Research Report

English Language Learners With Reading Disabilities: A Review of the Literature and the Foundation for a Research Agenda

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Abstract

The issue of identifying reading difficulties and disabilities in English language learners (ELLs) is a complex one. It is an area that draws on the diverse disciplines of first- and second-language acquisition, literacy, English language learning, and reading, including differences and disabilities research. This literature review aims to synthesize the research that aims to address the topic, focusing on the following three questions:

1. How does one identify reading difficulties/disabilities (RD) in individuals who are learning the English language?
2. What needs to be done to aid in identifying RD in ELLs?
3. What does one do with this information to support the English reading instruction of ELLs with RD?

The first section of the report covers basic terminology and gives an overview of the problem. The second section presents some of the challenges in distinguishing between what might be normal ELL language development from what might be identified as a disability or difference. The third section reviews reading difficulties in various languages and then focuses on reading difficulties when learning a second language. The fourth section provides an overview of the issues surrounding the process of identifying reading difficulties or differences in ELLs. The challenges begin at referral to services and span to measurement of disabilities.[1] The fifth section provides information on interventions and the application of information gained through assessment. The sixth section, the conclusion, points to key considerations related to the identification of RD in ELLs on the K-12 level, especially in the area of the definition, measurement, and instruction of ELLs identified with RD. It also examines the potential for further development and research of assessment and effective instructional programs. Key findings and implications are summarized in the areas of RDs, referral, current assessment, assessments in development, instructional practices, and teacher preparation.

Key words: English learners, second language acquisition, learning disabilities, learning differences, ELL assessment

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This report was prepared for ETS with the purpose of supporting the ETS mission of ensuring that quality and fair assessments and instructional programs are extended to English language learners (ELLs), specifically in identifying and addressing RDs. This project seeks to review and report on research and practices that support the identification of RDs in ELLs, both in the native and target languages.

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Executive Summary

The identification of reading difficulties or disabilities in English language learners (ELLs) has been a topic of recent attention. It is an area that draws on the diverse disciplines of first- and second-language acquisition, literacy, English language learning, and reading, including differences and disabilities research. This review might be of interest to practitioners, developers of assessments, and educational policy makers.

The issue of identifying reading difficulties and disabilities in ELLs is a complex one. We have included literature in our review to address three basic questions:

1. How does one identify reading difficulties/disabilities (RDs) in individuals who are learning the English language?
2. What needs to be done to aid in identifying RDs in ELLs?
3. What does one do with this information to support the English reading instruction of ELLs with RDs?

At the start, we outline some key terms used throughout the document. Not unlike trying to translate terms and concepts from one language to another, key terms found in the literature are not necessarily used identically or consistently even within a discipline, much less across domains. Sometimes inconsistency reflects current debates and controversies over the definition or conceptual content of terms; at other times, it simply reflects authors' idiosyncratic usage. We provide a glossary and try to be consistent in our usage of key terms; however, the reader is forewarned that in describing terms in the context of others' works, some ambiguity is inevitable. That is, others may not define and use the terms in the same way we do.

The sections in this report are designed to build on each other. The first section covers basic terminology and gives an overview of the problem.

The second section presents some of the challenges in distinguishing between what might be normal ELL language development from what might be identified as a disability or difference. Here, we hit on just a few of the key concepts and provide recommendations for further reading.

The third section reviews reading difficulties in various languages and then focuses on reading difficulties when learning a second language. The identification of reading

difficulties/disabilities requires separating the component issues related to reading, defined further in the report, from component issues related to language acquisition in general.

The fourth section provides an overview of the issues surrounding the process of identifying reading difficulties or differences in ELLs. The challenges begin at referral to services and span to measurement of disabilities.[2] This section also reviews information on accommodations provided to support valid and reliable measurement.

The fifth section provides information on interventions and the application of information gained through assessment. It builds on the previous section in that it includes information about the manner in which many students are identified as having difficulties or disabilities—because they are not responding to regular instruction as their peers may be. Research on effective instructional practices when ELLs are identified as having RDs is reviewed.

The sixth section, the conclusion, points to key considerations related to the identification of RDs in ELLs on the K-12 level, especially in the area of the definition, measurement, and instruction of ELLs identified with RDs. It also examines the potential for further development and research of assessment and effective instructional programs. Key findings and implications are summarized in the areas of RDs, referral, current assessment, assessments in development, instructional practices, and teacher preparation.

To ensure that all students receive access to education, including the large number of learners whose native language is not English, the identification of RDs is an issue that must be addressed in K-12 education. This review attempts to describe the literature aimed at addressing the issue and to frame future work in the area. We end with some recommendations for future research.

Introduction

While research on the definition and identification of learning disabilities (LDs) is a robust area of active empirical study, English language learners (ELLs) with LDs tend to be a group within a group that has been neglected. With growing numbers of ELLs in K-12 and adult educational settings, as well as reports of both over- and underrepresentation of ELLs in special education, the need for a robust research agenda on this topic has never been greater or more relevant. Educational professionals urgently need guidance on how to best identify and support the learning needs of ELLs with LDs. This review is intended to serve as a starting point for the development of this guidance, through a research agenda on issues related to the identification of RDs in ELLs.

Review Methods

The following criteria were used to screen and select research that was included in this review:

- Empirical studies published in English over the past 20 years in peer-reviewed journals and selected technical reports
- A focus on oral language development, literacy, and/or academic achievement among ELLs and/or ELLs with LDs in pre-K through 12th grade and adult learner populations
- Outcome measures in English (and other languages) including reading- and writing-related outcomes[3]

The following journals were reviewed: *Annals of Dyslexia, Annual Review of Applied Linguistics, Applied Linguistics, Applied Psycholinguistics, Bilingual Research Journal, Developmental Psychology, Educational Researcher, Harvard Education Review, International Journal of Bilingual Education and Bilingualism, Journal of Adolescent and Adult Reading, Journal of Education of Students Placed at Risk, Journal of Educational Issues, Language Minority Students, Journal of Experimental Psychology, Journal of Educational Psychology, Journal of Learning Disabilities, Journal of Reading Behavior, Language, Language and Education, Language Learning, Learning Disabilities Research and Practice, Scientific Studies of Reading, Studies in Second Language Acquisition, TESOL Quarterly,* and *The Reading*

Teacher. We also consulted books, book chapters, and dissertations that were identified in the course of reviewing other empirical research.

In the end, the report is based on findings from more than 100 original studies, 9 literature reviews or analyses, 17 articles written by experts in the field, and information from 11 books on the topic. Most of the empirical work addresses either LDs or ELLs. To better understand their intersection, we also make reference as necessary to seminal works that may be more than 20 years old, key research or educational debates in the field, and policy and demographic data for background.[4]

Key to Abbreviations

The following key provides some of the principal abbreviations used throughout the review:

BICS	basic interpersonal conversational skills
BL	bilingual learner
CALP	cognitive academic language proficiency
CLDE	culturally and linguistically diverse and exceptional learner (ELL/LD student)
ESL	English as a second language (can refer to classes or learners)
EFL	English as a foreign language learner (for use outside an L2 country)
ELL/EL	English language learner/English learner
IEP	individual education plan/program
L1	native/home language
L2	target language
LD	learning disability
LEP	limited English proficient student
NS	native speaker
OELA	Office of English Language Acquisition
OCR	Office of Civil Rights
PA	phonemic awareness
RD	reading disability
SES	socioeconomic status
SLA	second language acquisition
SPED	special education
SWD	students with disabilities

Glossary of Terms

Accommodation is a support given to individuals with disabilities (learning, physical, etc.) that does not unfairly advantage or disadvantage any one group in contexts such as classrooms, testing, and so forth. An easy way to think about accommodations is to consider a person who needs glasses in order to see clearly. Glasses are an accommodation.

Cross-linguistic transfer and **language transfer** are terms used to describe what happens when an individual who is learning a new language brings aspects of his or her native language or a previously learned language (e.g., semantics, syntax, phonology**)** to his or her new language. The transfer can be positive or negative.

Decoding is a process by which one uses knowledge of letters and sounds to identify words. Decoding is an automatic, unconscious process for skilled readers, but is still utilized in advanced reading, especially with unfamiliar words.

Deficit model with ELLs is a model that regards an individual's native language as a deficit, problem, or nuisance. In such models, it is assumed that the L2 must be learned to some proficiency level before any real thinking in the target language can take place.

Dialects are regional or social varieties of language that contain individual styles of pronunciation, grammar, or vocabulary. Dialects tend to be associated with specific groups.

ESL stands for *English as a second language*. The term may refer to an educational program that provides instruction for immigrants in speaking, understanding, reading, and writing English. It may also refer to learners (as in, ESL learners) and suggests the context in which one is learning English. An ESL student is usually one who is learning English in a country in which English is the official language. In recent usage, the terms *English language learners* (*ELLs*) or *English learners* (*ELs*) have become preferred (see definition below) because they have a more general connotation. A person may speak more than one language; hence, English may not be his or her second language, per se.

