# Learning to Read in a Second Language: Research, Implications, and Recommendations for Services

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***Topic***
*Second language*

**Introduction and Subject**
It is important for educators, mental health practitioners, and policy-makers in immigration countries like Canada that promote multiculturalism and bilingualism to consider normal and problematic language and literacy development of young children who develop their reading skills in a second language (L2) context. The studies of L2 literacy development that informed this overview were conducted in various contexts such as (a) learning to speak and read in the societal language, which is often different from the language spoken at home, as is the case with English as a Second Language (ESL) children; (b) children who attend heritage programs in addition to attending schools in the societal language (English or French in the case of Canada); or (c) programs that promote biliteracy, as is the case with French immersion or various bilingual day-schools. This chapter offers a distilled overview of key findings and the practical and policy implications drawn from this research for the provision of services to young L2 children who may have a reading disability.

**Research Context**
Two primary frameworks need to be considered in the assessment and treatment of L2 literacy development. At one extreme there are questions that relate to what is known as the "universal" or "central processing" framework. According to this framework, the same underlying cognitive and linguistic component skills that are crucial for learning to read and spell in monolingual or L1 children (for example, phonemic awareness, speed of processing, visual processes) contribute across diverse languages and writing systems. This also means that these skills influence the development of literacy skills in L2 and bilingual contexts.

The ubiquitous concept of "transfer" can be seen as a version of the universal framework. The logic here goes something like this: If the same processing factors are found to be important when children are learning to read in their L1 and L2, then we can expect that these skills will "transfer" from the L1 to the L2 (and from the L2 to the L1). That is, one can expect positive transfer if the same underlying processing factors facilitate the acquisition of literacy skills in the L2, just the way they do in the L1. This also means


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that performance on these processing factors in one language would be related to reading skills in the other language. Research that supports the universal or central processing framework has important implications for assessment of minority or bilingual children who are at-risk for having a reading disability (RD).*

The contribution of language proficiency to reading and writing skills can be seen as located in this central processor. Developing L2 proficiency can be thought of as a gradual increase in skills related to the ability to comprehend and express oneself in the L2, both orally and in writing, in everyday contexts and in academic contexts. A variety of receptive and expressive skills need to develop. They include familiarity with the phonology of the L2, its vocabulary (both everyday vocabulary and more academic vocabulary), its morphology, and grammar. Some educators and practitioners believe that the main reason that L2 learners lack accuracy and fluency with regard to L2 literacy skills is due to lack of L2 oral language proficiency.[1,2] A related problem is the belief that as long as students have not developed adequate L2 proficiency, it is not feasible or advisable to assess reading disabilities.[3] The problem is twofold: On the one hand, one would want to avoid interpreting poor language and literacy skills development among L2 learners as indicative of RD, a process that may lead to *over-diagnosis* of L2 children as having RD. On the other hand, avoiding assessments of L2 learners who are actually at-risk of having RD, because of lack of training and sensitivity or because of a strong belief that what thwarts children's adequate development of language and literacy skills reflects poor language proficiency, may result in *under-diagnosis* of L2 learners who may actually be *RD,* and a different kind of bias.

The other major framework focuses on *typological* differences. Languages vary along a number of dimensions, relating to oral and written aspects. Some of these differences have significant implications for the processes involved in learning to read and spell in different languages. In terms of writing systems, languages differ in orthographic "depth," or the regularity of correspondence between letters or letter combinations and their associated sounds. English is considered to have a "deep" orthography in comparison to languages such as Spanish or German, which are considered to have a "shallow" orthography. Languages might differ from each other in the contents of their phonemic and syllabic repertoires, their morphemic and syntactic complexity, and so on.

Research within the typological framework is concerned with finding out whether developmental and processing factors vary across languages due to typological differences in features of the spoken or written language. Some studies within this framework compare the role that processing requirements play in different languages. According to this analysis, underlying cognitive resources are tapped differentially, to the degree demanded by the typological characteristics of the spoken and written system under consideration. For example, visual processes may be more crucial when learning to read a character-based language such as Chinese than when learning to read an alphabetic language like English or French. Beliefs associated with this framework include the argument that a child is experiencing difficulties in learning to read in an L2

* This review does not deal with social-emotional, cultural, or demographic factors.


