

English Language Learners Who Struggle With Reading: Language Acquisition or LD?

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Abstract

We review empirical research on English language learners (ELLs) who struggle with reading and who may have learning disabilities (LD). We sought to determine research indicators that can help us better differentiate between ELLs who struggle to acquire literacy because of their limited proficiency in English and ELLs who have actual LD. We conclude that more research is warranted to further elucidate the strengths and learning needs of subgroups of underachieving ELLs, to help us determine who should qualify for special education, and to clarify why some ELLs who do not have LD still struggle with language and literacy acquisition. Future research should account for the complexities involved in becoming literate in another language and focus more on cultural and contextual factors that affect student achievement.

In this article, we review empirical research about English language learners (ELLs; see Note) who experience reading difficulties and ELLs with learning disabilities (LD). ELLs are rapidly gaining visibility in school districts around the country. According to the U. S. Department of Education (USDOE) and the National Institute of Child Health and Human Development (NICHD), 20% of people beyond the age of 5 speak a language other than English at home, and it is estimated that by the year 2030, about 40% of the school population will speak English as a second language (ESL; USDOE & NICHD, 2003). Demographic evidence has suggested that this population already has a presence in many of the nation's school districts—in 2002, 43% of the nation's teachers had at least one ELL in their classrooms (USDOE & NICHD, 2003). Nevertheless, the majority of ELLs were enrolled in a small number of districts (Zehler et al., 2003). Although the majority of ELLs (77%) speak Spanish as their first language (Zehler et al., 2003), ELLs are a heterogeneous population in terms of ethnicity, nationality,

socioeconomic background, immigration status, and generation in the United States, among others (August & Hakuta, 1997).

ELLs tend to exhibit lower academic achievement (particularly in literacy) than their non-ELL peers, and similar negative trends are observed in other educational outcomes (e.g., grade repetition, school dropout; Abedi, 2002; August & Hakuta, 1997; Zehler et al., 2003). Due to accountability regulations, a sizable proportion of districts report that ELLs are participating in statewide testing efforts; however, it is difficult to obtain an accurate portrait of ELL achievement due to limitations in data collection and reporting practices (e.g., how to interpret data from ELLs who received test accommodations, and how to determine how recently reclassified ELLs previously performed, given that many districts do not track outcomes for *former* ELLs; Zehler et al., 2003).

The scarce data on ELLs with special needs suggest that the majority have LD with reading difficulties as the core problem (56%); the second most prevalent disabilities category among

the ELL population in special education is speech-language impairment (24%; USDOE & NICHD, 2003). Interesting enough, compared to ELLs without disabilities, ELLs with disabilities are more likely to receive fewer language support services and to be instructed only in English. Moreover, the majority of ELLs with disabilities (55%) tend to receive special education services in segregated contexts (Zehler et al., 2003). Compared to their non-ELL peers in special education, the instructional programs for ELLs with disabilities are not "as aligned with State content/performance standards" (Zehler et al., 2003, p. viii). Unfortunately, Zehler et al. (2003) found that outcome data for this population were not disaggregated by level of English language proficiency.

ELLs Struggling to Learn: An Emerging Knowledge Base

We know that increasing numbers of ELLs are enrolling in schools and that a large proportion struggle to learn or

are underachieving, but what does research say about the causes of these problems or about effective interventions? A question commonly raised is, "Do ELLs struggle to develop literacy because of their limited proficiency in English or because of learning disabilities (LD)?" Unfortunately, the research addressing this issue is inadequate, as is the research focusing on many other basic questions, such as,

what is the nature of the relationship between language proficiency and literacy skill? Is that relationship the same across and within languages? Is there a level of oral language knowledge that is prerequisite to successful literacy acquisition? Is the level the same for learners of different first-language backgrounds, of different ages, of different levels of first-language literacy? . . . Is literacy knowledge represented the same way for monolingual and bilingual populations? Are literacy skills and deficits acquired in the first language directly transferred to the second, and, if so, under what conditions? (August & Hakuta, 1997, pp. 71, 128–129)

Systematic reviews of the research in child development, psychology, and special education have suggested that researchers have rarely focused on the intersection of learning, language background, race, and disability; hence, educators cannot rely on a sound research knowledge base to address the needs of ELLs who struggle to learn (Artiles, Trent, & Kuan, 1997; Graham, 1992; McLoyd & Randolph, 1985).

ELL Special Education Placement in Changing Policy Contexts

ELL placement in special education is arguably a more complex issue than the placement of culturally and linguistically diverse students more generally, mainly because linguistic and immigration factors are added to the composite of cultural, socioeconomic, and ethnic influences. These added factors force us to consider not only the

problem of overrepresentation but also of underrepresentation in special education (Donovan & Cross, 2002). General education teachers sometimes hesitate to refer ELLs to special education because they cannot determine if ELLs' difficulties with learning to read are due to second language acquisition issues or LD (USDOE & NICHD, 2003). Many educators are confused about district policies regarding the timing of referrals and about whether ELLs must have acquired a certain level of English proficiency before the referral process can be initiated (Harry & Klingner, in press). This apparently paradoxical situation reminds us that educators should be concerned with a failure to address the special education needs of students as well as with their inappropriate placement in special education.

It is important to examine the extent to which ELL placement trends in special education are being shaped by current policy developments. Indeed, multiple (often contradictory) reforms and initiatives are unfolding that complicate the education of ELLs. For instance, language support and bilingual education programs have been abolished in some states with large ELL enrollment. On the other hand, accountability demands placed on schools and teachers to increase the academic achievement of ELLs and non-ELLs with and without LD are increasing at a time when limited support is provided to fulfill such expectations.

Similarly, the recent reauthorization of the Individuals with Disabilities Education Act (IDEA; 2004) includes significant changes that affect education for ELLs. First, the new IDEA has strengthened requirements to track disproportionate representation patterns at the district and state levels. Unfortunately, the infrastructure for collecting placement data on ELLs regarding a host of critical variables (e.g., generational status, language proficiency, opportunity to learn) remains weak. Moreover, disability identification procedures for ELLs vary substantially across the nation's school districts (USDOE & NICHD, 2003), and

such variability has important consequences for referrals to special education, assessment and eligibility procedures, and the provision of specialized instruction.

Second, under IDEA 2004, states may now choose to discontinue the use of the IQ–achievement discrepancy formula and eliminate the requirement for IQ tests as part of the special education identification process. States have the option of using response to intervention (RTI) criteria as part of the identification process. With this dramatically different system, students who show signs of struggling to learn are provided with intensive early interventions. Those students who do not respond to evidence-based instruction are then considered possible candidates for special education. This momentous change has the potential to considerably change the way ELLs who struggle with reading are assisted and identified for special education. Yet we know little about how this process should be carried out so that it best supports ELLs.

In conclusion, we face significant challenges in the education of ELLs at a time when their representation in the school-age population is increasing at an accelerated pace. Policy, technical (e.g., identification procedures), and institutional forces (e.g., data collection infrastructures) are complicating the way we address the already complex needs of this population. Thus, it is urgent that we make systematic efforts to synthesize and critique the emergent empirical knowledge base on ELLs who are struggling to learn to read.

The purpose of this article is to review empirical research on ELLs who struggle to learn to read and who may or may not have LD. ELLs who struggle to read seem to fall into a gray area, and it is often difficult to make eligibility decisions about them. The overarching question we sought to address is, "What can we learn from research to help us better differentiate between ELLs who struggle to acquire literacy because of limited proficiency in English and ELLs who have actual LD?"

Method

Selection of Studies

We selected the studies presented in this synthesis based on a two-step process that involved

1. conducting a comprehensive search for all articles that might be appropriate, and
2. applying selection criteria to determine which articles should be included (Artiles et al., 1997; Klingner & Vaughn, 1999).

We attempted to locate all of the existing research on ELLs who are struggling readers and ELLs who were determined to have LD using four modes of searching: (a) searches in subject indexes, (b) citation searches, (c) consultation, and (d) browsing.

Step 1: Initial Selection

Searches in Subject Indexes. We conducted several computer searches using the Educational Resources Information Center (ERIC), first consulting the ERIC Thesaurus to determine appropriate descriptors for students who are ELLs. Many terms have been used over the years to describe students who are in the process of acquiring English as a second or additional language, including *language minority students* and *limited English proficient*. Searches included sets of descriptors such as, “reading AND learning disabilities AND second language learning,” “limited English proficient AND reading,” and “learning disabilities AND limited English proficient.” When the first set of studies were identified using these descriptors, major and minor descriptors found in these studies were examined to find additional articles. A second set of searches was then conducted with several combinations of descriptors, such as, “culturally diverse students AND learning disabilities,” “minorities AND disabilities AND reading,” “second language learning AND disabilities,” “reading AND English (second language),” and

“bilingualism AND literacy AND limited English speaking.”