English as a foreign language (**EFL**) refers to programs for studying English to use in a country in which English is not the official language.

English language learner (ELL) refers to an individual who is in the process of acquiring English and whose primary language is not English. This term is usually used for a learner on the K-12 level and it is rare to use for an older learner of English, where the terms *ESL* or *EFL learner* usually applies.

(Reading) fluency refers to speed, accuracy, and expression in reading. A fluent reader is skilled at identifying words and reads with appropriate phrasing and intonation. Dysfluent readers are slow and hesitant; they make errors in word identification and pause frequently to sound out words or correct mistakes.

(The) individual education plan is a written plan developed by a child's parents and a school's special education team. It specifies the student's academic goals and the method to obtain them.

Learning disabilities refers to a variety of disorders that affect the acquisition, retention, understanding, organization, or use of verbal and/or nonverbal information.

Limited English proficient (LEP) is the term used mainly by legislators and government agencies to refer to individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English.

Native-like proficiency is the ability to speak, read, write, or understand a language to a degree comparable with native speakers of that language.

Onset is the first consonant(s) sound of a syllable (the onset of the word *book* is b-; of *sweet*, sw-).

Oral language proficiency is one's abilities to communicate orally in a language. This term is most often used to describe an ELL's speaking and listening abilities in a target language and may sometimes be described as low, intermediate, or advanced.

Orthography refers to the spelling system of an alphabetic language.

Phonemes are the smallest meaningful unit of sound in a language. Sometimes referred to as the building blocks of language, they are represented by letters in alphabetic languages and make up the sounds of spoken words.

Phonemic awareness is the ability to detect and manipulate individual phonemes in words. It is a specific type of phonological awareness. A reader with good phonemic awareness knows there are three sounds in the word *book* and can replace the /b/ with /t/ for example to make the word *took*. Phonemic awareness is necessary for development of proficient decoding skills. Once decoding skills are established, phonemic awareness becomes less critical.

Phonological awareness is the broad category that includes phonemic awareness. Phonological awareness is the perception of speech sounds as distinct from their meanings. It

encompasses the ability to detect rhymes, syllables within words, as well as (at its most refined level) individual sounds (i.e., phonemes).

Register is a subset of language used for a particular purpose or in social settings. For example, one might use a more formal register when going for a job interview and a less formal register when talking to friends.

Rime is the part of the syllable that contains the vowel and all that follows. The rime of *book* is *–ook*, and of *sweet* is *–eet*. It is different from *rhyme* because, for example, a rime could be the *-ount* portion of *mountain*. The same rime may exist in the word *count*, though it would not rhyme with *mountain*.

Sight words are words that are recognized very quickly (and automatically) without conscious decoding of letter-sound correspondence. A reader may have originally identified these words by sounding them out but, after many exposures, recognition is quick, without perception of conscious effort.

Sight word instruction refers to some high-frequency words (especially those with irregular spellings that may be impossible or just difficult to decode, such as come, one, of, to, was, etc.) that are taught initially so that they are memorized and recognized on sight (like multiplication facts are memorized). Other important words that follow common spelling patterns may also be taught initially as sight words if they are beyond the learner's current level of decoding ability.

Background of the Problem

The challenge of identifying RDs in ELLs has been a topic of increasing concern due in part to the growing number of ELLs in the United States. Half of the nation's 100 largest cites are home to more Black, Hispanic, Asian American, and other minority groups than White populations (U.S. Census Bureau, 2007). Of the various groups, Hispanics are the fastest growing subgroup. By 2020, demographers predict that one in five children will be Hispanic. The Center for Research on Education, Diversity, and Excellence projects that by 2030, students whose first language is not English will make up 40% of the U.S. K-12 population (National Symposium on Learning Disabilities in English Language Learners [National Symposium], 2003).

Little has been published on the specific characteristics and representation of ELLs with learning disabilities. Attempts to describe this population have been undertaken in projects conducted by two federal agency groups: the Office of English Language Acquisition (OELA)

and the Office of Civil Rights (OCR). The OELA project (Zehler et al., 2003) conducted a survey in 2002 of a nationally representative sample of schools and school districts across the nation reporting the enrollment of at least one ELL student. Topics reported on included curricular alignment, test inclusion, and teacher qualifications. In contrast, the OCR Survey (U.S. Department of Education, 2000) collected information from all of the nation's 95,000 K-12 public schools. Each school completed a 12-question survey on ELL issues, 5 of which were on ELLs/LDs.

The reports from these surveys reveal the inconsistency in the identification, documentation, and use of disability classifications across the country. They show that many districts struggle with identifying ELL students with learning disabilities as a distinct subgroup. Consequently, descriptive estimates of population characteristics show a great deal of variability, reflecting these inconsistent identification policies and practices. According to the surveys, 9% of ELLs have been identified as having learning disabilities, though in the K-12 general population, the percentage of students with disability is closer to 13.5% (Zehler et al., 2003). Though only 9% of ELLs have been identified as having learning disabilities, according to the *Twenty-Fourth Annual Report to Congress on the Implementation of the Individuals With Disabilities Education Act* (U.S. Department of Education, 2002), 17% of the ELL students identified as learning disabled are Hispanic. Apparently, Hispanic students are identified as having learning disabilities more often than other, non-Hispanic students. This disproportionality demonstrates the difficulty in identifying and evaluating learners in this population (Artiles, 2002). The true number of ELLs with LDs remains unclear at this time.

What is clear, however, is that growing numbers of ELLs are being identified as having special needs, regardless of whether those identified are appropriately classified. The identification and classification of students with learning disabilities is a complex, sometimes contested research domain of its own. With ELLs, this determination is further complicated by the need to distinguish whether a learner's difficulties stem from a learning disability or are part of the process of language acquisition.

Identification of Reading Difficulties and Disabilities in English Language Learners

This section is intended to present topics and arguments that frame the discussion regarding the identification of reading difficulties and disabilities in ELLs. We begin by discussing second-language acquisition as a topic, first by briefly reviewing influences that may

affect second-language reading development and then looking at other distinctions drawn on the nature of second-language proficiency that may affect the acquisition of reading, especially for academic purposes (school). If we are to distinguish an RD from normal language and literacy acquisition, it would stand to reason that there would be relative benchmarks of normal expectations of language or literacy development to compare against. However, the issue of what constitutes *normal expectation* is complex and multifaceted, and to date, it is clear that more work must be done in this area. What we set out to do in this section is frame where and how to move forward.

After briefly laying the foundation with some of the discussions regarding features and issues in second-language acquisition, we go on to discuss how challenges and disabilities in reading have been and continue to be defined and how this might extend to the discussion of disabilities among ELLs. This portion of the report is meant to introduce the reader to, and to demonstrate, some of the factors we feel are necessary and important to include when beginning any discussion of this issue and to demonstrate that this is an area in need of attention.

Key Issues Related to "Normal" Second-Language Reading Acquisition

In attempts to define normal trajectories of second-language acquisition in ELLs, there are several important issues to consider. The main message we bring forth here is a need to focus on the holistic view of a child who is learning the English language when assessing reading needs. Issues that affect language development in other skills areas, like speaking, can have an effect on reading. These include key concepts like language interference, or how one's native language might negatively affect a target language (see Durgunoglu, 2002, for example). Other key concepts include individual differences that relate to the topic of language and identity, and multilingualism's affect on language learning (see Flege, Munro, & MacKay, 1995, for example). Key issues in the acquisition of another language include opportunity, aptitude, attitude, and exposure to the target language and skills (see Schumann, 1986, for example). In this section, we review a few of the key concepts as they specifically relate to the acquisition of normal reading in ELLs and what research has begun to demonstrate.

Cross-Linguistic Transfer

One important issue influencing the normal acquisition of the English language is that an ELL's L1 may positively or negatively transfer to English (L2). When cross-linguistic transfer is

negative, it is sometimes referred to in the literature as *cross-linguistic interference*. This happens when an individual uses their L1 to make decisions about an L2, leading to an error due to the direct influence of an L1 structure. Durgunoglu (2002) suggested that using information from cross-linguistic transfer can support assessment and distinguish students who are in the process of normal language development in an L2 from those who may have learning disabilities. She warned that students with low levels of metacognitive/metalinguistic awareness in their home language may need more observation. They may have low home or school support in the L1 or possibly a cognitive/developmental challenge that may affect both L1 and L2 development. Therefore, she argued, the study of cross-linguistic transfer must be well-specified and contextualized.

It is necessary to consider cross-linguistic interference of normal language acquisition when assessing whether an ELL is normally developing. One must be able to rule out interference before determining a disability or challenge in second-language acquisition. Specific issues in this regard will be detailed in the third section in this report.

Distinctions in Language Proficiency

The question, How long does it take to learn a second language (L2)? is also a basic one in language acquisition research. A moment's reflection leads to the corollary question, perhaps one that needs to be answered first: By what criteria would we say that an individual has learned a second language? This is a necessary question as we begin our discussion of reading in ELLs.

