform at comparable levels of proficiency to native English speakers on measures assessing phonological awareness, word reading, and reading connected text fluently. These studies have been conducted with English learners in the primary grades who receive their instruction exclusively in the general education classroom alongside their native-English-speaking peers. It is in these contexts that they develop comparable word reading, word attack, and spelling skills in kindergarten through the second grade (Chiappe & Siegel, 1999; Chiappe, Siegel, & Wade-Woolley, 2002; Lesaux & Siegel, 2003; Limbos & Geva, 2001; Verhoeven, 1990, 2000).

The comparable development of early reading skills for English learners appears to extend beyond accuracy in word recognition and spelling. There is evidence that English learners can develop equivalent degrees of fluency in reading both word lists and connected text by the second grade (Geva & Yaghoub-Zadeh, 2006; Lesaux & Siegel, 2003). There is also some limited evidence that English learners can develop equivalency with native English speakers in reading comprehension (Chiappe, Glaeser, & Ferko, 2007; Lesaux, Lipka, & Siegel, 2006; Lesaux & Siegel, 2003). We conclude that it is reasonable to expect that English learners can learn to read at rates similar to those of native speakers if they are provided with high-quality reading instruction.

**Recommendation 2. Provide intensive small-group reading interventions**

The Panel rated the level of evidence as **Strong**. We located four high-quality, randomized controlled trials demonstrating support for the practice of explicit, systematic small-group instruction. Each of the studies met the standards of the What Works Clearinghouse (WWC). Conducted at various sites by different research groups, they targeted different interventions that share core characteristics in design and content.

For sample sizes, there were 91 first graders in one of the studies of *Enhanced Proactive Reading*, 41 first graders in the other, 33 students in grades 2–5 for *Read Well*, and 17 students in kindergarten through third grade for *SRA Reading Mastery*. All the students were English learners. In three of the studies, all were students reading at or below the first-grade level.

Effect sizes were consistently positive for reading but inconsistent for English
language development. Only the study of Enhanced Proactive Reading (Vaughn, Mathes, et al., 2006) demonstrated a statistically significant effect in reading. Yet all the studies demonstrated substantially important effect sizes for reading: 0.89 and 0.25 for Enhanced Proactive Reading, 0.76 for SRA Reading Mastery, and 0.25 for Read Well.

Despite the different names and some differences in lesson content and sequencing, all three interventions have many features in common: fast-paced, intensive, highly interactive small-group instruction; frequent review; frequent opportunities for students to respond; heavy emphasis on systematic teaching of phonological awareness and phonics principles; use of decodable text; and emphasis on fluency as well as comprehension.

Example of a study of intensive small-group reading intervention

In one Enhanced Proactive Reading study (Vaughn, Cirino, et al., 2006), 91 English learners below the 25th percentile in English reading from four schools were randomly assigned (at the student level) to the intervention or comparison condition. The intervention involved daily small-group reading instruction focusing on five areas: phonological awareness, letter knowledge, word recognition, fluency, and comprehension. There were 120 50-minute lessons. Teachers modeled new content, and the lessons were fast paced. Students’ responses were primarily choral, with some individual responses. Students in the comparison group received the same core reading instruction as students in the intervention condition, and many students also received supplemental instruction, although it was different from the supplemental instruction provided to English learners in the intervention condition.

The What Works Clearinghouse concluded that the effects for reading achievement were not statistically significant (largely because of analysis at the classroom level, which decreased power), but five of the seven effect sizes, as well as the average effect size, were large enough to be substantively important. These effects were average for overall reading achievement (effect size = 0.27) and for specific measures of letter-sound knowledge (0.26), decoding (word attack, 0.42), reading fluency (DIBELS passage 1, 0.32; DIBELS passage 2, 0.27), and word reading efficiency (0.41). Impacts on letter-word identification and passage comprehension were not considered important (0.13 and 0.06, respectively).

In the second Enhanced Proactive Reading study (Vaughn, Mathes, et al., 2006), which met the WWC standards with reservations (because of randomization problems), there was a statistically significant and substantively important impact on reading overall (0.89), on decoding (word attack, 1.53), and on comprehension (1.32).

Together, these two studies, plus the other studies in this set, showed potentially positive effects in reading achievement and no discernible effects in English language development.

Recommendation 3. Provide extensive and varied vocabulary instruction

The Panel rated the level of evidence as Strong. We reviewed three studies that directly investigated the impact of vocabulary instruction with English learners. A randomized controlled trial (Carlo et al., 2004) reviewed by the What Works Clearinghouse and was found to meet the WWC evidentiary standards with
reservations (because of differential attrition). Perez (1981) also conducted a randomized controlled trial, and Rousseau, Tam, and Ramnarain (1993) conducted a single-subject study. All three studies showed improvements in reading comprehension, and in the one study that assessed vocabulary specifically (Carlo et al., 2004), the effect was positive.