Citation Searches. We examined lists of citations from relevant studies to ensure that every article cited was considered for possible inclusion in the synthesis. This approach helped us to identify articles we had not located through our searches in ERIC.

Consultation. We attempted to locate additional studies by contacting a number of researchers who had published articles on ELLs with LD in the past. We sent them letters asking if they had any articles on distinguishing between language acquisition and LD that were in press or in progress, or if they were aware of any other researchers who had written articles focused on the topic.

Browsing. We also conducted hand searches or online searches of the following journals: *Exceptional Children*, *Journal of Learning Disabilities*, *Bilingual Research Journal*, *TESOL Quarterly*, *Reading Research Quarterly*, and the *Journal of Literacy Research* (formerly *Journal of Reading Behavior*). We browsed through these journals’ table of contents. This process allowed us to look for articles not identified through our searches in the ERIC database.

Step 2: Criteria-Based Selection

To determine which studies to include in this review, we established several criteria. We opted to include only those studies that

1. reported original data;
2. concentrated on a K–12 population;
3. focused on students acquiring English as a second or additional language rather than English as a foreign language; and
4. targeted ELLs with LD or ELLs who were struggling readers.

We included studies conducted in other countries than the United States

as long as they otherwise fit our criteria. We opted to include investigations on ELLs with LD even when the specific focus of the study was not literacy, given that the majority of students identified as having LD struggle with reading. We did not limit our search by dates. The earliest study we found was published in 1971, and the most recent was in press. We did not include opinion pieces or reviews in which the authors offered suggestions for how best to distinguish between language acquisition and LD or how best to provide instruction, although there were many of those. We excluded research conducted on pre-K or college students. Furthermore, we did not include general studies about the overrepresentation of culturally and linguistically diverse students in special education.

We eliminated studies about bilingual students who were reported by the authors to be fully proficient in English and their first language rather than in the process of acquiring English (e.g., G. E. Garcia, 1991; Jiménez, García, & Pearson, 1996). In cases where the status of students’ language proficiency was not stated explicitly, we looked for other clues about students’ proficiency levels rather than rejecting the study outright, particularly when the participants had been identified as having reading disabilities and a goal of the study was to inform eligibility decision making with students who spoke a first language other than English (e.g., Miramontes, 1987). When it appeared that the participants in a study reflected a range of proficiency levels, we included the study. The phenomenon of underreporting proficiency information about participants was most apparent with older studies (e.g., Jorstad, 1971; Mathewson & Pereyra-Suarez, 1975).

Another challenge was deciding which reading studies to include, because some authors did not describe students as “struggling,” “at risk,” “low achieving,” or “with LD” in their description of participants, but did organize their findings in this way. When this was the case, we included the

study (e.g., Lindsey, Manis, & Bailey, 2003). When a study included multiple components, we included only relevant components that fit our criteria.

Analysis Procedures

After we assembled the target studies, our next step was to read each one and identify the purpose, participants, methodology, and key findings (see Tables 1–7). This was done by two of the present authors who met semiweekly to compare notes. We then categorized the studies according to broad themes. Within some categories, we then identified subcategories. Our final categorization system included (a) subpopulations of ELLs who struggle to read, (b) the role of context in helping us understand ELLs' struggle to read, (c) referral issues with ELLs who struggle to read, (d) assessment practices with ELLs who may have LD, (e) predictors of reading achievement, (f) instructional interventions for ELLs who struggle to read or who have LD, and (g) ways in which the process of becoming literate in a first and a second language can inform LD eligibility decisions. This categorization scheme became the structure for presenting our findings, as described next.

Results and Discussion

What Do We Know About Population Characteristics and Subtypes?

In this section, we describe research studies in which the authors examined the characteristics of subpopulations of ELLs identified for special education or, similarly, in which the authors developed profiles of ELLs identified with LD. Given the heterogeneity of ELL populations, this type of work seems particularly important for helping us understand differences among ELLs who struggle to read in school. The studies discussed in this section are presented in Table 1.

Findings. In an early study, Jorstad (1971) developed composite profiles of Mexican American students with severe reading disabilities, using the *Illinois Test of Psycholinguistic Abilities*. Students showed strengths in visual processing but weaknesses in auditory processing. All scores falling below average were in auditory areas: grammatic closure, auditory closure, auditory association, auditory reception, sound blending, and auditory memory. Whether these students were experiencing difficulties in auditory processing and reading because of their limited proficiency in English or had actual LD was not clear. Yet the finding that they all had a similar profile would seem to indicate that second language acquisition played a key role.

Artiles, Rueda, Salazar, and Higa-reda (2005) conducted research on subpopulations of ELLs in 11 urban districts in California during the 1998–1999 school year. This research also pointed to the importance of looking at second language acquisition. ELLs who tested as limited in their native language as well as in English showed the highest rates of identification for special education. Another important insight obtained was the need to examine placement data at multiple levels. Although special education placement patterns at the district level did not reflect any problems, significant overrepresentation was observed when the data were examined by grade, special education and language program (straight English immersion, modified English immersion, or bilingual), and subgroup of students. For instance, overrepresentation emerged in fifth grade and continued through high school. ELLs in English immersion classrooms were more likely to receive special education than their peers in modified English immersion or bilingual programs. Artiles et al. raised questions about the theoretical viability of the districts' subgroups and concluded that we need to know more about the specific characteristics of ELLs, particularly for students who test as limited in multiple languages.

Schiff-Myers, Djukic, McGovern-Lawler, and Perez (1994) described a child who had been misclassified as having a language learning disability who seemed to have suffered from language loss or arrested development of her primary language (Spanish) and who was delayed in learning English. The child's difficulties turned out to be temporary, and she eventually mastered English. This case highlighted the challenge in trying to distinguish between temporary difficulties in a new language versus persistent language learning disorders. It also exemplified the type of student who appears to be limited in both the first and second language whom Artiles et al. (2005) identified as most likely to be placed in special education.

Figueroa and Sassenrath (1989) completed a longitudinal study of 60% of the 2,100 students from the tri-ethnic norming sample for the *System of Multicultural Pluralistic Assessment* (SOMPA). They found that Hispanic students who in 1972 had scored at or below the mean on the *Wechsler Intelligence Scale for Children–Revised* (WISC-R) were more likely than their European American counterparts to show higher than expected school grades and achievement. Of interest, among the Hispanic groups, those students who used more Spanish in the home were more likely to show higher than expected achievement than students from bilingual English/Spanish homes (who were more likely to show less than expected growth). This study is important in showing the value of a strong native language foundation and provides unique insights into the characteristics of ELLs who are more and less successful in school.

Argulewicz (1983) examined the effects of ethnic membership, SES, and home language on LD, mental retardation (MR), and emotional handicap (EH) placements in a large sample of Mexican American students and found that the students most likely to be placed in special education (particularly as having LD) were Mexican American ELLs in mid-SES schools

TABLE 1
Studies Included in the Review That Provide Data on Population Characteristics and Subtypes

Study	Purpose	Participants
Argulewicz, 1983	To examine effects of ethnic membership, SES, and home language on LD, MR, and EH placements.	9,950 K–6 students (all of the White, Black, and Latino students in one district): 1,527 Mexican American (538 w/ English and 989 w/ Spanish as their home language), low and mid SES.
Artiles, Rueda, Salazar, & Higareda, 2005	To examine placement patterns across SE programs, grade levels, and three language programs in 11 urban districts. Data disaggregated by language proficiency and other factors.	11 urban school districts in California, each with an average of 64,000 students: 42% ELLs (>90% of Latino descent, majority <i>not</i> recent immigrants, > 70% from low-income backgrounds).
Barrera, 2003	Study 1: To examine students' processing skills by looking at their handwritten class notes. Study 2: To examine merging curriculum-based measurement and dynamic assessment for assessing ELLs for possible LD.	Study 1: 109 educators blindly ranked the handwritten notes of 38 students (12 were bilingual students without LD; 26 were ELL students with LD; of the LD group, 11 had LAS scores of 3 to 5 and were called Type 1; 15 had LAS scores of 1 or 2 and were called Type 2. Study 2: 21 Mexican American students (7 ELL w/ LD, 7 ELL only, and 7 bilingual).
Figueroa & Sassenrath, 1989	To determine the number of incorrect decisions when using WISC-R Full Scale IQ scores to predict school achievement. Students' GPAs and standardized reading and math scores in 1982 compared with their 1972 Full-Scale WISC-R scores.	60% of the 2,100 students (Anglo, Hispanic Spanish speakers, Hispanic Spanish/English speakers, and Hispanic English speakers) from the tri-ethnic norming sample for the SOMPA.
Jorstad, 1971	To develop composite profiles of students with severe reading difficulties using the <i>Illinois Test of Psycholinguistic Abilities</i> .	20 Mexican American students with severe reading difficulties in a rural elementary school in California (no mention of language dominance, although it appears students were ELLs).
Schiff-Myers, Djukic, McGovern-Lawler, & Perez, 1994	To present the case of a child who was misclassified as having communication disabilities.	One ELL child was classified as having a language learning disorder by a CST. She had started school speaking only Spanish but was taught in English.