To aid the field in answering these questions, Cummins (1979) is frequently credited as bringing great attention to the distinction between two types of language and two types of second-language proficiency. One way language learners can be considered proficient is if they can demonstrate basic interpersonal communication skills (BICS). Such proficiency encompasses the language used for conversational fluency. Another way learners can demonstrate their skill is with respect to cognitive academic language proficiency (CALP). CALP is required to function effectively in academic contexts.

Cummins based his BICS/CALP dichotomy on previous work by other linguists and researchers (e.g., Bruner, 1975; Olson, 1977). Cummins (1981a) also conducted studies to show that some English language learning students appeared to have mixed profiles related to what he called their conversational versus academic language skills, indicating perhaps that these two are distinct. The works of Biber (1986) and Corson (1995) provided some further evidence of the linguistic reality of the distinction. Corson (1995), a linguist whose work centers on issues

related to language and power, investigated the wide range of lexical differences between daily conversational interactions in English as compared to the language used in academic- or literacy-related contexts. Biber (1986) analyzed more than one million words of English speech and written text and documented underlying patterns that support a distinction between conversational and academic dimensions of language proficiency. These studies lend support to the concepts of a BICS versus CALP distinction and form the foundation for further discussion in this area.

These language types may be considered different competencies and may have different rates of acquisition. Some empirical studies have shown, for example, that immigrant students may be able to more quickly acquire conversational fluency in an L2 when they are exposed to it in their daily environment and study language at school. Despite the rapid development of conversational fluency, with some research indicating that this comes within 1 to 2 years, other studies indicate it might take longer, possibly 5 to 7 years, for ELLs to catch up with native speakers with respect to academic uses of language (Collier, 1987; Cummins, 1979, 1981a; Klesmer, 1994; Thomas & Collier, 2003).

However, these studies are descriptive in nature, albeit some are longitudinal (e.g., Thomas & Collier, 2003). Instructional approaches to learning language vary greatly, as do individual differences in learner populations. Though the BICS versus CALP distinction has clearly influenced the field by providing a framework for describing language as well as a rough estimate of the duration and intensity of English language instruction required for academic work, there is debate concerning both the theoretical distinction of BICS versus CALP and the evidentiary foundations.

Some argue that CALP may simply reflect ability to take academic tests and does not necessarily indicate an ability to navigate the complexities of the academic environment (Edelsky, 1990). Critics question whether the tests used to measure CALP possess sufficient ecological and predictive validity; that is, whether scores from the tests are valid as predictors of how well a student will do in an academic context (Barrera, 1995; Jitendra & Rohena-Diaz, 1996; Klingner & Harry, 2006). Critics also argue that the notion of CALP promotes a *deficit theory* insofar as it attributes the academic failure of bilingual/minority students to low cognitive/academic language proficiency rather than to inappropriate schooling (Edelsky, 1990; Edelsky et al., 1983). More recent discussion of the research (e.g., Calderón & Minaya-Rowe,

2007; Echevarria, Vogt, & Short, 2004) has further indicated that the rate of acquisition of academic language might be more dependent on appropriately delivered, developed, and differentiated instructional support than time.

Thus, the BICS/CALP distinction and the estimated timelines of acquisition remain tentative conclusions consistent with existing evidence, rather than rigorously supported, definitive scientific findings. There is insufficient empirical data as of yet to support or refute the current claims. It is important to at least be aware of the arguments, however, when considering disability or difference in reading acquisition across various domains.

Individual Differences—Age

There is a common belief that after a certain age, it becomes very difficult to learn a second language. This is also a necessary concept to understand when assessing ELLs' reading at various stages of development and maturity. The issue of *age of arrival* of an ELL, for example, becomes a very important one in the discussion of how, and how well, an ELL might acquire English language proficiency. While there are perhaps different challenges one might face when attempting to learn a language at various ages, what does the research say in this regard?

A longstanding concern of language-acquisition research has been centered on determining whether there exists a *critical period*, defined as the period after which an individual can no longer develop another language with native-like proficiency; that is, when an individual can no longer develop language proficiency in an L2 that is indistinguishable from that of a native speaker (Hakuta, Bialystok, & Wiley, 2001). This is important in our discussion here because if we are attempting to distinguish normal language development from possible disabilities, we need to know about differences that might be age dependent and whether, for example, a younger learner might just demonstrate a different language profile than an older learner.

Some empirical research suggests that "[a]ge of immersion in the L2 and degree of L2 mastery are negatively correlated," (Birdsong & Flege, 2001, p. 125), while other research appears to indicate that there may be a critical period for the acquisition of pronunciation in a second language, perhaps production and perception of sounds, but not in other language-skill areas.

Researchers in the field of language acquisition and linguistics debate this intriguing area of language research and its implications (see Bialystok & Hakuta, 1999; Birdsong, 1999; Bongaerts, Mennen, & van der Slik, 2000; Flege, Frieda, & Nozawa, 1997; Flege, Munro, & MacKay, 1995). Research on critical periods continues to provide insights into potential

limitations or challenges that might exist in language acquisition over time, but not necessarily their true causes. The wide variety of findings indicate that the critical period is perhaps best framed as a guiding lens we might use when attempting to determine the causes of challenges for ELLs of a variety of ages and language groups.

Learning and Reading Disabilities

We've highlighted some issues to consider when assessing RDs in ELLs, and we have indicated that there are many other external factors that contribute to the rate and development of a second language generally and reading specifically. Complicating the discussion further, the field of LDs and RDs is continuously in a state of defining itself, debating, and redefining itself. Formed as much out of advocacy by stakeholders seeking to secure services and rights for individuals with disabilities as by researchers or policy makers, the field continues to struggle to maintain a balance between constructing sound social policy and applying rigorous scientific evidence (see Lyon, Shaywitz, & Shaywitz, 2003; Rothstein, 1998; Vogel, 1998).

Reading disabilities. It is beyond the scope of this report to review the entire literature on disabilities definitions and research; however, some foundational points will help guide what follows and serves as the next questions we attempt to address: What exactly is a learning disability? and then, What is an RD? These descriptions will then serve as the foundation for an outline of what an RD might look like in an ELL.

Specific LDs are intended to be a subcategory of all disabilities, which include, among others, autism, deafness, blindness, emotional disturbance, hearing impairments, language impairments, mental retardation, and visual impairments. Of course, any of these conditions are likely to lead to difficulties in learning.

The 1988 LD definition by the National Joint Committee on Learning Disabilities (Hammill, 1990) provides more details regarding a view of an LD as a discrepant and exclusionary disorder from normal expectations of learning and achievement. It states:

> Learning disabilities is a general term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities. These disorders are intrinsic to the individual, presumed to be due to central nervous system dysfunction, and may occur across the life span. Problems with self-regulatory behaviors, social perception, and

> social interaction may exist with learning disabilities but do not by themselves constitute a learning disability. Although learning disabilities may occur concomitantly with other handicapping conditions (for example, sensory impairment, mental retardation, serious emotional disturbance) or with extrinsic influences (such as cultural differences, insufficient or inappropriate instruction), they are not a result of those conditions or influences. (p. 77)

This definition has led to identification techniques founded in discrepancies between aptitude and achievement, under the side conditions that no other likely, comorbid causes are known. Thus, individuals with other disability conditions or cultural differences or who were from inadequate schools were often excluded from being identified as learning disabled because measurement techniques for distinguishing an intrinsic disorder from extrinsic influences were not easy to establish.

More recent definitions and policies seek to improve on this shortcoming. As stated in the most recent version of the Individuals With Disabilities in Education Act (IDEA), the phrase *child with a learning disability* means:

> A child with a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. (Individuals With Disabilities in Education Act [IDEA], 2004)

The new definition is an attempt to reduce the reliance on discrepancy and exclusionary identification methods in favor of a more criterion-based emphasis on failure to achieve, yet still maintaining the core assumption of an underlying, intrinsic psychological processing disorder. The new policy has continued to de-emphasize the use of the IQ-achievement discrepancy measure as a sole or primary criterion for identifying an individual as having LDs, a practice that empirical data has called into question (e.g., Stanovich & Siegel, 1994.)