The Panel also considered that many studies of vocabulary instruction for native English speakers have found that explicit word meaning instruction improves reading achievement (see Beck & McKeown, 1991; Blachowicz & Fisher, 2000; Blachowicz, Fisher, Ogle, & Watts-Taffe, 2006; Mezynski, 1983; National Institute of Child Health and Human Development, 2000; Stahl & Fairbanks, 1986). We also reviewed intervention research conducted with English learners.

**Example of a vocabulary intervention study**

In the study of the *Vocabulary Improvement Program* (Carlo et al., 2004), 16 classrooms were randomly assigned to treatment ($n = 10$) and control ($n = 6$) conditions. These classrooms included 142 fifth-grade English learners and 112 English-only students. The intervention lasted 15 weeks. At the beginning of each week, 10 to 12 target words were introduced, and instruction was provided four days per week for 30 to 45 minutes. Each fifth week was a review of the previous four weeks.

On Mondays English learners previewed a reading assignment in their native language. On Tuesdays intervention activities began, with English learners reading the assignment in English and defining the target vocabulary words in large-group discussion with the teacher. On Wednesdays the English learners completed cloze activities (fill in the blanks) in small groups (heterogeneous groups based on language). On Thursdays students completed word association, synonym/antonym, and semantic feature analysis activities. On Fridays specific intervention activities varied, but the central objective was to promote general word analysis skills, rather than to focus specifically on learning the target words.

In the control classrooms, English learners received instruction normally included in the school curriculum.

In the WWC analysis the intervention was found to have a potentially positive impact on both reading achievement and English language development. But because of the small sample size (with the classroom as the unit of analysis), the gains in these domains were not statistically significant. The effect size in reading comprehension was 0.50, and the average effect size across five specific measures of English language development was 0.43. Both effect sizes were considered substantively important.

Perez (1981) also found that a vocabulary intervention had a positive impact on reading achievement with third-grade English learners. In a multiple baseline study, Rousseau et al. (1993) found that discussion of key words prior to text reading in combination with teacher reading of the text prior to students’ reading of the text on their own resulted in a positive impact on both oral reading and reading comprehension.

**Reading interventions and vocabulary development**

These three studies are the only direct tests of the impact of vocabulary instruction on the reading development of English learners. But it is important that many complex interventions that have improved
the reading achievement of English learners also include explicit teaching of vocabulary. Various studies reviewed positively by the What Works Clearinghouse make it clear that these more complex interventions have been successful in increasing English learners’ reading and language achievement, but these studies were not designed to allow the specific effects of vocabulary teaching to be calculated. These successful programs include Read Well (Denton, Anthony, Parker, & Hasbrouck, 2004); Instructional Conversations (Saunders, 1999; Saunders & Goldenberg, 1999); Enhanced Proactive Reading (Vaughn, Cirino, et al., 2006); and SRA Reading Mastery (Gunn, Biglan, Smolkowski, & Ary, 2000; Gunn, Smolkowski, Biglan, & Black, 2002). In all these programs, potentially confusing or difficult words for English learners were drawn from reading texts and given additional instructional attention, often using procedures similar to those noted in the explicit vocabulary studies reviewed above.

Recommendation 4. Develop academic English

The Panel rated the level of evidence as Low. Two studies (Scientific Learning Corporation, 2004; Uchikoshi, 2005) demonstrate that focused interventions in two relatively narrow areas of academic English (quality of oral narrative and syntax) are potentially effective. But because the studies address very selected aspects of academic English and only indirectly address classroom instruction, we cannot conclude at this time that the studies affirm the effectiveness of instruction in academic English. Additional support is provided by a recent classroom observational study that correlates devotion of specific blocks of time to English language development with enhanced outcomes.

The two randomized controlled studies pertaining to academic English (Scientific Learning Corporation, 2004; Uchikoshi, 2005) are described in greater depth on the What Works Clearinghouse website (www.whatworks.ed.gov). Both were assessed as possessing high control for internal validity; they were rated as meets evidence standards without reservations.