Note. LD = learning disabilities; MR = mental retardation; EH = emotional handicaps; SES = socioeconomic status; SE = special education; ELLs = English language learners; LAS = *Language Assessment Scales*; WISC-R = *Wechsler Intelligence Scale for Children-Revised*; GPA = grade point average; SOMPA = *System of Multicultural Pluralistic Assessment*; CST = Child Study Team.

who spoke Spanish rather than English at home. These results seem to contradict those of Figueroa and Sassenrath (1989). Argulewicz speculated that the mid-SES schools may have had higher expectations for student achievement and noted that the low-SES schools were more likely to offer bilingual education programs. The findings from this study suggest that placement in special education is affected by school and program characteristics.

Barrera (2003) reported the results of two pilot studies in which he used

alternative assessment procedures to explore the differences among bilingual students and ELLs with and without school-identified LD. In Study 1, 109 educators examined the students' processing skills by looking at their handwritten class notes. They consistently ranked the notes of bilingual students higher than those of ELLs with LD, who tended to write in disjointed fragments and to write verbatim. This type of study is important in helping us understand the characteristics of ELLs who seem to be struggling

in school and the ways in which they might differ from their higher achieving peers. In Study 2, Barrera merged curriculum-based measurement and dynamic assessment for assessing ELLs for possible LD. He found that ELLs with LD scored lower on all measures than ELL students without LD and bilingual students, and that they demonstrated growth after the dynamic assessment procedures. Barrera's findings not only help us understand the characteristics of adolescent ELLs with LD, but they also offer an al-

ternative and potentially more valid way of determining the upper limits of students' school potential.

Discussion. It appears that some subpopulations of ELLs are particularly vulnerable to placement in special education. However, the studies we reviewed only sampled a small proportion of the ELL population, and much more descriptive work is needed. We still have a great deal to learn about population subtypes and about the characteristics of ELLs with LD. Although the U.S. Census Bureau and other data sources provide information about overall categories of culturally and linguistically diverse individuals and the percentages of students who are ELLs, we lack precise information about students' levels of language proficiency in English and in their native

language. In part this is because we still do not have adequate measures of language proficiency, and also because states have kept incomplete data.

As August and Hakuta (1997) illustrated, second language acquisition is a complicated process, influenced by many factors, including but not limited to the sociocultural environment, language proficiency in the first language, attitudes, personality, and perceived status. August and Hakuta lamented the lack of a systematic data collection process at the national level, complicated by variations in state and district policies and numerous "obstacles" (p. 276) such as inconsistent definitions, lack of agreement on common indicators, lack of data, and lack of consensus on how or by whom data should be collected. These problems remain today.

What Do We Know About the Role of Context in Understanding ELLs' Struggles?

In another type of study, the researchers focused on the critical mediating role of context in helping us understand ELL traits and performance. All of these studies included observations in students' classrooms. These studies are important in that they provide another lens through which to view students' school experiences. They are summarized in Table 2.

Findings. Arreaga-Mayer and Perdomo-Rivera (1996) and Harry and Klingner (in press) observed the opportunities to learn that were afforded to ELLs in general education classrooms. Arreaga-Mayer and Perdomo-Rivera described an ecobehavioral

TABLE 2
Studies Included in the Review That Provide Data About the Role of Context in Understanding ELLs' Struggles

Study	Purpose	Participants
Arreaga-Mayer & Perdomo-Rivera, 1996	To describe an ecobehavioral analysis system used to assess students' opportunities to learn in GE and ESL classrooms.	24 ELL students in GE and ESL classrooms in 3 schools (w/ LAS scores of 1–3, indicating beginning to intermediate English proficiency). Determined to be at risk in reading with scores at least 1 year below grade level on the <i>Iowa Test of Basic Skills</i> .
López-Reyna, 1996	To describe a bilingual SE class over a 2-year period as it transitioned from a skills-based approach to a whole-language model.	14 students w/ LD, ages 7 to 10 (2 students proficient only in Spanish, 10 at various levels of bilingualism, 2 in English only). Reading levels in English ranged from prereading to 2nd grade.
Ruiz, 1989	To present the case study of a bilingual student in a self-contained, bilingual SE class. To observe how students and teachers used language for learning.	11-year-old girl who was born in Mexico and came to the United States when she was 2; she only spoke Spanish when she started school and then was instructed in English.
Ruiz, 1995	To examine a bilingual SE classroom and discuss those events that revealed the upper limits of students' skills.	10 linguistically and culturally diverse students, ages 6 to 11, in a self-contained, bilingual SE classroom. Spanish and English proficiency varied considerably—some spoke very little English.
Trueba, 1988	To describe the learning difficulties among ELLs w/ LD in Grades 1–5. Students were followed across home and school settings in an 18-month ethnographic study.	12 ELLs (4 Hispanic, 3 Laotian, 3 Hmong, 1 Vietnamese, and 1 Sudanese) considered "the most educationally needy" among students w/ LD at a school in California.

Note. LD = learning disabilities; GE = general education; SE = special education; ELLs = English language learners; ESL = English as a second language; LAS = *Language Assessment Scales*.

analysis system used in studying general education and ESL classrooms to understand the opportunities afforded to at-risk ELLs to acquire and negotiate a second language and academic content. They found that minimal attention was paid to language development, student engagement was low, and teachers emphasized lectures and a whole-classroom format. Arreaga-Mayer and Perdomo-Rivera concluded that instructional environments and teacher variables have a profound impact on students' academic behaviors and language use. Harry and Klingner observed a similar phenomenon in primary-level classrooms across 12 schools. Instructional quality in general, and the extent to which teachers supported the language development of ELLs in particular, varied widely across schools. Harry and Klingner were quite concerned that despite these variations in students' opportunities to learn, no consideration seemed to be given to classroom ecology by members of referral or placement teams.

Trueba (1988) conducted an 18-month ethnographic study of the learning difficulties of 12 ELLs with LD in Grades 1 to 5. Students' learning problems were manifested in (a) a lack of participation in class activities; (b) a lack of academic productivity; and (c) the presence of stress, fear, confusion, and other signs of ongoing emotional turmoil. Trueba noted that cultural conflict may help explain the difficulties that students experienced in the acquisition of English literacy. School activities seemed to presuppose cultural knowledge and values that these children and their families had not acquired. Although cultural conflict and affective considerations appear to be of critical importance, they have been studied infrequently and reported rarely.

Ruiz (1995) conducted an in-depth study of students in one classroom to ascertain more about the characteristics of different profiles of students who are placed in special education. She examined the contextual features

of the events in a self-contained, bilingual special education class that included 10 culturally and linguistically diverse students ages 6 to 11. She discussed the events that revealed the upper limits of students' language and academic skills and identified three profiles of students, ranging from severe language LD to typical abilities. Similarly, Ruiz (1989) described Rosemary, a student in a bilingual special education classroom, whose performance on standardized tests was quite low, but who, in other contexts, wrote well, was a leader, and used specific, detailed language. This body of research highlights the role of the instructional context in revealing the range of students' communicative and academic competencies and has significant implications for those making eligibility decisions. Students may appear to be competent in one setting but not in another and, thus, should be observed across settings and in varied contexts to obtain a truer picture of their abilities.

López-Reyna (1996) described a self-contained, bilingual special education class as it transitioned from a skills-based approach to a whole-language model. During skills-based instruction, the students completed worksheets and focused on discrete skills. Although they were on task and seemingly engaged, in the whole-language class, students focused more on making meaning and were much more actively involved in learning. They learned to apply comprehension strategies and appeared to make more connections to their own lives. This study made an important point about how different children look in different educational contexts. These implications are similar to those of the Ruiz (1995) study about how students can appear very competent in one instructional setting but not in another.

Discussion. It is imperative that we examine context when considering why a student may be struggling to learn. Cultural conflict and affective considerations appear to be of critical

importance. We know that sociocultural factors play a central role in influencing students' school experiences. Collier and Hoover (1987) argued that some behaviors that appear to indicate LD might be typical for the child's cultural background or a by-product of the acculturation process. They suggested that educators involved in referral and placement decision making consider various characteristics in relation to a child's culture, language, and acculturation. Similarly, Estrin (1993) emphasized the social context of assessment, the influence of culture on student assessment performance, and the role of language and culture in instruction and assessment. More research is needed in these critical areas.