The specific learning disabilities (SLD) classification remains the largest category of disabilities across the nation, and it has been estimated that about 80% of students with learning disabilities also show reading difficulties as a core symptom (President's Commission on

Excellence in Special Education, 2002). That is, whether the more general learning disability is identified as a core component of reading difficulty (e.g., dyslexia) or some other psychological process, the result is a student with low reading achievement. Given the prevalence of learning disabilities that affect reading achievement and the fact that a great deal of research on acquisition and disability in reading and some regarding reading in ELLs has been conducted, our primary focus throughout this report will be on RDs in ELLs. It is important to note that language impairments are considered a distinct disorder, even though language disorders are likely causal to many specific learning disability symptoms (see Catts, Fey, Tomblin, & Zhang, 2002; Catts, Hogan, & Fey, 2003). With the exception of language impairments, which have a large overlap with RDs, we do not attempt to cover issues such that they generalize to other specific disability groups (e.g., blind, deaf, autistic, attention deficit). Thus, if we cite evidence concerning the role of phonemic awareness in reading acquisition, the reader should assume that these results may not generalize to individuals who are hearing impaired or blind, unless we otherwise cite specific studies conducted with these populations.[5]

Following the *simple view* conception of reading (Hoover & Tunmer, 1993), Fowler and Scarborough (1999) outlined key component deficits that commonly characterize RDs. These may include:

1. deficits in speed and/or accuracy of word recognition
2. deficits in language comprehension
3. oral-language difficulties in perception, retention, retrieval, analysis, and production of spoken words[6]

When individuals are not successful in attaining component proficiency even after receiving appropriate instruction targeting these skills, it is evidence of RDs. It is important to also point out that much of the research defining and addressing RDs has been done with children or high-achieving adult dyslexics (typically with college-level education). The focus on other populations, for example, noncollege-educated adults with RDs, has been relatively recent (e.g., Sabatini, 2002, 2003; Vogel, 1998), though the empirical base for including various additional populations is growing.

Learning disabilities in English language learners. Finally, this section concludes by beginning to frame and describe the issue of defining and identifying RDs in ELLs. Even among

native speakers, there is great deal of variation in the practice of identifying RDs. For ELLs, differing orthographic, cultural, social, and linguistic systems of their native languages further complicate the process of identifying RDs in acquiring English reading proficiency (Fowler & Scarborough, 1999; Hammill & Bryant, 1998; Shaywitz et al., 1990). The following sections of this report focus on what we know about this issue and some of the issues requiring further investigation. We finish this first section of the report by simply introducing this as the focal point of the work reviewed.

Regardless of language or country of origin, across varied cultural, social, and linguistic contexts, there are those individuals who experience difficulties learning to read when exposed to the regular literacy curriculum and those who are resistant to specific instructional interventions beyond the regular curriculum (Fowler & Scarborough, 1999; Taylor & Olson, 1995). Biobehavioral and genetic studies, along with behavioral research, converge in providing evidence for the reality of individual differences in psychological processes that may impede the normally expected acquisition of proficient reading in response to exposure to typical instruction (see Olson, 2006; Sandak, Mencl, Frost, & Pugh, 2004).

During the National Symposium of Learning Disabilities in English Language Learners (2003), researchers reported that for successful readers, the neurobiological images and neurodevelopmental trajectories are likely to be similar between ELLs and monolingual individuals. For example, Pugh and colleagues (see National Symposium of Learning Disabilities in English Language Learners) showed promising results for identifying differences in response to initial reading instruction in patterns of brain activation (based on fMRI, or functional MRI techniques[7]) of ELL and monolingual struggling readers. These differences suggest the eventuality of early identification methods of LDs and early intervention for ELLs identified as having RDs. Though promising, there are many details still to investigate. There is much we do know, however, and we hope to outline both the findings and the potential as we move forward with this issue.

Examining Reading Development in the Native and Target Languages of English Language Learners (ELLs)

Learning about difficulties that may present themselves in an individual's first language is the first step in any holistic and thorough investigation of learning differences. However, as stated in the previous section, a learning difference or disability may not manifest itself fully in a

learner's home or native language. For this and other reasons, it is necessary to look at an individual's acquisition of a second language across various components that make up reading, including phonological awareness, phonemic awareness, decoding, oral vocabulary, and comprehension. Research on reading in a target language, as well as in the native language, has progressed tremendously over the past 25 years. Several themes have emerged from this research that can be used to begin to build a model that can help identify LDs among ELLs.[8] In this section, we review the research regarding native- and target-language reading skills and discuss how this relates to ELLs' reading in English.

Phonological Awareness

Phonological awareness, which is a broad category that includes phonemic awareness, is defined as the perception of speech sounds as distinct from their meanings. It is perhaps one of the most elemental components of reading across languages, and it allows us to gain insight into reading acquisition in both L1 and L2. Phonological awareness has been found to be a significant predictor of word recognition and spelling within and across languages (Durgunoglu, 2002). Phonemic awareness has been found to be predictive, even in some languages that are very different from each other, like Hebrew and English (Geva & Wang, 2001; Geva, Yaghoub-Zadeh, & Schuster, 2000; Verhoeven, 2007). Though this is true, there is at least one important difference based on the native languages. In languages with less consistent orthographies, children who have a problem with syllables, onset, and rime levels (skills that make up phonological awareness) prior to their acquisition of literacy will have problems learning to read (Perfetti, Beck, Bell, & Hughes, 1987). Children learning languages with more consistent orthographies—or languages like Chinese, which are defined as morpho-syllabic[9]—can compensate for their difficulties, and learning to read is facilitated (Durgunoglu & Oney, 1999; Wimmer, Mayringer, & Landerl, 1994).[10]

The message here is that, as stated in the introduction to this section, a reading difference or disability that one might have in English might not be as evident through information in a native language. However, measures of phonological awareness in both native and target languages can be used to create a holistic view of English reading differences or disabilities in ELLs (Chiappe, Siegel, & Wade-Wooley, 2002; Gersten & Baker, 2000). Phonological awareness tasks in both native and target languages are strong candidates as predictors of the development of word recognition skills in ELLs who are developing concurrently their oral and written skills in a

language other than their home language and, therefore, are a productive place to start when creating a reading profile for an ELL in order to determine any possible reading challenges.

Orthographies

Another important finding in L1 and L2 reading research across languages can be seen in work done with varied orthographies. Research has been conducted, for example, with individuals learning English whose native languages have varied orthographic features. Across studies, investigators have found that there was a general advantage given to students who learn to read in two alphabetic languages or in target languages with consistent grapheme-phoneme correspondences (Akamatsu, 2003; Bialystok, Luk, & Kwan, 2005; D'Anguilli, Siegel, & Serra, 2001; Geva, 1992; Geva & Clifton, 1994). That is, those individuals who come from nonalphabetic languages were less efficient in processing English words than those with an alphabetic L1 background. This effect was found not only in word reading (Akamatsu, 2003) but also in text reading across a variety of languages (Koda, 1990). This has important implications for identifying reading difficulties among ELLs, as this might confuse the language acquisition versus reading difficulty issue. The bottom line here is that if a student comes from a nonalphabetic language, difficulties that present themselves in the form of recognizing and processing English words might simply be normal parts of language acquisition.

Decoding

In research done on decoding, investigations have indicated that there is a strong correlation between decoding in an L1 and an L2 (Durgunoglu, 2002; Geva & Wang, 2001; Leong & Cheng, 2003). Geva and Ryan (1993) found that word attack skills in L1 (English) and L2 (Hebrew) were highly correlated: In this study, the researchers found children's accuracy and the types of errors they made were orthography-specific. [11] Other findings across languages is that individuals with poor phonological-processing skills tend to be the poor readers (Geva et al., 2000), and this poor level of reading may manifest itself as errors in decoding and word recognition in languages with inconsistent spelling-to-sound correspondence, like English, or simply slower but accurate word reading in transparent languages, like Spanish (Wimmer et al., 2000).

Oral Vocabulary and Oral Proficiency

An individual's ability to understand oral language is also an important aspect of reading and might be seen as a valuable indicator of reading proficiency.[12] Carlisle, Beeman, Davis, and Spharm (1999) , for instance, examined children who were learning two languages simultaneously, yet had poor command of both. Using tests of receptive vocabulary and phoneme deletion, the researchers found that there was a significant effect of oral vocabulary[13] in both languages on English reading comprehension. Cisero and Royer (1995) and Durgunoglu (2002) reported that for language learners, lower linguistic proficiency, especially in vocabulary knowledge, may slow the development of phonological awareness. Other studies have also supported the conclusion that vocabulary mastery in a native language helps predict reading comprehension in the target language of English (Bialystok, 2002; Carlisle et al., 1999). This has led researchers and practitioners to examine the possible use of oral vocabulary in a learner's L1 and L2 to see if this can facilitate the determination of RDs. Gottardo (2002) has supported the conclusion that oral vocabulary in L1 and/or L2 helps account for variance in RDs.[14]

Comprehension

Other researchers have further explored reading acquisition specifically in bilingual learners. One major finding across languages has been that literacy skills transfer from one language to another. It is well-documented that English second-language oral proficiency, native-language reading, and English second-language reading appear to be positively related (Fitzgerald, 1993; Geva & Ryan, 1993; Gottardo, 2002; Lindsey, Manis, & Bailey, 2003; Tregar & Wong, 1981). That is, the oral and reading language skills one has in an L1 can transfer to and aid in reading in an L2. Reading achievement was explored here through reading-comprehension outcomes. Some researchers go further to say that across the investigations in various languages, including Chinese, French, Hebrew, Italian, Persian, Spanish, and Turkish, good readers (comprehenders) in one language tend to be good readers in another (Durgunoglu & Oney, 1999; Geva & Clifton, 1994). Though information regarding one's native-language proficiency might be suggestive of difficulties that might occur in a target language, again, it is not completely predictive.