In one randomized controlled trial (Uchikoshi, 2005), 108 Spanish-speaking English learners were assigned to watch either 54 half-hour episodes of Arthur (Arthur emphasizes stories with a plot, conflict, and resolution) or the same number of episodes of Reading Between the Lions (a book-based program emphasizing phonics and reading). Arthur had an overall positive impact on measures of English language development (effect size = 0.29) and specifically on overall quality of the students’ retelling a story (0.44); these effects were not statistically significant. See Dickinson and Tabors (2001) and Snow, Tabors, Nicholson, and Kurland (1995) for discussions of the role of narratives in emerging literacy and the link of narratives to the subsequent academic success of monolingual children.

Example of a study of academic English

The correlational study by Saunders, Foorman, and Carlson (2006) supports the recommendation that student growth in
oral language is stronger in classes that designate specific blocks of time for English language development. This observational study was conducted in 85 kindergarten classrooms in 11 school districts in two states with large populations of English learners. In 26 classrooms the entire school day was in English. In the remaining 59 classrooms teachers used Spanish for most of the day but spent some time on English language development instruction (also known as ESL or ESOL). The Woodcock Language Proficiency Battery—Revised: English and Spanish Forms (WLPB-R; Woodcock, 1991; Woodcock & Muñoz-Sandoval, 1993) was used to measure oral language development; word reading skills were assessed with the word identification (Identificación de letras y palabras) subtest from the WLPB-R. Students were assessed at the beginning and the end of the school year.

Two findings are worth noting. First, whether academic instruction was in English or Spanish, classrooms with a fixed block of time devoted to English language development had greater proportions of time during the school day devoted to oral language development. Students in these classes made significantly greater growth in both language and literacy outcomes than students in classes where English language development was infused throughout the day. So, it seems important for teachers to have a block of time each day during which English language development is the primary focus.

Second, very little time was devoted to building academic English in any of the various programs. On average, only 4.5 percent of the time was devoted to vocabulary development and less than 2 percent of the time was spent on work on language structures, such as grammar and syntax. In other words, less than 10 percent of the time was devoted to developing academic English (see also Arreaga-Mayer & Perdomo-Rivera, 1996).

**Recommendation 5. Schedule regular peer-assisted learning opportunities**

The Panel rated the level of evidence as Strong. Three studies of English learners addressed peer-assisted learning (Calhoon, Al Otaiba, Cihak, King, & Avalos, 2006; McMaster, Kung, Han, & Cao, in press; Saenz, Fuchs, & Fuchs, 2005) and two investigated the use of cooperative groups (Calderón, Hertz-Lazarowitz, & Slavin, 1998; Klingner & Vaughn, 1996).

Two studies were randomized controlled trials, and two were high-quality quasi experiments. The Saenz et al. study (randomized controlled trial) met the WWC evidence standards without reservations. Calhoon et al. was also a randomized controlled trial. The Calderón et al. quasi experiment met the WWC criteria with reservations. McMaster et al. was a methodologically acceptable quasi experiment. Because a set of four studies across multiple sites conducted by multiple research teams reached consistent conclusions about the positive academic impacts of structured work in heterogeneous teams of two or four, we consider the evidential basis strong.

The study by Klingner and Vaughn (1996) used a weaker design (with threats to internal validity). This study compared peer-assisted learning (using groups of two) with reciprocal teaching (using groups of four). Both interventions seemed promising, and impacts were roughly equivalent for the two. But because the design did not include a control group, the study cannot make strong claims. It does, however,
provide additional evidence of the potential effectiveness of structured peer-assisted learning.

**Nature of the impacts on student learning**

In the kindergarten (Saenz et al., 2005) and first-grade (Calhoon et al., 2006) studies, positive effects were found for peer-assisted learning on letter-sound and word attack measures, phoneme awareness, and oral reading fluency. The effect sizes were substantively important. In grades 3–6 the impact on reading comprehension was significant.

**Example of a study on peer-assisted learning**

The Saenz et al. (2005) study provides a good example of how peer-assisted learning works and how this research is frequently conducted. Twelve classroom teachers were randomly assigned to peer tutoring and control conditions. Within each classroom four groups of English learners were identified: two English learners with learning disabilities, and three students per group in low, average, and high achieving groups, for a total of 11 students per classroom. Peer-assisted instruction was conducted three times per week in 35-minute sessions for 15 weeks. Relatively strong readers were paired with relatively weak readers for the tutoring sessions, and pairs were rotated every three to four weeks. Each student assumed the role of tutor and tutee and engaged in three reading activities: partner reading with story retelling, summarizing text (paragraph shrinking), and making predictions (prediction relay). In these activities the stronger reader was the tutee first, and tutors were trained to respond with structured prompts when tutees were having difficulty. Treatment fidelity was very high, above 90 percent in all areas.