What Do We Know About Prereferral and Referral Issues?

Few research studies have focused specifically on referral issues with culturally and linguistically diverse students (see Table 3). We included these studies to help us understand why ELLs are referred for special education and to what extent those involved in the referral process follow recommended guidelines. Although a handful of scholars (Artiles, Trent, & Palmer, 2004; Ortiz & Yates, 2001; Serna, Forness, & Nielsen, 1998) have urged the implementation of prereferral interventions as a way to reduce inappropriate referrals to special education, the few studies of the referral process that have been carried out have suggested a limited implementation of prereferral strategies. Rather, children seem to be pushed toward a formal evaluation.

Findings. Most recently, Harry and Klingner (in press) used ethnographic techniques to investigate the referral process in 12 schools in a large, diverse metropolitan school district. They found that although teachers were responsible for implementing specified "alternative strategies" designed to address the needs of children they had referred to their schools' Child Study Teams, the quality of these

TABLE 3
Studies Included in the Review That Provide Data About Prereferral and Referral Issues

Study	Purpose	Participants
Carrasquillo & Rodriguez, 1997	To examine the characteristics of Hispanic ELLs referred to or participating in bilingual SE.	46 Hispanic LEP elementary students in New York City who were referred to SE.
Harry & Klingner, in press	To investigate the referral process in a large, diverse school district and to understand factors that contribute to disproportionate representation.	21 observations of CST meetings and multidisciplinary team meetings for 19 ELLs (12 culturally and linguistically diverse schools: 4 w/ predominantly Black school populations, 4 w/ predominantly Hispanic populations, and 4 w/ mixed populations).

Note. SE = special education; ELLs = English language learners; LEP = limited English proficient; CST = Child Study Team.

strategies varied both by teacher and by school. In many cases, it seemed that the requirement for strategies was undermined by teachers' beliefs that they had already done all that was needed and that the child should be formally evaluated as soon as possible.

Carrasquillo and Rodriguez (1997) found a similar pattern in their examination of the characteristics of 46 Hispanic elementary-level ELLs referred to or participating in bilingual special education in a large urban school district. Most referrals were due to teachers' concerns about general academic deficits and low reading or language achievement. They noted that few prereferral interventions were tried with students prior to their placement in special education.

Discussion. It has already been 20 years since Mehan, Hartwick, and Meihls (1986) published their study of the referral and placement process, or, as Mehan later described it, the "school's work of sorting students" (Mehan, 1991). Mehan et al. concluded that the referral process most frequently started in the classroom with a referral from the teacher, continued through psychological assessment, and culminated in an evaluation by the placement committee. The decision to label students seemed to have less to do with the children labeled than with a multitude of other factors. The forces that led to special education placement seemed very similar to those observed

in the schools studied by Harry, Klingner, Sturges, and Moore (2002) in a different part of the country several years later.

It seems we know more about prereferral practices that do not work or, at least, are not implemented in schools than we do about prereferral practices that prove to be effective at reducing inappropriate referrals and are feasible for schools to put into practice. The *timing* of referrals and special education placement for ELLs also ought to be studied more systematically, because it is possible that teachers may be postponing referral decisions due to a lack of understanding of the intersection of second language development and LD.

Harry and Klingner (in press) and Salend and Salinas (2003) offered suggestions for enhancing the referral process. They recommended diversifying Child Study Teams and multidisciplinary teams to ensure that experts in second language acquisition are included, offering training, and considering factors associated with second language acquisition. They also believed that prereferral strategies must become a more central and meaningful part of the referral process. Another way to think about this is that there should be more options within general education for supporting students who show initial signs of struggling to learn (see Ortiz, 1997; Ortiz & Yates, 2001). Barrera (2003) advocated for using curriculum-based assessment

and testing students on material they are exposed to in class as a way of monitoring their progress and determining who should be referred.

What Do We Know About Assessment Practices?

A great deal has been written about bias in testing, particularly regarding measures of potential. We know that intelligence tests tend to underestimate the potential of culturally and linguistically diverse students (Abedi, 2002; Figueroa, 1989; Gonzalez, Brusca-Vega, & Yawkey, 1997; MacSwan, Rolstad, & Glass, 2002; Rueda, 1997; Valdés & Figueroa, 1994). Regrettably, diagnosticians and educators often misinterpret a lack of full proficiency in English as a second language as a widespread intelligence deficit (Oller, 1991) or as a language or learning disability (Ambert, 1986; Langdon, 1989). Psychologists have erroneously concluded that bilingualism retards verbal intelligence, despite evidence to the contrary (August & Hakuta, 1997; Hakuta, 1990). We will not review the body of work on intelligence testing; instead, we only review research studies that focused specifically on assessment issues concerning ELLs with possible LD who are struggling with reading (see Table 4).

Findings. One important line of research has focused on the practices of

TABLE 4
Studies Included in the Review That Provide Data About Assessment Practices with ELLs Who May Have LD

Study	Purpose	Participants
Barrera Metz, 1988	To examine the relative importance of linguistic and cultural information in assessment decisions about Hispanic students referred to SE.	7 psychologists, of whom all but 1 rated themselves as having native or near-native Spanish proficiency, w/ a mean of 9.3 years testing Hispanic students.
Harry, Klingner, Sturges, & Moore, 2002	To understand factors that affected the assessment of students referred for a formal SE evaluation and qualification decisions.	Culturally and linguistically diverse students, including ELLs, in 12 diverse schools; also, teachers, psychologists, and other support staff.
Maldonado-Colon, 1986	To describe the characteristics of Hispanic children identified as having language LD. Qualitative and quantitative data collected from students' files.	73 randomly sampled Hispanic children in the 3–12 age range (41 ELLs from homes where Spanish was spoken), w/ comparison groups of Anglos ($n = 24$) and Blacks ($n = 28$).
Ochoa, González, et al., 1996	To identify school psychologists' assessment practices w/ bilingual and ELL students.	859 NASP members from 8 states who indicated they conducted bilingual assessments.
Ochoa, Robles-Pina, et al., 1996	To determine how school psychologists who had conducted bilingual psychoeducational assessments used interpreters.	859 school psychologists who indicated they conducted bilingual assessments
Ochoa, Rivera, & Powell, 1997	To determine how psychologists complied w/ the exclusionary clause when assessing bilingual and ELL students.	859 school psychologists who indicated they did bilingual assessments

Note. LD = learning disabilities; SE = special education; ELLs = English language learners; NASP = National Association of School Psychologists.

assessors. Several studies of this nature have been conducted over the years, with similar findings. Maldonado-Colon (1986) noted several problematic practices. Most students were tested in English, regardless of their home language, and without accommodations. Spanish language measures were infrequently used. The interpretation of results disregarded issues of language difference. Test performance in English and teacher referral were the most significant variables determining special education placement. Similarly, the psychologist Barrera Metz (1988) found home language information to be rarely considered when making placement decisions.

Ochoa and colleagues (Ochoa, González, Galarza, & Guillemard, 1996; Ochoa, Powell, & Robles-Piña, 1996; Ochoa, Rivera, & Powell, 1997) surveyed 859 National Association of School Psychologists (NASP) members from eight states who indicated they had prior experience conducting bilin-

gual psychoeducational assessments. They published several articles with data from this survey. Ochoa et al. (1997) determined which factors the psychologists used to comply with IDEA's exclusionary clause for bilingual students and ELLs. They identified 17 factors that were overlooked, including consideration of the student's native language and the number of years of English instruction that the student had received. Only 1% attempted to determine if a discrepancy occurred in both English and the student's home language. Ochoa, González, et al. (1996) compared the tests used in English-only and bilingual psychoeducational assessments and found that curriculum-based assessments were used more often with ELLs than with English-only students, and that overall there was more diversity in the tests used with ELLs. Ochoa, Powell, and Robles-Piña (1996) examined the use of interpreters by the same school psychologists and found that al-

though more than half had used interpreters, only 37% of the interpreters had received any formal training.

Harry, Klingner, and colleagues (Harry & Klingner, in press; Harry et al., 2002) focused on factors that affected the assessment process and the decision to identify a student as qualifying for special education. Although school personnel expressed confidence in the ability of the assessment process to discern who truly met eligibility criteria and who did not, Harry et al. found several influences on the process that would suggest otherwise, including teachers' informal diagnoses of children's problems, the influence of school personnel's impressions of the family, external pressures for identification and placement, the exclusion of information on classroom ecology, the choice of assessment instruments, the arbitrary nature of placement decisions, and a disregard for established criteria. Like others, they found that assessors seemed to overly rely on the re-

sults of English-language testing, to the exclusion of native language test results, and to give inadequate attention to language acquisition issues as a possible explanation for students' struggles to learn.