For one, this generalization is moderated by grade level. For instance, Tregar and Wong (1981) found that the best predictor of English reading in grades 3 through 5 was native-language reading ability, but in grades 6 through 8, it was oral English proficiency. This may be due to the

greater demand on academic language, or CALP, in higher grades (see Calderón & Minaya-Rowe, 2007; Cummins, 1981b). Similarly, Geva and Ryan (1993) found, in their work with Hebrew-English bilingual students, that higher cognitive processes were involved in written and oral communication in academic settings in grades 5 through 7 than were involved in earlier grades.

One question that remains is whether these underlying processes of reading development become more domain-specific and less generalized as language proficiency increases. This is important because information gathered on the effects of language proficiency across age levels and among various language backgrounds is necessary in any work done in measurement or remediation.

Conclusions

This research has led to several important conclusions and additional questions. First, there appear to be some cross-language generalizations that can be helpful in the identification of RDs across languages. Good readers in a home language tend to be good readers in a target language. This is helpful but not entirely conclusive. Other components of reading in an L1 and an L2, like phonological awareness, orthography in the L1, oral vocabulary, and decoding, aid in capturing the challenges presented to ELLs that might lead to identifying reading difficulty and might further inform instruction. However, not all challenges that might appear in a target language are even present in a native language. Therefore, the ability to read in L1 is suggestive but not definitive of RDs in English L2 reading acquisition. What might be the most useful conclusion is that a high level of phonemic awareness of English phonemes is predictive and causal to reading in English. This one piece of knowledge can help in identifying RDs, but it is clearly not enough to inform decisions or instructional intervention.

Some of the empirical findings suggested thus far can help researchers, practitioners, and policy makers construct better definitions of what a reading-based LD might look like across ages and languages. They also allow educators to learn from the L1 what might be an issue or advantage for ELLs in an L2. But clearly, more work is needed.

Issues in Identification and Assessment

This section reviews information regarding referral, measurement tools, assessments, and accommodations used with ELLs with LDs. This section also reviews research conducted in the context of schools and the classroom.

Referral Processes

One theme throughout the literature on ELLs with LDs has been the variation in referral procedures across different populations. OELA and OCR have collected data on referral practices across various school contexts. In addition, researchers have conducted field interviews with practitioners on the realities of what is successful with ELL/LD students (see Klingner & Harry, 2006).

A typical special education (SPED) referral process begins with a teacher who is concerned over lack of academic progress and/or appropriate behavior and initiates a referral. Usually this leads to a school-level pre-referral meeting with other general education teachers, a special education teacher, administrators, a parent or caregiver, and sometimes a counselor or social worker. At this meeting, suggestions are made to assist the teacher in helping the student succeed in the classroom. In severe cases, the student may immediately be referred to special education. The student is then monitored and another pre-referral meeting is held, at which time a decision is made to refer the student for formal evaluation. The results of that evaluation are reported, and a placement conference is held where a decision is made as to whether the student qualifies for special education services.

The referral process for ELLs is more complex (Harris, 2004). Generally, an IEP (individual education plan) committee becomes involved and reviews a case before it's brought to a pre-referral meeting. Also, a bilingual assessor usually evaluates the student to determine if he or she should be assessed bilingually or only in English (Klingner & Harry, 2006).

Klingner and Harry (2006) looked at issues related to referral in schools in large school districts in the United States. Their work was a 3-year longitudinal study on the possible overrepresentation of ELLs in special education in 12 schools. They found that many referral teams used language proficiency as the sole determinant of referral. Klingner and Harry found that in a small number of situations, if an individual did not have oral language proficiency in English, the team tended *not* to refer the student to receive special education support services. However, in other locations, program teams stated that if ELLs were not learning English at the rate of their classmates, they would refer these students to special education services. These teams were often not given guidelines or information about rates of language acquisition across languages. As noted in earlier sections, ELLs may appear proficient or nonproficient in a

language depending on whether the criteria set are BICS as opposed to CALP (Cummins, 1981b; Tregar & Wong, 1981).

Zehler et al.'s (2003) work, based on data collected from states across the United States, supported this finding and further explained inconsistency across states. A general trend found in their analyses was that students were first identified as limited English proficient (LEP) before they were identified as in need of special education services. However, this finding was also state-dependent and was not uniform across states. In both Klingner's (2004) and Zehler et al.'s reports, a lack of parental involvement and an overreliance on the opinions of members of a referral team were found to be the key characteristics that led to the determination and identification of LDs in ELLs.

The fact that there is lack of clarity in the referral of ELLs to LD services is important. The previous section outlines individual and cognitive factors that might lead to more consistent identification of LDs in ELLs; however, the practices in the states reveal that more work is needed on the social and organizational factors that might lead to appropriate referrals. Inconsistent referral practices inevitably lead to over- and underrepresentation, delayed intervention services, or special services provided for individuals who do not need them (Barrera, 1995; Hosp & Reschly, 2003; Limbos & Geva, 2001).

Measures and Assessments

Any individual who is performing well below their age-appropriate mean in achievement may be assessed and identified as having a learning disability. Here we are again focused on reading-based disabilities. However, low reading performance (say, below basic on a state exam or below the 10^{th} percentile on a published, normative comprehension test) does not automatically mean a classification as possessing a specific learning disability. One needs to identify a disorder of one or more of the basic psychological processes involved, and IDEA legislation defines a specific learning disability and related disorders as follows:

> (30) SPECIFIC LEARNING DISABILITY –
>
> (A) IN GENERAL – The term "specific learning disability" means a disorder in 1 or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in the imperfect

> ability to listen, think, speak, read, write, spell, or do mathematical calculations.
>
> (B) DISORDERS INCLUDED – Such term includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia.
>
> (C) DISORDERS NOT INCLUDED – Such term does not include a learning problem that is primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage. (IDEA, 2004)

Psychological tests such as the *Woodcock Johnson* (Woodcock, McGrew, & Mather, 2001) probe the candidate psychological processes that may manifest as a reading disorder. As we have reviewed, there is empirical literature linking weaknesses in phonological processes to impediment of decoding and word-recognition development, thereby resulting in reading disorders. While language impairments are a separate category from specific learning disabilities, often disabled readers have comorbid language impairments (Catts et al., 2002). Research on other specific component processes and how they manifest in poor reading is an ongoing area of research. However, subtypes of slow reading rates or poor comprehension levels despite adequate basic decoding skills are other candidate profiles of disabled readers (Leach, Scarborough, & Rescorla, 2003).

Of course, an ELL's language proficiency might influence his or her ability to perform on an assessment, especially if the response format requires oral production, as is the case in most decoding, word identification, and oral fluency tasks. Therefore, for ELLs, a native-language test of ability may be administered first, and then, if appropriate, L2 diagnostic measures in L2. For example, the *WJIII Word Identification, Word Attack, Picture Vocabulary* (Woodcock et al., 2001); the *Dynamic Indicators of Basic Early Literacy Skills* (Good & Kaminski, 2002); and the *Test of Word Reading Efficiency* (Torgesen, Wagner, & Rashotte, 1999) all require oral responses. In research conducted with native speakers of Chinese, Korean, and Spanish on reading comprehension on the Test of English as a Foreign Language™ (TOEFL®) English reading test at a secondary level (ETS, 2000), there were language-group interactions (different rank orders of individuals) on naming versus choice-response tasks in real-word and decoding

tasks, as well as in the strength of correlations to reading performance on TOEFL reading (Sawaki & Sabatini, 2007). That is, the type of task response interacted with the performance levels and interpretations. Though the study looked at fairly well-educated adult ELLs, work like this suggests that existing English instruments that rely on these task attributes (e.g., naming) may not be valid as identification assessments when used with non-native speakers who have advanced L1 reading and language skills. This research needs to be replicated with younger non-native speakers to assess the generalizeability of the finding. However, absent sound measures of L1 language and reading skills, schools and districts would not be able to identify any influence an L1 skill may have in interpreting L2 development or disability.

Clearly, employing multiple measurements as a means of identifying learners and assessing any progress or future needs would be recommended in order to develop a profile of an individual ELL's challenges (Lopez-Reyna & Bay, 1997).[15] However, though this goal seems fairly clear, research is lacking on how to use any of these assessments in ways congruent with the findings about LDs in ELLs to determine LDs in learners in schools. Research—or the lack of research—on these instruments has raised some concerns about common practices (Abedi. 2007; Abedi, Hofstetter, & Lord, 2004; MacSwan & Rolstad, 2006; Rueda & Garcia, 1997).