In this study, there was a positive impact on reading comprehension, as measured by questions answered correctly. There was no interaction with learner type, and the effect sizes were 1.03 for English learners with learning disabilities, and 0.86, 0.60, and 1.02, respectively for the low, average, and high achieving groups. These effect sizes were substantively important.
Appendix 2. Levels of evidence for the recommendations in the practice guide

We rely on the What Works Clearinghouse (WWC) Evidence Standards to assess the quality of evidence supporting educational programs and practices. The What Works Clearinghouse addresses evidence for the causal validity of instructional programs and practices according to WWC Standards. Information about these standards is available at www.whatworks.ed.gov/reviewprocess/standards.html.

The technical quality of each study is rated and placed in one of three categories:

- **Meets evidence standards**—for randomized controlled trials and regression discontinuity studies that provide the strongest evidence of causal validity;
- **Meets evidence standards with reservations**—for all quasi-experimental studies with no design flaws and randomized controlled trials that have problems with randomization, attrition, or disruption; and
- **Does not meet evidence standards**—for studies that do not provide strong evidence of causal validity.

Criteria for assessing problems of attrition and randomization are described in detail in a set of Technical Working Papers. The following are the main reasons for excluding studies:

1. There is only one teacher per condition or one school per condition. This creates a major problem in interpretation because it is uncertain whether one particular teacher or one particular school produces the effect, or whether the effect is due to the practice.

2. Failure to provide pretest information on a salient pretest variable—for quasi experiments only. In this case we don’t know whether the effect is due to the practice or to important initial differences between the experimental and control groups.

3. Differential attrition between intervention and control groups or extremely high attrition (without an adequate attempt to account for this factor in data analysis procedures).

**Strong level of evidence**

In general, characterization of the evidence for a recommendation as strong requires both studies with high internal validity (studies whose designs can support causal conclusions) and studies with high external validity (studies that in total include enough of the range of participants and settings on which the recommendation is focused to support the conclusion that the results can be generalized to those participants and settings). Evidence for this Practice Guide is strong if:

- A systematic review of research generally meets the standards of the What Works Clearinghouse and supports the effectiveness of a program, practice, or approach—and there is no contradictory evidence of similar quality.

OR

- Several well designed, randomized, controlled trials or well designed quasi experiments generally meet the standards of the What Works Clearinghouse and support the effectiveness of a program, practice, or approach—and there is no contradictory evidence of similar quality.
Moderate level of evidence

In general, characterization of the evidence for a recommendation as moderate requires studies with high internal validity but moderate external validity or studies with high external validity but moderate internal validity. In other words moderate evidence is derived from studies that support strong causal conclusions but for which generalization is uncertain, or from studies that support the generality of a relationship but for which causality is uncertain. Evidence for this Practice Guide is moderate if:

- Experiments or quasi experiments generally meet the standards of the What Works Clearinghouse and support the effectiveness of a program, practice, or approach with small sample sizes or other conditions of implementation or analysis that limit generalizability—and there is no contrary evidence.

OR

- Correlational research with strong statistical controls for selection bias and for discerning influence of endogenous factors, and there is no contrary evidence.

- For assessments, evidence of reliability that meets the standards in Standards for Educational and Psychological Testing but provides evidence of validity from samples that are not adequately representative of the population on which the recommendation is focused.

Low level of evidence

In general, characterization of the evidence for a recommendation as low means that the recommendation is based on expert opinion derived from strong findings or theories in related areas or expert opinion buttressed by direct evidence that does not rise to the moderate or strong level. Evidence is low if it does not meet the standards for moderate or high.
Notes