Discussion. These studies have suggested that in many cases, psychologists and others involved in evaluating ELLs for possible special education placement tend to ignore or give insufficient attention to the native languages of the children they are testing. English-language tests are often used even when the student's background warrants bilingual testing. Whether the unexpected underachievement of ELLs can be explained by their limited English proficiency is not given adequate consideration. This phenomenon of paying insufficient attention to students' native languages appears to be a theme that runs across studies conducted over the last 20 years.

What Do We Know About Predictors of Reading Achievement?

A somewhat new line of research with ELLs focuses on finding the best predictors of their reading achievement. Given the numerous studies that have demonstrated the influence of phonological awareness on reading achievement among young native English speakers (e.g., National Reading Panel, 2000), it is not surprising that researchers would seek to determine if similar patterns would emerge with ELLs, and that they would test the validity of phonological assessment measures with ELLs. Some studies have focused on native language predictors of native language reading, others on the predictive power of native language measures for English reading, and still others on English predictors and English reading, or a combination of these. It is important to note that not all of these

studies focused on identifying reading disabilities. Given the challenges in distinguishing between generic low reading ability and actual LD, we opted to include studies that focused on low-achieving or struggling readers when we felt that the study could inform the larger question about distinguishing between language acquisition and LD (see Table 5).

Findings. In a relatively early study of its type, Durgunoglu, Nagy, and Hancin-Bhatt (1993) studied the variables that affected the English reading skills of Spanish-dominant, ELL beginning readers in a transitional bilingual program. They found that Spanish word recognition and Spanish phonological awareness were better predictors of English pseudoword and word reading than English or Spanish oral proficiency or English word recognition. A qualitative analysis of errors indicated that incomplete decoding,

TABLE 5
Studies Included in the Review That Provide Data About Predictors of Reading Achievement

Study	Purpose	Participants
Chiappe, Siegel, & Gottardo, 2002	To examine whether English phonological processing, syntactic awareness, and verbal memory measures used to identify children at risk for reading difficulties are appropriate for children from different language backgrounds.	659 kindergarten students in 32 schools in North Vancouver (540 native English speakers, 59 bilingual students, and 60 ELLs at beginning levels of proficiency) from diverse ethnic and linguistic backgrounds.
Durgunoglu, Nagy, & Hancin-Bhatt, 1993	To study the variables that affect the English reading skills of Spanish-dominant, bilingual beginning readers using Spanish tests of phonological awareness and letter naming and Spanish and English tests of word recognition and oral proficiency.	31 Spanish-speaking, 1st-grade ELLs in a transitional bilingual program identified by their teachers as beginning, nonfluent readers (11 girls, 16 boys; 90%–95% eligible for free or reduced-price lunch). All considered ELLs as determined by state guidelines. Most instruction in Spanish, with some oral English.
Lindsey, Manis, & Bailey, 2003	To determine how well Spanish-speaking children at risk for reading difficulties could be identified w/ a battery of Spanish measures administered in K (as part of a study investigating cross-language transfer).	249 Spanish-speaking ELLs, tested at 3 points during K and 1st grade (w/ very limited English skills at the beginning of kindergarten); students were instructed and tested in Spanish and English. More than 98% of the students qualified for free lunch.
Oh, Haager, & Windmueller, 2004	To determine the beginning kindergarten reading skills that best predicted end of kindergarten reading for ELLs.	600 ELL students (330 boys and 268 girls at beginning to intermediate levels of English proficiency according to the CELDT). 28 SE students in sample.

Note. SE = special education; ELLs = English language learners; CELDT = *California English Language Development Test*.

guessing, and lack of response made up the majority of the errors for the lowest readers. Durgunoglu et al. recommended developing native language phonological awareness as a way to improve reading in English.

In two other studies, the researchers examined the extent to which Spanish testing predicted English and Spanish reading proficiency. Using a battery of measures, Lindsey, Manis, and Bailey (2003) found that predictions from Spanish to English were generally as strong as predictions within Spanish. Children with the lowest reading abilities in both languages tended to have the slowest rapid naming times and print awareness. Letter knowledge was one of the strongest predictors.

Oh, Haager, and Windmueller (2004) also looked at the predictive ability of a battery of tests with ELLs, but their study differed from others in that their focus was only on English literacy. Letter naming fluency and phoneme segmentation fluency were found to be significant predictors of nonsense word fluency. Language variables were not significant predictors over and above the reading variables. Word use fluency stood alone as a language predictor and superseded all reading variables in predicting oral language production at the end of kindergarten.

In a Canadian study of ELLs with different native languages, Chiappe, Siegel, and Gottardo (2002) examined whether measures used to identify children at risk for reading difficulties were appropriate for children from a variety of language backgrounds. Although the bilingual students and ELLs performed lower than the native English speakers on most measures of phonological and linguistic processing, the acquisition of basic literacy skills for children with different language backgrounds developed in a similar manner. Alphabetic knowledge and phonological processing were important contributors to early reading achievement for all three groups. Chiappe et al. concluded that for ELLs, al-

phabetic knowledge may precede and facilitate the acquisition of phonological awareness in English.

Discussion. In sum, the factors that correlated with later reading achievement, whether in English or in the native language, included phonological awareness, print awareness, and alphabetic knowledge. Rapid naming speed also played a role. Yet more research is needed to better understand the interactions of these factors with other aspects of first and second language acquisition and to find the most valid ways of assessing language and literacy skills in both languages. Assessments of phonological awareness, print awareness, alphabetic knowledge, and rapid naming provide early predictors of reading and show promise for identifying students who may benefit from additional literacy instruction before they are referred to special education. This research represents an important shift in thinking away from the identification of within-child deficits and placement in special education toward a focus on identifying children who can benefit from early intervention within a general education framework.

What Do We Know About Interventions for ELLs Struggling With Reading?

We located surprisingly few research studies that described interventions for ELLs with reading disabilities or ELLs who showed signs of struggling to acquire literacy in school (see Table 6). In one type of study, researchers studied reading comprehension strategy instruction. In another, researchers investigated intensive early reading interventions for ELLs. Some of these interventions were implemented in the students' native language, and others in English.

Reading Comprehension Strategy Instruction. Jiménez (1997) taught reading comprehension strategies to five

low-literacy Latina/o readers in middle school. Students were successfully able to learn and apply the strategies. Klingner and Vaughn (1996) also taught comprehension strategies to middle school Spanish-speaking ELLs with LD, using a modified version of *Reciprocal Teaching* (Palincsar & Brown, 1984). Students read English text but were encouraged to use Spanish as well as English in their discussions. An important finding was that a continuum of students—not just students who initially had been adequate decoders but poor comprehenders—benefited from comprehension strategy instruction.

Intensive Reading Interventions. De La Colina, Parker, Hasbrouck, and Lara-Alecio (2001) studied *Read Naturally*, an intensive reading intervention that combines repeated reading, teacher modeling, and progress monitoring, using Spanish materials, in first- and second-grade Spanish-English bilingual classrooms. *Read Naturally* led to measurable improvements in fluency and, to a lesser extent, comprehension. Students who were highly engaged improved the most. Denton, Anthony, Parker, and Hasbrouck (2004) also investigated the effectiveness of *Read Naturally*, but in English. They found no statistically significant differences and only minimal effect sizes favoring *Read Naturally* over a control condition on word identification, word attack, and passage comprehension measures. One can only speculate as to why the students in Denton et al.'s study did not show significant gains in English, whereas the students in De La Colina et al.'s (2001) study, who were instructed in Spanish, did.