Practitioners and researchers have, therefore, been working toward a common goal of identifying sound measurement tools for this population of learners. One promising battery being developed for use with ELLs, especially Spanish speakers, is the DARC, the *Diagnostic Assessment of Reading Comprehension* (Center for Applied Linguistics & the University of Houston, 2002). The DARC is an experimental instrument designed to disentangle decoding skills, language-proficiency skills, and vocabulary skills from other skills that underlie comprehension (i.e., working memory and inferences). August et al. (2006) administered the DARC to 28 fourth-grade students who had scored in the lowest third of 168 Spanish-speaking ELL students on the *Woodcock Language Proficiency Battery – Revised* (WLPB-R) reading-comprehension subtest (Woodcock, 1991). They found that of these 28 students, some of the ELLs had performed poorly on the standardized test but did well on the DARC. Also, some of the 28 students who performed better on the WLPB-R reading-comprehension subtest scored near chance levels on the DARC, meaning their scores could have just been by chance; thus, the results are not due to DARC simply being easier than the WLPB-R subset. This finding confirmed that a component-oriented assessment battery was valuable for explaining

performance on standardized assessments of reading comprehension. It also revealed the value of a comprehension assessment that is decodable by ELLs and for which they do not need extensive vocabulary knowledge and background information (August et al., 2006).

Validity of Scores From Instruments

Several investigations have been conducted on measures used to identify RDs in native speakers to test their viability with young non-native English speakers in ESL, bilingual, and regular classroom settings (Chiappe, Siegel, & Gottardo, 2002; DaFontoura & Siegel, 1995; D'Angiulli et al., 2001). Working with children from different backgrounds, researchers have used common measures in English to examine phonological and language-processing skills, including the *Woodcock-Johnson III* (Woodcock et al., 2001) and measures of phonological, syntactical, and memory processes based on English skills. The studies of these learners, who ranged in grades from kindergarten to sixth (age 13), found that these measures were valid and reliable for the purpose of making inferences regarding strengths and weaknesses in English language proficiency. Although children in bilingual and ESL programs might not have fared as well as their native-speaking peers, they did appear to have similar language development. That is, alphabetic knowledge and phonological processing were key contributors to reading acquisition. Reviews of these studies also reveals that exposure to languages with more-predictable orthographies, like Italian, may enhance phonological skills in English.

MacSwan and Rolstad (2006), however, found that there were some students identified as having RDs in both their L1 and L2 through the use of the *Peabody Picture Vocabulary Test* (Dunn & Dunn, 1997, 2007) and the *Language Assessment Scales* (De Avila & Duncan, 1990a, 1990b) employed by a particular school district. Upon further investigation, through the collection and the analysis of natural language samples, these young learners were found to have morphological and syntactical skills within the normal range in their L1. This had not been identified through test scores. MacSwan and Rolstad's (2006) work calls into question the validity of the scores on the original measures in making inferences about these children's disabilities in their native languages.

One procedure that is especially promising is the use of nonword repetition tests for younger ELLs. Such tests are quick and easy to administer and can predict vocabulary learning in first and second languages. When adapted for use with students of a variety of different L1s,

this area of measurement might aid in the identification of some disabilities (National Symposium, 2003, p. 23).

Other concerns raised on this topic include ones regarding the language, dialect, and register of the tests; social and cultural aspects of the language and testing context; and the classroom ecology surrounding the testing environment for ELLs with LDs. However, though reasonable concerns, no research was found in peer-reviewed journals that addressed these issues in ELLs with LDs. This area would be one worth pursuing in future studies of the development of culturally and linguistically appropriate assessment tools.

Accommodations

The use of accommodations initially arose from a need to accommodate students with physical disabilities. This was then followed by the use of accommodations with students with learning disabilities. Students with special needs are routinely given accommodations during assessments to help present a more valid picture of what they know and can do (Abedi, Kim-Boscardin, & Larson, 2000; Thurlow & Bolt, 2001). Accommodations are also provided for English language learning students due to greater demands for accountability across all learner populations.

Thurlow and Bolt (2001) compiled a list of the most commonly used accommodations in 48 states. Accommodations for students with disabilities, in order of prevalence, were translation of instruction (40 states), extended time (37 states), computerized assessment (34 states), test items read aloud (34 states), Braille (33 states), allowance for marking an answer in the test booklet (33 states), test breaks (33 states), dictation of responses to a scribe (32 states), and read or simplified test directions (31 states). For English language learning students, the most common accommodations in order of prevalence were extended time (42 states), use of an English dictionary (33 states), use of a glossary (26 states), use of a bilingual dictionary (22 states), and linguistically simplified test items (12 states).

Abedi (2007), Abedi et al. (2004), and Castellon-Wellington (2000) studied accommodations in testing ELLs—both those identified and those not identified as having disabilities. The use of accommodations across a variety of contexts was reviewed. Abedi (2006) examined assessment accommodations for ELLs in large-scale, standardized tests. All of the authors discussed the issues of special education eligibility for ELLs, pointing out that there are issues concerning the ecological validity[16] of the tests and the predictive validity of the scores

from these tests in academic contexts. They did not outline specific research that could be used to substantiate the assessments' lack of validity, which may be a future area of research.

Abedi (2006) also looked at issues and problems in identifying students with learning disabilities in general, as well as issues related to language proficiency in ELLs. In particular, the author cautioned that scores on the standardized achievement tests may not provide a reliable and valid assessment of English language learning students, stressing that reliable and valid measures are still needed to distinguish between learning disability and low level of English proficiency. Abedi (2006) found that linguistically modified versions of a test and customized dictionaries appear promising for some situations. However, commercial dictionaries were not recommended, and read-aloud support should be employed with caution. Additionally, Rivera and Collum (2006) suggested native-language assessment, repetition, extra time, test adjustments, and linguistic simplification as promising forms of accommodation for ELLs.

Castellon-Wellington (2000) also investigated the influence of students' preferences for accommodations on their scores, finding that there was no significant relationship between student outcome and their use of a preferred accommodation. Both studies cautioned against a one-size-fits-all approach to accommodations and concluded that more validity research needs to be conducted on existing instruments.

Summary and Conclusions: Limitations of Prior Work

There are several issues to point out regarding the work cited in this section. First, ELLs with LDs may not be properly identified as having an LD, as their disability may be hidden by their limited English proficiency, or vice-versa. Zehler et al.'s (2003) review demonstrated that there exists both an over- and underrepresentation of ELLs in special education, depending on the state and local context. That is, in some states teachers may not refer students for special services for fear that the challenges these students face are simply issues related to language acquisition. In other states, students might be overidentified, particularly when teachers do not know what to do with ELLs who do not seem to be progressing at the rate of their peers (National Symposium, 2003). Referral processes for the purposes of identifying RD needs, ELLs' needs, or a combination of the two is a primary issue in need of further empirical study.

Second, though there are several widely used, standardized measures, few have been rigorously and thoroughly studied for their validity or reliability with children who are ELLs. The same can be said for assessments in languages other than English; few exist and those that

do exist have been inconsistently used or have been evaluated without attention to the validity and reliability of the resulting scores.

Another limitation we found is that work conducted by those with expertise in one area (language education, teacher preparation, bilingual instruction) rarely makes sense of the expertise from other disciplines, especially linguistics, reading research, and cognitive psychology. In the National Symposium, McKoon (2003) concluded:

> Current research from these fields indicates that most, if not all, of the language assessment instruments currently available are, at best, only weakly valid indicators of language skills and abilities, even when they were developed for and used to test English monolingual children. (p. 12)

This statement underscores the need for developing valid and reliable tools that account for language skills and abilities in a variety of contexts and populations.

In the research on accommodations, researchers did look carefully at what were current practices in the field and examined these practices for their appropriateness. However, there was very little unambiguous research demonstrating the validity of specific accommodations, leaving open the possibility that distinct accommodations that take into account language, register, or dialect may better support valid assessment of ELLs with RDs.

In conclusion, it is clear that research on the validity of measurement tools and accommodations used for ELLs with LDs is needed. Simply combining the list of accommodations for ELLs with that of students receiving special education services is not a substitute for establishing a specific empirical research base supporting the choice of accommodations. Culturally and linguistically diverse learners with exceptionalities (CLDE) are ELLs who have been identified as having special needs; they may be gifted or have learning disabilities. Research on CLDE assessments and accommodations that address the intersection of their language-acquisition level and type of RDs is needed.

Interventions Research

Many students are initially identified as having reading difficulties or disabilities because they are not responding to regular instruction in the same manner as their peers do. This section briefly reviews some of the initial research on instructional practices, approaches, and methods used with ELLs who may have been identified as having RDs. A few fairly recent reviews and reports on reading

instruction for ELLs have cited there is little rigorous research to review with respect to interventions specifically targeted at ELLs with possible RDs (August & Siegel, 2006; Slavin & Cheung, 2003). Researchers have only recently begun to report on longitudinal work on English reading development among groups of ELLs (Lindsey et al., 2003), and this is not specifically addressed at uncovering effectiveness regarding what works.