15. Chiappe & Siegel (1999); Chiappe, Siegel, & Wade-Woolley (2002); Lesaux & Siegel (2003); Limbos & Geva, (2001).
16. Chiappe, Siegel, & Wade-Woolley (2002); Geva et al. (2000); Lesaux & Siegel (2003); Limbos & Geva (2001); Manis et al. (2004).
22. Arab-Moghadam & Sénéchal (2001); Baker (2006); Baker, Gersten, Haager, & Dingle (2006); Baker & Good (1995); Chiappe, Siegel, & Gottardo (2002); Chiappe, Siegel, & Wade-Woolley (2002); Dominguez de Ramirez & Shapiro (2006); Geva & Yaghoub-Zadeh (2006); Geva et al. (2000); Lafrance & Gottardo (2005); Leafstedt, Richards, & Gerber (2004); Lesaux & Siegel (2003); Limbos (2006); Limbos & Geva (2001); Manis, Lindsey, & Bailey (2004); Quiroga, Lemos-Britton, Mostafapour, Abbott, & Berninger (2002); Swanson, Sáez, & Gerber (2004); Verhoeven (1990, 2000); Wang & Geva (2003); Wiley & Deno (2005).
24. Chiappe, Siegel, & Wade-Woolley (2002); Geva et al. (2000); Lafrance & Gottardo (2005); Lesaux & Siegel (2003); Limbos & Geva (2001); Manis et al. (2004).
25. Chiappe, Siegel, & Wade-Woolley (2002); Geva et al. (2000); Lesaux & Siegel (2003); Limbos & Geva (2001); Manis et al. (2004); Swanson et al. (2004).
29. Chiappe & Siegel (1999); Chiappe, Siegel, & Wade-Woolley (2002); Lesaux & Siegel (2003); Limbos & Geva (2001).
30. August & Hakuta (1997); August & Shanahan (2006); Geva et al. (2000).
32. Chiappe, Siegel, & Wade-Woolley (2002); Geva et al. (2000); Lesaux & Siegel (2003); Limbos (2006); Manis et al. (2004); Townsend, Lee, & Chiappe (2006).
33. Cisero & Royer (1995); Gottardo (2002); Quiroga et al. (2002).
34. Chiappe & Siegel (2006); Chiappe, Siegel, & Wade-Woolley (2002); Lesaux & Siegel (2003); Geva et al. (2000); Limbos & Geva (2001); Verhoeven (1990, 2000).
36. August & Siegel (2006); Quiroga et al. (2002); Shanahan & Beck (2006).
37. Denton et al. (2004); Gunn et al. (2002); Vaughn, Cirino, et al. (2006); Vaughn, Mathes, et al. (2006).
39. In two of the four intervention studies, instructional assistants were trained to provide the instruction. Gunn et al. (2002); Vaughn, Cirino, et al. (2006); Vaughn, Mathes, et al. (2006); Cirino et al. (2007).
42. For further information on the What Works Clearinghouse, visit www.whatworks.ed.gov.
44. Gunn et al. (2002).
45. Cirino et al. (2007); Gunn et al. (2002).
46. Gunn et al. (2002).
47. Franklin (1986); Limbos & Geva (2001).
48. Gunn et al. (2002); Cirino et al. (2007).
49. In the intervention studies, teachers and instructional assistants were trained to provide instruction.
51. Carlo et al. (2004); Perez (1981).
52. Carlo et al. (2004); Perez (1981); Rousseau, Tam & Ramnarain (1993).
55. Gersten, Dimino, & Jayanthi (in press).
61. August et al. (2005).
62. Carlo et al. (2004); Perez (1981); Rousseau et al. (1993).
64. Carlo et al. (2004).
67. Carlo et al. (2004); Perez (1981); Rousseau et al. (1993).
68. NICHD (2000).
69. Baker et al. (2006); Gersten et al. (2006).
71. August & Hakuta (1997); Bailey (2006); Callahan (2005); Diaz-Rico & Weed (2002); Francis, Rivera, et al. (2006); Genesee et al. (2006); Goldenberg (2006); Meltzer & Haman (2005); Scarchella (2003); Schleppegrell (2001, 2004); Snow & Fillmore (2000).
72. Proctor et al. (2005).
74. August & Hakuta (1997); Callahan (2005); Francis, Rivera, et al. (2006); Genesee et al. (2006); Goldenberg (2006); Meltzer & Haman (2005); Scarchella (2003); Snow & Fillmore (2000).
75. Fillmore & Snow (2002).
76. Michaels & Cook-Gumperz (1979); Saunders et al. (2006); Schleppegrell (2004).
83. August & Hakuta (1997); Francis, Rivera, et al. (2006); Meltzer & Haman (2005); Scarchella (2003); Snow & Fillmore (2000).
84. Francis, Rivera, et al. (2006); Saunders, Foorman, & Carlson (2006); Schleppegrell (2004); Fillmore (2004); Scarchella (2003).
85. Francis, Rivera, et al. (2006); Gibbons (2002).
is not a valid predictor of who needs extra support in learning to read in the early grades in no way indicates that oral English language proficiency is not important for the development of reading in the long term. In fact, experts consistently consider building oral proficiency in the features of academic English to be critical. In Recommendation 1, we were addressing screening measures for learning how to read (the act of reading and understanding the relatively straightforward books suitable for students in the early grades).

96. Saunders et al. (2006).
98. 90 minutes is the median amount of time per week in the research.
102. Calhoon, Al Otaiba, Cihak, King, & Avalos (2006); McMaster et al. (in press); Saenz, Fuchs, & Fuchs (2005).
104. Calderón et al. (1998); Saenz et al. (2005).
105. Saenz et al. (2005).
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