Denton et al. (2004) also investigated the effectiveness of *Read Well* on ELLs' English reading. *Read Well* combines systematic, explicit phonics instruction with practice in decodable text and contextualized vocabulary and comprehension instruction. In comparison with matched students who did not receive this extra inter-

TABLE 6
Studies Included in the Review That Provide Data on Interventions for ELLs Struggling with Reading

Study	Purpose	Participants
Reading Comprehension Strategy Instruction		
Jiménez, 1997	To examine the strategic reading abilities and potential of low-literacy Latina/o readers.	5 low-literacy Latina/o middle school students, with varying levels of Spanish and English proficiency: 3 w/ LD in SE; 2 Spanish-dominant "at risk..". All receiving free or reduced-price lunch. Up to 4 grade levels below norm in reading.
Klingner & Vaughn, 1996	To determine the effectiveness of a modified version of reciprocal teaching w/ middle school students who were ELLs and had LD.	26 seventh- and eighth-grade students w/ LD who were ELLs. LAS scores ranged from 1 to 5 (beginning to advanced levels of English proficiency).
Intensive Reading Interventions		
De La Colina, Parker, Hasbrouck, & Lara-Alecio, 2001	To study an intensive reading intervention (<i>Read Naturally</i>) that combined repeated reading, teacher modeling, and progress monitoring, in Spanish, in 1st- and 2nd-grade bilingual classrooms.	53 Spanish–English bilingual 1st- and 2nd-grade students from 4 classrooms, all at beginning levels of English proficiency and all considered low-achieving and "at risk." Most were Mexican American.
Denton, Anthony, Parker, & Hasbrouck, 2004	To examine the effectiveness of two English reading tutoring interventions for Spanish-dominant ELLs (<i>Read Well</i> and <i>Read Naturally</i>) in comparison to nontutored comparison groups. The two interventions were not compared to one another.	93 Hispanic ELLs (22 in 2nd grade, 37 in 3rd grade, 28 in 4th grade, and 6 in 5th grade), ranging in age from 7 to 12 years (48 boys and 45 girls), in bilingual classrooms and transitioning to English. All spoke Spanish as their 1st language and were nominated by teachers as struggling with English reading.
Haager & Windmueller, 2001	To assess a professional development program's capacity to improve early reading instruction for 1st- and 2nd-grade ELLs not reaching benchmarks.	335 Hispanic 1st and 2nd graders, more than 70% of whom were ELLs according to district criteria, including 31 w/ LD (80% of sample spoke Spanish as 1st language)
Linan-Thompson, Vaughn, Hickman-Davis, & Kouzekanani, 2003	To examine the effectiveness of an intervention involving ESL strategies and effective reading practices for at-risk ELLs.	26 second-grade ELLs (identified as limited in English and at risk for reading difficulties); 18 in early transition bilingual programs; 8 receiving ESL support (only); all receiving reading instruction in English (those in bilingual programs previously received Spanish reading instruction). > 70% on free or reduced-price lunch.
Nag-Arulmani, Reddy, & Buckley, 2003	To determine if students who are struggling w/ reading in a nondominant language will respond better to a phonological intervention or to one that addresses oral proficiency.	118 multilingual 7- to 9-year-olds (90 with reading difficulties in English and 28 without reading difficulties), randomly assigned to a phonological intervention, a language exposure intervention, or a control group, in India. All students had been studying English since Grade 1, had not been introduced to any other script prior to English, reported use of at least 3 languages at home, and rated Kannada

Note. LD = learning disabilities; SE = special education; ELLs = English language learners; ESL = English as a second language; LAS = *Language Assessment Scales*.

vention, the *Read Well* students showed significantly more growth in word identification, but not in word attack (i.e., nonword reading) or comprehen-

sion. Denton et al. speculated that students' lack of growth in comprehension could have been because the program's informal rather than systematic

instruction in English vocabulary was insufficient.

Three studies investigated the capacity of phonological interventions

with or without other instruction to improve English reading. Nag-Arulmani, Reddy, and Buckley (2003) compared the outcomes of a phonological intervention and an oral proficiency intervention and found that the group of students who received explicit phonological instruction showed significantly higher gains in reading than language proficiency instruction and control groups—particularly children who began the study with the lowest word reading scores. The ELLs in Linan-Thompson et al.'s (2003) study who received intensive support in English reading in combination with ESL strategies made significant gains on word attack, passage comprehension, phoneme segmentation fluency, and oral reading fluency. Haager and Windmueller (2001) examined the outcomes of an intensive professional development program designed to improve early reading instruction for first- and second-grade ELLs and found that students who initially did not reach benchmarks made steady progress when they received supplemental small-group instruction in phonological awareness and ESL strategies. This line of research shows the potential of early interventions to ameliorate future reading difficulties.

Discussion. Research studies that investigated intensive interventions with ELLs who showed early signs of struggling have shown encouraging results, as have studies of reading comprehension strategy instruction. Early intervention programs that combine phonological awareness and other reading activities with ESL strategies may be the most promising, yet further research is warranted. We still need to know more about the role of native language instruction and about what specific approaches work best with whom and under what circumstances. Future research efforts should take into account the sociocultural contexts in which students learn as well as affective variables such as motivation. Additional research is also needed in special education classrooms that serve

culturally and linguistically diverse exceptional learners.

What Do We Know That Can Inform Eligibility Decisions?

Others have written reviews about effective instructional practices for ELLs with special needs (Artiles et al., 2004; Gersten & Baker, 2000) and second language reading (Fitzgerald, 1995; Garcia, 2000). However, our review differs in that we focus exclusively on students with identified reading disabilities or students who seem to be struggling with reading, and we include studies of school-age students only. Also, we incorporate research conducted outside the United States if it otherwise meets our requirements. The studies reviewed in this section are presented in Table 7.

Early Studies. Two early studies were prescient in their findings. Both pointed to the importance of English vocabulary and phonological and other language skills in learning to read in a second language. Lucas and Singer (1975) studied the relationship between dialect and oral reading ability and found that the ability to infer pictured relationships and to understand spoken English vocabulary was significantly related to oral reading in first grade, and the ability to process English syntactical structures and memory for auditory sequences were related to reading in third grade. Lucas and Singer hypothesized that in Grades 1 to 3, the changes in the relationship between language processing ability and reading were a function not of phonological but of syntactical abilities, which become significantly related to oral reading achievement as the child progresses in school and encounters more complex reading tasks. Mathewson and Pereyra-Suarez (1975) found that ELLs earned lower auditory conceptualization scores on an interference test (using English sounds not present in Spanish) than on a noninterference test (using sounds present in Spanish and English), and those audi-

tory conceptualization scores were strongly related to reading. Yet Mathewson and Pereyra-Suarez urged caution in interpreting auditory conceptualization scores, given their strong relationship with socioeconomic levels.

Relationships Among First and Second Language Oral Proficiency, Native Language Reading, and ESL Reading. English second language oral proficiency, native language reading, and English second language reading are positively related (Fitzgerald, 1995; E. Garcia-Vazquez, 1995; Gottardo, 2002). However, predictors vary by grade level and by whether students are proficient readers in their first language.

Gottardo (2002) studied the relationships among first and second language oral proficiency and reading skills and found that reading and phonological processing were related both within and across languages. The strongest predictors of English word reading were native language and English phonological processing, native language reading, and English vocabulary. Gottardo suggested that an oral vocabulary measure should be included in addition to measures of phonological processing when screening ELLs for early reading difficulties. This seems like a valuable recommendation, and one that is supported by other research.

Carlisle, Beeman, Davis, and Spharim (1999) determined how ELLs' native and second language proficiencies were related to their metalinguistic development in both languages and their achievement in English reading comprehension. Even though the students tended to have limited vocabularies in both languages and to be underachieving as a group in English reading comprehension, a significant portion of the variance in their reading comprehension was explained by the extensiveness of their vocabularies in the two languages and by their phonological awareness. Carlisle et al. concluded that vocabulary development in both the native language and En-

TABLE 7
 Studies About the Process of Becoming Literate in a First and a Second Language That Can Inform Eligibility Decisions

Study	Purpose	Participants
Early Studies		
Lucas & Singer, 1975	To examine the relationship between dialect and oral reading ability for Mexican American children.	60 Mexican American 1st–3rd graders, all born in the United States, “randomly chosen from children of Spanish surname.” English proficiency assessed with <i>Language Background Scale</i> ; some in the sample were ELLs, although it is not clear how many.
Mathewson & Pereyra-Suarez, 1975	To measure the interference of auditory conceptualization in Spanish and to determine the relationship of this interference with reading in English, as assessed with the WRAT and COOP.	80 second graders in 2 schools (34 Mexican Americans; 46 from other ethnic backgrounds), from a range in SES levels. No attempt made to ensure that the Mexican American students spoke Spanish, but authors reported this was “unnecessary” because census data showed that Spanish was the L1 of almost all students. No information about proficiency levels provided, but it appears from the results they were ELLs.
Relationships Among L1 and L2 Oral Proficiency and Reading		
Carlisle, Beeman, Davis, & Spharim, 1999	To determine how ELLs’ L1 and L2 proficiencies were related to their metalinguistic development in both languages and to their English reading comprehension.	57 Hispanic (mostly Mexican American) ELLs w/ below-average reading achievement (19 first graders, 19 second graders, 19 third graders). More than 80% receiving free or reduced-price lunch.
Gottardo, 2002	To determine the relationships among first and second language oral proficiency and reading skills in Spanish–English bilingual students.	85 first graders w/ Spanish as their L1 (6 had received some schooling in Mexico; 79 had received all schooling in the United States), with varying English proficiency and reading levels.
Differences Between More and Less Proficient L2 Readers		
Ammon, 1987	To investigate the effects of students’ vocabularies, schema, and level of acculturation on reading achievement in English on the ITBS.	100 third- to fifth-grade ELLs (36 Hispanic, 64 Cantonese) at different achievement levels (some struggling readers), with 2 to 3 years exposure to English in school; all identified as non-English speaking or LEP when they started school.
Avalos, 2003	To examine the comprehension “errors” of ELLs in a transitional bilingual education program learning to read in English. Also, to determine the level of oral language proficiency needed to comprehend English texts.	22 fourth-grade ELLs in a transitional bilingual education program (93% on free or reduced-price lunch), representing varying levels of oral English proficiency (beginning to intermediate) and English reading. All had initially received Spanish literacy instruction.
Hardin, 2001	To examine how fourth-grade, Spanish-dominant students use cognitive reading strategies to enhance comprehension of English and Spanish texts; to determine how native language reading ability influences second language reading.	50 fourth-grade, Spanish-dominant ELLs, all age 9 or 10 (20 able, 14 average, and 16 less able readers). English proficiency levels (according to the LAS) ranged from 1 (beginning) to 4 (intermediate).
Langer, Bartholome, Vasquez, & Lucas, 1990	To study the ways in which Mexican American students tried to make sense of English and Spanish texts.	12 Mexican heritage fifth graders who had been in U.S. schools for at least 3 years (7 orally proficient in English and Spanish; 2 proficient in neither; 2 proficient in Spanish, not English; 1 proficient in English, not Spanish; 6 born in Mexico, 6 in United States). Mean reading score at the 25th percentile in English, at the 42nd percentile in Spanish.