Reading Strategies

Gersten, Baker, and Haager (2003) conducted a 2-year observational study in 34 first-grade classrooms in which they found that oral language strategies, including reading strategies, helped in L2 reading acquisition (see Chamot & El-Dinary, 1999). They found that high-quality vocabulary instruction led to improvements in reading comprehension in first-grade ELLs. Vocabulary instruction was considered of high quality when lessons integrated vocabulary development with content-based lessons, had students explicitly define new words and use the words in sentences, and then asked the students to answer analytical questions using the new vocabulary words. High-quality vocabulary instruction also focused on rich and evocative words and words essential for understanding a passage or story (see Beck, McKeown, & Kucan, 2002; Beck, Perfetti, & McKeown, 1982).

Direct Instruction (DI)

Direct instruction (DI) has received much attention due to its effectiveness with native speakers (National Reading Panel, 2000). Research conducted on direct, systematic phonics instruction with native speakers has shown that this type of instruction helps students gain the phonological awareness skills necessary for reading acquisition (Ehri, Nunes, Stahl, &Willows, 2001). These instructional programs tend to use reading materials with a phonetically controlled vocabulary, rapid-paced instruction, regular assessment, and systematic approaches to language development. DI was found to help particularly with low- and middle-SES readers, younger students at risk for RDs and older students with RDs. DI was not found to help low-achieving readers with some cognitive limitations. DI was found to have moderate effects on reading achievement, with the effects being greater if the instruction started in earlier grades.

Slavin and Cheung (2003) further investigated the use of DI with ELLs. The English language learning version of DI occasionally involved materials translated into native languages, and the direct teaching of English. In a review of DI studies done in ESL classrooms, Gersten

(1985) found that after 2 years of DI, students performed at or above grade level. However, Gersten pointed out that although students who received direct instruction performed at or above grade level, he thought that the research was biased because in these studies, the teachers were allowed to excuse low-achieving students from testing. In addition, Slavin and Cheung (2003) looked at individual instruction using the same methods and found that learners who received DI made significantly greater gains in words read per minute than their non-DI counterparts.

Overall, the research on DI that has had reasonable sample sizes and reliable selection processes has showed that direct instruction has the potential for being a successful method for struggling readers without cognitive limitations, including ELLs (Ehri et al., 2001; Gersten, 1985; Leafstedt, Richards, & Gerber, 2004). Findings from early research on DI as a teaching method for ELLs has been limited due to low-achieving readers being excluded from testing (Gersten, 1985). However, more recent research (Ehri et al., 2001; Leafstedt et al., 2004) does not appear to suffer from this potential biasing problem.

Relationship Between L1 Instruction and L2 Learning

Manis, Lindsey, and Bailey (2004) investigated the effects of early instruction and achievement in Spanish on achievement in English reading. The study employed tests that were designed to measure the same skills in the L1 as tests measuring L2 skills. Manis et al. (2004) found that cognitive factors like phonemic awareness and rapid automatized naming (RAN) may be significant factors leading to the prediction of reading difficulties in L2 learners. They found that kindergartners' L1 phonemic awareness and RAN predicted English letter-word identification in the second grade. This study provides support for the use of the recommendation by Durgunoglu (2002) that investigations use information about L1 skills to examine instructional practices in an L2.

Grouping

Grouping and class size have always been critical issues for schools. Generally, school administrators must weigh potentially positive outcomes against use of available resources of time, teachers, and money when considering the formation of small groups or one-on-one instruction. Some research has begun to systematically compare the gains in student achievement with varied class groupings in order to help gain insight as to the relative outcomes.

Vaughn et al. (2003) examined group size and its effects with native-speaking English learners and non-native ESL students who participated in an intervention that sought to build fluency, phonological awareness, vocabulary, comprehension strategies, and word-analysis skills. They found that a ratio of 1-to-1 was not superior to a 1-to-3 ratio. However, both 1-to-1 and 1-to-3 ratios were significantly better for groups of struggling readers working with phoneme segmentation, fluency, and comprehension than classes of 10 students with just 1 teacher, or ratios of 1-to-10. The researchers concluded that smaller group ratios increase the likelihood of student on-task behavior, individualization, monitoring of progress, and provision of feedback for all learners. For ELLs, the smaller size was found to contribute to the amount and nature of oral-language interaction, which was beneficial in oral-language development. Gersten and Jimenez (1998) suggested that a small group, defined as 1-to-3, might even be better for ELLs, as it may provide them with models of fluency, opportunities for increased vocabulary, and other benefits from learning with their peers.

Influence of Socioeconomic Status (SES)

There has been much research on issues related to the relationship between referral decisions and SES. D'Anguilli, Siegel, and Maggi (2004) looked at this issue in the context of learning and literacy instruction offered to ELLs in Vancouver, British Columbia. They used the *Wide Range Achievement Test 3* (*WRAT3*; Wilkinson, 1993) to assess letter-naming and word-recognition abilities and found that at the lowest and highest ends of the SES spectrum, the English language learning children improved more than the English-only children, even though in kindergarten they were the most at-risk for reading failure. The authors concluded that literacy-intensive programs that include regular assessments and balance direct and systematic instruction with training on basic reading skills (i.e., decoding ability) can reduce the negative consequence of SES in young ELLs who are simultaneously learning English and acquiring foundational literacy skills. The study did not examine vocabulary and comprehension instruction.

Summary and Conclusion

Studies discussed in this section demonstrated the potential efficacy of direct instruction in phonics and small group sizes (3-to-1) in contrast to larger classes (10-to-1). The studies also discussed the benefits of monitoring L1 reading skills as predictors of L2 achievement and the

potential for SES effects to be mediated via good instructional programs. Grant and Wong (2003) commented on the need for norms and guidelines specific to English language learning instruction, rather than simply comparing the ELLs to their monolingual English-speaking counterparts, as a measure of their efficacy. Clearly, at this time, there are still very few quality studies in this area and a very limited range of ages, grades, and issues studied.

Conclusion

The Future

As noted, the research on ELLs with RDs is scant. The following section highlights some questions, ideas, and recommendations for future work with ELLs who may be struggling to learn to read.

Defining Reading and Reading Disabilities (RDs) in English Language Learners (ELLs)

Part one of this report highlights some key terms and some of the major issues related to reading acquisition and to defining and identifying RDs in ELLs. Developing a shared technical vocabulary of commonly used technical terms is an ongoing need. Part of this effort needs to focus on identifying commonalities and distinctions across languages that may be used in understanding ELLs' reading development and making RD determinations. Durgunoglu (2002) presented a useful model of cross-linguistic transfer that might be used to help identify the variations that may exist across languages.

Since reading is a fundamental skill that ELLs must acquire in order to make academic progress, research must focus on developmentally appropriate and rigorous benchmarks for growth in reading in order to establish those differences that may exist and begin to identify disability. It is important to examine how long it takes ELLs to reach intermediate stages, or benchmarks, in reading, and how the corresponding content standards might fit those benchmarks. In addition, investigations regarding the developmental stages leading to reclassification as fluent English proficient (FEP), with the expected ranges of variation, are necessary.

Referral

According to the national reports reviewed, pre-referral and referral strategies used to identify learners with RDs within the English language learning population are poorly defined

and implemented. Guidelines founded in scientifically based research across language, age, and educational domains are needed to allow referral teams to make consistent decisions that are best for students. Guidelines would support a system that summarizes early intervention efforts, documents assessment history, and provides information on the expertise that exists on the multidisciplinary team. Ideally, a data-tracking system would collect this information as a way to conduct research evaluating the effectiveness of interventions. Before initiating formal testing for ELLs, educational professionals need to know more about the pre-referral process and the special considerations needed for ELLs who are not making adequate progress. Opportunities for parental education and input are also needed. In addition, psychologists and testing teams need assistance and training in working with ELLs.

Assessment

McKoon (2003) recommended that future research on assessment distinguish between two types of goals: (a) to make practical decisions, such as determining the best possible learning environment for a child and the best possible educational practice in a particular context; and (b) to understand exactly what an English language learning child does and does not know about English. Ideally, research should provide a collection of assessments that allow a detailed and comprehensive characterization of exactly what an ELL knows, including knowledge of all the facets of English—oral proficiency; orthographic, phonological, morphological, and lexical knowledge; and sentence and discourse comprehension. Instruments would be sensitive to age/grade development across the range of abilities and disabilities. Such measures would enable us to develop efficient instructional techniques, both for groups of children and for individuals. These measures may need to be sensitive to differences related to each learner's L1, the age of initial acquisition of L2, and the relevant level of L1 literacy.

This collection of demonstrably valid measures for the many aspects of English, applicable across developmental and ability levels, does not currently exist. The research to create them will require multiple kinds of expertise as well as designs that examine validity across L1 languages. This is a long-term project. In the meantime, a parallel research agenda to examine existing measures, identify their feasibility for making informed decisions about educational practices today, and improve on them incrementally should be undertaken.