(Table continues)

(Table 7 continued)

Study	Purpose	Participants
Miramontes, 1987	To analyze oral reading miscues to determine similarities and differences between successful readers and readers w/ LD in their first language and English.	40 Hispanic 4th- to 6th graders: 20 native English speakers, 20 native Spanish speakers in a bilingual program (10 strong readers, 10 w/ reading disabilities identified with a discrepancy formula—only 4 assessed in Spanish). No other info on language proficiency.
Miramontes, 1990	To examine the patterns of oral reading miscues, retellings, and fluency of mixed language dominant, bilingual Mexican American students to develop a better understanding of their reading strategy use.	40 Mexican American 4th- to 6th graders (10 “good” native English readers; 10 “good” native Spanish readers; 20 mixed-dominance students 2 or more years below grade level in English reading or below grade level in Spanish. Students had received limited, inconsistent ESL support services. No other language proficiency data, except that “district-administered oral language proficiency and dominance assessments . . . were used as supportive data.”
Differences Between L2 and Native English Readers		
Knight, Padrón, & Waxman, 1985	To determine how students used strategies in both English and Spanish and how these facilitated their comprehension and recall.	38 third and fifth-grade students (23 Spanish-speaking ELLs, 15 native English speakers)
Padrón & Waxman, 1988	To investigate the cognitive reading strategies used by Hispanic ESL students and the effect of students’ use of strategies on their reading achievement.	82 Hispanic 3rd- to 5th-grade students randomly selected from the population of Hispanic ESL students. Data were not disaggregated for struggling readers, but it appears they were represented in the sample.

Note. LD = learning disabilities; SES = socioeconomic status; ELLs = English language learners; WRAT = *Wide Range Achievement Test*; COOP = *Cooperative Primary Reading Test*; ITBS = *Iowa Test of Basic Skills*; LAS = *Language Assessment Scales*; ESL = English as a second language; LEP = limited English proficient; L1 = first language; L2 = second language.

English and metalinguistic development at the word level should be important priorities because of their effects on English reading comprehension.

Differences Between More and Less Proficient Second Language Readers. Research in this area has taken two general directions: One line of research has focused on the “errors” or miscues made by ELLs when reading in English as a second or additional language. In a different line of research, several researchers have studied comprehension processes using think-alouds.

Examinations of the miscues of ELLs with LD have been conducted by Miramontes (1987, 1990) and Avalos (2003). Miramontes (1987) analyzed oral reading miscues to determine similarities and differences between successful readers and readers with LD in both their first language and English and found that the strategies that

students used depended on their language dominance. Significant differences were found for graphic similarity, sound similarity, grammatical function, comprehension, and grammatical relationships in Spanish, and for the last three of these categories in English. Similarly, Miramontes (1990) found that mixed-dominant students did not differ significantly from good English readers in several areas, including story retelling and use of comprehension strategies, yet performed significantly lower in fluency. Most mixed-dominant students exhibited areas of strength, yet were perceived by teachers to be similar and weak in all skills. Avalos (2003) found that students’ “errors” involved limited knowledge of phonetics, graphemes, semantics, syntax, and vocabulary (including false cognates) and that oral language proficiency in English was an inadequate predictor of “correct” comprehension of English texts. These studies

suggest the need for more consideration of primary language reading in the determination of LD and for a closer look at students’ limitations as well as their strengths.

Think-alouds have been used effectively to examine students’ usage of comprehension strategies (Ammon, 1987; Hardin, 2001; Langer, Bartholome, Vasquez, & Lucas, 1990). Hardin (2001) examined how fourth-grade, Spanish-dominant students used cognitive reading strategies to enhance their comprehension of expository texts in English and Spanish and found that students increased their strategy usage during English reading. Less able readers focused on surface aspects of reading rather than on meaning-making and used fewer strategies. Students’ level of second language proficiency played a less prominent role in second language reading than did the level of their strategy usage in their first language. Langer et al. (1990)

achieved similar results. They found that ELLs' comprehension of both English and Spanish texts depended on their ability to use comprehension strategies. Better readers were distinguished more by their use of strategies than by their fluency in English, and students who did well in one language generally did well in the other. Students' language competence in Spanish enriched their meaning-making in both languages. Ammon (1987) administered the *Iowa Test of Basic Skills* (ITBS) to 100 third- to fifth-grade ELLs and found that unknown vocabulary and a lack of schema were main factors affecting students' achievement test scores.

In sum, less proficient readers seem to differ from more proficient readers in that they focus more on the surface aspects of reading, use fewer comprehension strategies, tap less into schematic knowledge, and have more limited vocabularies. Yet it is significant that ELLs were able to transfer strategies from their native language to English reading. Miscue analysis and think-alouds illuminated more about students' reading processes than was possible with traditional tests.

Differences Between Second Language Readers and Native English Readers. In another line of research, investigators have compared first and second language reading. Similarities and differences between these two processes have important implications for instructional planning and assessment decisions. The first two studies we review in this section focus on word recognition and comprehension. The others concentrate exclusively on comprehension and students' use of metacognitive and cognitive strategies.

Third- through fifth-grade ELLs used fewer metacognitive strategies than native English speakers in two studies by Padrón and colleagues (Knight, Padrón, & Waxman, 1985; Padrón & Waxman, 1988). Knight, Padrón, and Waxman found that ELLs selected strategies with different relative frequencies than native English readers

did. Padrón and Waxman noted that students' perceptions of the cognitive strategies they used had predictive validity for their reading comprehension. Negative (counterproductive) strategies were found to be negatively related to students' gains in reading comprehension. Padrón and colleagues concluded that the use of inappropriate cognitive strategies may be an additional reason why ELLs generally score lower than English monolingual students on reading achievement tests. These findings are similar to those of the studies contrasting more and less proficient second language readers described in the previous section.

To summarize, it would appear that there are key differences between learning to read in one's first language and a second language. A significant finding seems to be the importance not only of phonological awareness, but also of vocabulary in predicting second language reading achievement. This finding was replicated across several studies. Vocabulary knowledge is strongly related to effective text comprehension and appears to be a highly significant variable in second language readers' success (Fitzgerald, 1995; National Reading Panel, 2000).

Discussion. We still need to better understand how students with and without LD differ as they become bilingual and biliterate. As noted in the executive summary of the *National Symposium on Learning Disabilities in ELLs*, it is important to "identify impediments to normal development for those who are not disabled" (USDOE & NICHD, 2003, p. vi). This is an area about which we have little research, although work by scholars such as Trueba (1988) has provided important insights into the effects of cultural conflict on learning. How can we provide ELLs with literacy instruction that is more culturally and linguistically responsive to their interests and needs? What does instruction look like when it is grounded in a cultural theory of human learning and development (Rogoff, 2003)?

Conclusions

Our review of the literature strongly suggests that additional research is warranted to help us understand the characteristics, development, and learning processes of ELLs who struggle to learn to read or who have LD. Researchers face significant challenges regarding the theoretical assumptions and methodological approaches used to investigate the aforementioned areas. Lessons can be derived from this review for research in various domains.

To begin with, it is imperative to intensify research efforts to better define population and subpopulation parameters in ELLs who may or may not have LD. It is essential that researchers inform their work with a deep understanding of the cultural, social, political, and historical processes that shape views of LD. Disabilities are socially constructed. That is not to say that they are not sometimes "real," but that what is considered a disability varies depending on which definition and identification criteria are used and on the contexts in which such decisions are made. Students are placed in special education as the result of a series of social processes that reflect a set of societal beliefs, values, political agendas, and historical events that combine to construct students' identities. "Disabled" becomes the official version of who these children are, and LD becomes the construct by which differences in students' school achievement are explained, to the exclusion of other explanations (Harry & Klingner, in press). This is particularly problematic as applied to distinct populations of learners. The procedures used to determine LD in the United States give insufficient attention to the environmental and institutional factors that help explain variations in individual performance and development. We must be mindful that schools are still too focused on finding the "deficit" in the child rather than on looking at student performance as the result of strong interactions between the individual and cultural contexts.

Such a theoretical shift will enrich explanations for students' struggles and will force us to focus on factors such as a lack of opportunity to learn. The associations between students' socioeconomic status (SES) and school infrastructural forces (e.g., teacher quality, school climate, resources) are strong. Yet why have researchers emphasized the study of the impact of SES on student achievement at the expense of examining the role of opportunity to learn?

These issues are confounded when the student is also an ELL. We note that our broader focus on students who are struggling conveys our underlying belief that students in general are overidentified for high-incidence special education categories and that schools should shift from a focus on locating the problem *within* the child to one of focusing on what can be done to provide support for students with different profiles, based on their needs. For this reason, we are encouraged by RTI models. At the same time, it is necessary to conduct additional research on the regularities of second language development for both ELLs with and ELLs without LD; the role of cultural factors related to first language development should be a key component of such studies (e.g., to account for the complexities involved in becoming literate in another language). Such normative profiles would inform investigations of literacy acquisition trajectories within each of these populations as well.

We argue that population research must rest on interdisciplinary theoretical frameworks to account for individual, interpersonal, and institutional forces. This requires the adoption of frameworks of human development that account for culture, institutional practices, and history (Artiles, 2003; Rogoff, 2003). In turn, as theoretical insights to study populations broaden the unit of analysis from individuals to people using artifacts in goal-oriented activity located in institutional contexts, multimethod approaches will be required (Cole, 1996). A direct implica-

tion of these recommendations is to improve significantly the description of sampling strategies and the samples and contexts in which studies are implemented (Bos & Fletcher, 1997).

The insights obtained from population research, in turn, will assist the research community to develop more accurate identification tools and procedures. It is critical that future investigations on referral, assessment, and identification processes not only address the accurate differentiation between subgroups of ELLs with and without LD (e.g., who should qualify for special education, and why some students who do not have LD still struggle with literacy and language acquisition), but also enhance our understandings of the social, cultural, and institutional contexts of professionals' practices. Furthermore, it is urgent to develop alternative assessment models. We welcome the emergent research that transcends traditional approaches and rests on distinct premises regarding the role of assistance in unveiling student potential. Research from educational anthropology and the sociology of education has the potential to significantly enhance the theoretical insights and methodological resources available to the next generation of assessment, identification, and referral researchers (Mehan, 1991; Varenne & McDermott, 1999).

Additional research is also needed to understand the potential impact of multiple contradictory policies and reforms on practitioners' work during assessment and intervention efforts. Now that IDEA has been reauthorized, examples include policies concerning the disproportionate representation of culturally and linguistically diverse students, accountability procedures, discipline measures, regulations about teaching literacy, and the identification of LD. With the move away from a discrepancy formula as the sine qua non of LD eligibility determination, the field of LD is at a crossroads, while alternative identification procedures such as RTI models are considered (Vaughn & Fuchs, 2003).

We see promise in RTI models as a way of providing students with additional support within general education *before* they have a chance to fail and as a means for determining who may need special education services. Potentially, such models provide a way to address the disproportionate number of ELLs being referred for special education by reducing inappropriate referrals (Vaughn & Fuchs, 2003). However, it is essential that we continue to conduct research to determine which interventions are associated with improved outcomes for ELLs and that we do not assume that research conducted with mainstream populations applies to them. Historically, ELLs have been left out of research samples in special education (Artiles et al., 1997). Critical factors such as language proficiency and ethnicity have not been disaggregated in these studies, leaving many unanswered questions for struggling ELLs. Like previous eligibility criteria, the RTI model presumes that if a child does not make adequate progress when provided with research-based instruction, he or she must have an internal deficit of some kind. We must make sure that the child has in fact received culturally responsive quality instruction designed for ELLs *before* making this determination. The exclusionary criteria in the LD definition still apply—identification of LD should be based on students having received an adequate opportunity to learn.

Thus, the success of RTI models for ELLs will be dependent on several factors, such as designing interventions that rely on a view of literacy as sociocultural practice in which reading skills are embedded (Artiles, 2002), creating a supportive learning environment in which students' cultural and linguistic diversity is perceived as an asset (Baca, 2002; Nieto, 2004; Ortiz, 1997, 2002), and making sure that teachers know a variety of research-based instructional approaches specifically designed for ELLs who show early signs of struggling to learn. Teachers need to know if their interventions are effective and how to ad-

just instruction for students who do not seem to be responding to the first or second tiers of instruction before it is assumed that the instruction was appropriate for the child. Teachers' needs cannot be fulfilled in traditional professional development activities or preservice courses. Research is needed, therefore, on new models of professional learning, in which the ongoing study of professional practice is at the center of efforts and is situated in supportive institutional contexts (Artiles, Trent, Hoffman-Kipp, & López-Torres, 2000). The field is wide open for these lines of research.

Implications for Research and Practice

Our review of the research on ELLs who struggle with reading has generated the following list of recommendations for research and practice. Note that there is overlap across categories.

Research

- Refine language proficiency assessment procedures so that more precise and complete information can be collected about students' levels of language proficiency in English and in their first language. Use multiple measures to determine language proficiency (e.g., test results as well as natural language samples).
- Continue to investigate language acquisition processes, in particular for students who grow up speaking two or more languages.
- Describe ELL research participants in more detail, with information about language proficiencies, ethnicity, socioeconomic level, school history, and family circumstances (e.g., number of generations in the United States, families being migrant workers or not).
- Develop detailed profiles of students who struggle with literacy and who may or may not have LD. These profiles should include descriptions of students' instructional programs,

learning contexts, the quality of interventions, and the history of their opportunities to learn, as well as student characteristics.

Collect additional information about subgroups of ELLs who struggle with reading and are placed in special education to assess the potential differential effects of interventions efforts.

Prereferral and Referral Practices

- Provide early interventions to students who show signs of struggling with reading (before initiating a referral to special education).
- Implement meaningful prereferral strategies within general education as part of the referral process.
- Include experts in language acquisition in all phases of instructional, referral, and assessment processes, particularly when students seem to be delayed in acquiring both their first language and English.
- Consider contextual features, socio-cultural factors, school and program characteristics, and students' opportunities to learn in all phases of instructional, referral, and assessment processes.

Assessment Practices and Eligibility Decisions

- Use alternative ways of assessing students' strengths to determine the upper limits of their potential.
- Conduct observations of students in different settings as part of any evaluation.
- Pay greater attention to cultural and affective considerations when evaluating students (e.g., sources of potential conflict, motivation).
- Give greater attention to students' native language and to the role of language acquisition when determining whether a student may have LD.
- Consider that weak auditory processing skills could relate to language acquisition rather than to a processing disorder or LD.

Evaluate students in their first language as well as in English to determine predictors of reading achievement.

Instructional Interventions

- Combine phonological awareness with other reading and English language development activities (whether instruction is in the student's first language or in English).
- Provide explicit vocabulary instruction to facilitate reading comprehension in the student's first and second language.
- Teach and encourage the use of reading comprehension strategies in the student's first and second language.
- Help students develop a strong foundation in their first language as a way to promote literacy in both their native language and English.

In conclusion, the fields of special education, bilingual multicultural special education, and literacy continue to evolve. The research base in each field is growing, yet remains incomplete. Although, on the one hand, more research is needed to help us differentiate between language acquisition and LD, on the other hand, much is already known about teaching, assisting, and assessing ELLs who struggle to become literate in their first language and in English. Yet it appears that not enough of this knowledge is used in practice. Thus, we not only need more basic research, but also more field-based research to help us better understand the challenges associated with applying what we know in school settings and the resources needed to carry out preferred practices.

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AUTHORS' NOTES

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NOTE

By English language learner, we mean students who speak another language than English, who are in the process of acquiring English as a second or additional language, and who have not yet achieved full English proficiency. We use this term rather than limited English proficient. We use the term bilingual to indicate full proficiency in English and another language.

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