Measurement Tools and Assessments Being Developed

The report on the National Symposium on Learning Disabilities in English Language Learners (2004) outlined several key areas for consideration when using standardized assessments with ELLs with LDs. One of the most pressing areas has to do with being able to understand how specific types of learning disabilities, especially language and RDs, will manifest in different languages. Promising approaches for early reading skills might start with syllables, onset/rime, and phonemic awareness.

Language of assessment is one of the most pressing issues regarding the identification of ELLs with LDs. Assessing a child who speaks more than one language in only one language may not give a complete picture of what that child knows and is able to do, given that what ELLs know in an L1 may be different from what they know in their L2. There is still not clarity regarding to what degree skills transfer from L1 to L2, as well as the conditions that affect this transfer. Using comparable assessments in multiple languages is ideal, but doing so can be very costly to schools. This, taken with the fact that there is a shortage of qualified personnel to administer such assessments, makes the administration of valid language assessments challenging.

In addition to giving careful examination to the components that comprise the assessments and the language of the assessment, it is also imperative to have as much normative data as possible to distinguish between "normal" L2 development and second-language development under a learning disability so that we are able to make sense out of the benchmarks observed through assessment. More work must be done cross-linguistically and across the variables of language background, age of acquisition, prior education, age of arrival, parental background, use of language, and across various skills in language to establish rough benchmarks.

Instructional Practices

Research on instruction is incomplete. More work needs to be done specifically on bilingual reading instruction, examining both the benefits and challenges of bilingualism. With the goal of improving reading comprehension, there is also a need for longitudinal and experimental work that looks at the effects of instruction on phonological awareness in ELLs other than Spanish speakers, the effects of direct reading strategies instruction with ELLs identified as having LDs, and the role of word recognition and reading fluency with ELLs with

LDs. In addition, research needs to be done on the specific tools and practices that teachers may effectively employ for ELLs who might be demonstrating reading difficulties, are reading below grade level, or may have been identified as having a disability.

Teacher Preparation

From 1979 to 1999, the English language learning population doubled, but teacher training programs have not adequately kept up with these changing demographics in preparing teachers for diverse classrooms (National Symposium, 2003).

At present, 80% to 85% of teachers in California have ELLs in their classrooms, and the number is 40% nationwide (Gándara, Mawell-Jolly, & Driscoll, 2005). Studies have found that teachers need to know more about referral and pre-referral processes for special education services, and these processes need to be made more uniform, with clear definitions of reading differences and difficulties across states (Gándara et al.). Teachers also need to be aware of special considerations needed for ELLs who are not making adequate progress before initiating formal testing for LDs and how to collaborate with colleagues serving these needs (special educators, English language learning instructors, speech pathologists, mainstream teachers) to best serve these needs (Roache, Shore, Gouleta, & Butkevich, 2003). Finally, teachers need to better understand language development, reading for ELLs, special accommodations and methods, and second-language acquisition, and have the tools to both work with learners and to utilize various forms of assessments appropriately and informatively.

Summary and Conclusion

In this report, we review the existing literature as a precursor to developing a research agenda for ELLs with LDs. The need is clear. As stated in the introduction, half of the nation's 100 largest cites are home to more Black, Hispanic, Asian American, and other minority groups than White populations (U.S. Census Bureau, 2007). It is reported that most immigrants come to the United States in search of a better education. As the country's English language learning student population grows—a population that stands now at approximately 10.2% of total public school student enrollment—so too will the population of ELLs with LDs. While considerable attention and research resources have been directed toward the study of RDs of native-speaking students on the K-12 level, little focus has been given to these difficulties among ELLs. The

result is considerable confusion in distinguishing expected issues in English language learning from unexpected difficulties in reading and learning stemming from intrinsic sources.

The present literature confirms that identifying and classifying RDs among ELLs is challenging. There is a disproportionate level of identification among ELLs, demonstrating the difficulty in identifying and evaluating learners in this population (Artiles, 2002). The true number of ELLs with RDs remains unclear at this time.

Several key areas need to be addressed in moving forward in gaining information on the knowledge of RDs in ELLs:

1. Creating a shared model and definition of disability characteristics in ELLs
2. Examining the referral processes to ensure uniformity
3. Developing and researching valid, reliable, and comparable identification instruments in both native and target languages
4. Developing and researching effective instructional practices to remediate issues of RDs in ELLs

Research on this agenda will allow the field to build a systematic foundation for practice. Accurate identification of ELLs with RDs is a necessary first step toward making progress in better serving this segment of the English language learning population. Distinguishing English language learning students *with* disabilities versus those *without* disabilities will better ensure that both groups can receive attention appropriate to their respective needs.

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Notes

[1] *Measurement of disabilities* refers to the classification of students with disabilities.

[2] *Measurement of disabilities* refers to the classification of students with disabilities.

[3] Please note that the authors understand the importance of measuring all language skills in the assessment of ELLs. Speaking and listening skills do provide insight into the reading and writing abilities of ELLs. In this report, we discuss all skills as they relate to reading (e.g., oral vocabulary, oral comprehension, story recall), but the focus is on reading disabilities, and other skills are not explored here.

[4] We note that national data is still spotty. In the 2001–2002 school year, no data systems required districts to record ELL/LD numbers (National Symposium on Learning Disabilities, 2003). The No Child Left Behind (NCLB) act has affected data-collection efforts, including the process of recording ELL/LD numbers, as states move toward student-level accountability systems.

[5] Common misconceptions about RDs do prevail. For example, although boys are diagnosed as having LDs/RDs more often than girls, researchers have failed to find intrinsic differences in prevalence (Coutinho, Oswald, & Best, 2002; Shaywitz, Shaywitz, Fletcher, & Escobar, 1990). In part because of a discrepancy in definitions, LDs/RDs have been defined as being more prevalent in well-educated, highly intelligent individuals; however, core aspects of RDs are identifiable in individuals with lower intelligence scores, poor achievement, or attention deficit disorder (Shankweiler et al., 1995; Stanovich & Siegel, 1994). One should not expect significant differences in the distribution of gender or intelligence scores of ELLs who have RDs as compared to students in the general population.

[6] This is for hearing individuals.

[7] An MRI technique that studies brain function. Using fMRI technology, scientists can determine which part of the central nervous system (CNS: brain and spinal cord) is active during a given task by tracking blood oxygen levels in the brain.

[8] While it is important to note the influence of other skills, such as writing, in the acquisition of language, we are focused on reading skills in this review. To note, however, the writing system of English is relatively more difficult to learn than other alphabetic systems (e.g., German or Spanish) because of inconsistent letter-to-sound and sound-to-letter

correspondences. This is because of preservation of morphological information in the orthographic system, resulting in a morpho-phonemic structure (Venezky, 1995). The consequence is the need to master a high level of inconsistency in letter-sound and sound-letter, and high loading on phonemic processing/discrimination.

[9] The syllable contains meaning, or the meaning-plus-speech sound exists as one unit.

[10] It is important to point out here, too, that this research did not find causal relationships.

[11] Interestingly, in this study, through intervention in both languages, students were able to reach higher decoding accuracy rates earlier in Hebrew (L2) than they were in English.

[12] Researchers, such as Durgunoglu (2002), remind us that these relationships need to be context and condition-specific so as not to oversimply the interaction.

[13] Oral vocabulary has to do with one's ability to provide words for things orally. As an example, oral vocabulary can be tested by showing individuals pictures and asking them to provide the words to describe the pictures orally.

[14] Memory performance on reading tasks has also been predicted by information on verbal memory (Abu-Rabia & Siegel, 2002; Geva & Ryan, 1993; Swanson, Saez, & Gerber, 2004). In Abu-Rabia and Siegel's (2002) work with Arabic students ages 9–14 in Toronto, Canada, they found that there was a significant relationship between pseudo-word working memory and syntactic awareness in both a learner's L1 and L2. In other work on memory, Swanson, Saez, and Gerber (2004) found that language-specific memory systems are more likely to predict language-specific reading performance. This is important because it again underlines the fact that what might manifest itself as a disability in one language might not necessarily manifest itself as such in another language.

[15] In research under way with one of the national learning disabilities research centers (LDRC; a collaboration among research teams at Kennedy-Krieger Institute, Johns Hopkins, Haskins Laboratories, University of Maryland, and ETS), researchers will be investigating whether existing instruments can be used to screen and classify students with subtypes of RDs based on decoding, fluency, comprehension, and their combination in grades 4 to 8. Authors of this report (Shore and Sabatini) will be examining whether these instruments can be validly used with non-native, Spanish-speaking students. The researchers will administer the English

battery as well as Spanish language and reading tests to see whether results are consistent with RDs or an English-language-level interpretation of reading difficulties.

[16] Ecological validity is a form of validity in an experiment. In order for an experiment to possess ecological validity, the methods, materials, and setting of the experiment must approximate the real-life situation that is under study.