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because of typological differences between his/her L1 and L2. For example, educators and parents may argue that a child whose L1 is Hebrew is having difficulty in developing adequate reading skills in English or French because Hebrew is read from right to left. Another belief associated with this framework is that the prevalence of reading disabilities may vary as a function of the writing system and differences in the challenges that various orthographies present to young learners.

**Recent Research Results**

This section lists key findings concerning the development of reading skills in young L2 learners. The final section discusses practical and policy implications that can be drawn from this research.

Research findings supporting the "universal" framework:

- The development of word-based skills such as decoding and spelling points to parallels in numerous comparisons of typologically different languages.[4-10]
- There are positive and significant correlations between parallel L1 and L2 word-based skills such as word recognition, decoding pseudowords (units of speech or text that look and sound like words in a particular language but that are not actually words), and spelling.[11,12]
- When text-based aspects of reading such as reading comprehension are developed in one language, they correlate with reading comprehension in the other language.[9,13-17]
- Regardless of the type of orthographies involved, L2 learners who have decoding and spelling problems in their L1 have difficulties in their L2 as well.[18-21]
- Phonological awareness (the ability to break words into their components, synthesize their sounds, and learn their features) and rapid naming (the act of quickly naming objects, colours, numbers or letters from long-term memory) and to some extent verbal working memory (which temporarily stores and manipulates information) are sources of individual differences that are associated with reading development and reading difficulties in L1. Regardless of whether these skills are measured in children's L1 or L2, these processes are also sources of individual differences in the development of L2 word-based skills in alphabetic and non-alphabetic languages.[11,12,22-27]
- These processing skills measured in the L1 and L2 often correlate with each other, and can predict decoding and spelling skills in both L1 and L2. This has been found across different language groups.[7,8,10,28,29]
- L2 learners who have serious problems with word-based reading skills and with the cognitive processes that are necessary to develop well developed word-based skills in the L2, also have poor reading fluency, reading comprehension, and writing skills.[9,26,27,30-33]
- When RD is determined on the basis of performance on word-based skills such as word recognition and pseudoword decoding, and phonological processing measures such as phonological awareness and rapid naming the prevalence of RD is similar in ESL children and children who are L1.[2,30,34]


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Research on the role of L2 oral proficiency:

- L2 children take a long time to develop their L2 oral proficiency. Even after five to six years of attending school in the L2 environment, aspects of L2 oral proficiency skills, and especially those required for academic learning, continue to lag behind the skills of L1 peers.[35-37]
- In the early school years, when the L2 oral proficiency skills are in their infancy, L2 vocabulary explains very little unique variance in L2 word recognition and spelling skills.[38]
- By the beginning of grade 2 (following one year of instruction in English), performance on phonological awareness and rapid naming can predict subsequent performance on word-based reading skills of ESL children.[39]
- Even when L2 children's second language proficiency is still developing, they can learn to read and spell words and achieve similar accuracy to that of L1 children.[11,20,22,26,38,39,40-42]
- Aspects of L2 language proficiency such as vocabulary and grammatical skills *are* related to text-based aspects of literacy such as reading fluency, reading comprehension, and the ability to write.[15,16,30,33,38,43-45]
- In spite of differences in their command of the oral language, cognitive processing profiles of L2 students who are RD are similar to those of L1 students who are RD. Regardless of children's home language background, the profiles of the at-risk readers include persistent and extremely poor performance on word recognition, pseudoword decoding, and spelling tasks, and concomitant poor performance on phonological processing measures.[7,10,18,19,40,46,47]

Research findings documenting typological differences:

- Because specific orthographic features present different demands, the developmental pathways associated with the development of reading and spelling tasks in different languages is not identical. Normally achieving children will attain word reading accuracy faster in their L2 than their L1 if the L2 is associated with a shallow orthography.[41,43,45,48-50]
- The weight of cognitive processes such as phonological awareness, rapid naming, and visual processes that underlie word reading, are influenced by typological differences between the L1 and L2 orthography.[11,19,51-53] For example, in shallow orthographies such as German and Dutch, speed of naming, rather than phonemic awareness is a stronger predictor of reading success and of reading failure.[54]
- In early stages of L2 spelling development, there is an effect both of the L1 phonology and its graphophonic rules on how students spell in their L2; additionally, the *type* of reading and spelling errors observed in the L2 reflect typological influences.[29,38,41,43,55-58]
- Reading-disabled children reading in different orthographies share some characteristics such as difficulty in decoding pseudowords and similar cognitive profiles, but they also have unique characteristics associated with the language and writing system typologies.[47,59]


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## Conclusions

Complex processes are involved in the acquisition of language and literacy skills in L2 contexts. On the basis of research conducted in the last decade, it is possible to conclude that neither of these frameworks, on its own, can account for when L2 children develop their language and literacy skills, or for the incidence and nature of reading disabilities. It is useful to consider the universal and script-dependent perspectives on L2 reading development as complementary.[60] L2 language proficiency takes a long time to develop, and while it is related to text-based aspects of literacy such as reading fluency, reading comprehension, and writing, L2 language proficiency explains little unique variance in word-based reading skills of young L2 learners. On the other hand, similar cognitive processes explain individual differences in word recognition and spelling skills in different languages and in L1[32] and L2 learners. In addition, the cognitive and reading profiles of L2 RD children resemble those of their L1 RD peers. However, typological differences may affect the ease or difficulty with which L2 children acquire specific elements of the spoken and written language, and the kind of errors that they commit in early stages of literacy development. Teachers in multi-ethnic classrooms tend to withhold judgment about ESL children who may show similar warning signs to those noted in at-risk L1 children, because they tend to attribute these difficulties to lack of sufficient oral language skills.[2] The available research has taught us that it is possible to diagnose RD in L2 children rather early. The practice of delaying diagnosis of potential RD in L2 children may be motivated by concerns to avoid bias or by attributing persistent difficulties to other causes such as lack of L2 oral proficiency and typological influences. However the results of such practices are costly and have long-lasting consequences for undiagnosed and under-treated L2 children who have difficulties in learning to read and write in the school language. Recent research advances in this area should enable educators and other professionals to minimize over-diagnosis and under-diagnosis.

## Implications

Policy: training professionals

- It is important to continue to provide L2 children with sustained and systematic opportunities to develop their L2 oral proficiency. To enhance academic achievement, it is important to be mindful of this point and not be complacent when acceptable levels of everyday oral language fluency have been reached. This point has implications for the content of in-service and pre-service curricula.[61]
- Some L2 children may read with difficulty not simply because they require more time to develop their L2 oral proficiency but because they have problems with the acquisition of basic reading skills. Therefore, it is important to look beyond oral language proficiency and not to delay assessment and intervention.
- It is not necessary or ethically defensible to withhold assessment and intervention from L2 learners who show warning signs of RD. Not only health care providers, but also classroom teachers need to be trained and empowered to identify the warning signs early, and to adapt instruction accordingly.


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Assessment in the L2

- Since there are positive and significant correlations between parallel L1 and L2 component reading skills and predictors of successful reading development in the L1 and the L2, administering to L2 learners the same processing measures (e.g., phonological awareness, rapid naming) used for assessing RD in L1 children is highly informative. This can be done when a rudimentary level of L2 oral language proficiency has been achieved.
- Given that L2 oral proficiency does not play a major role in understanding reading difficulties of L2 children, word-based skills, including word recognition, pseudoword decoding, and spelling can and should be assessed, using standardized measures.
- Since individual differences in L2 word-based basic reading skills correlate with performance on text-based aspects of reading and writing, it is important to assess young L2 learners who may be at-risk for having a reading disability on as many of the areas known to be related to RD as possible.
- Examining the gap between listening comprehension and reading comprehension is highly informative, especially if L2 listening comprehension is superior to reading comprehension.

Putting the puzzle pieces together

- Gathering data about the child's performance in the home language is useful as it helps to validate observations made within the L2 context. However, this may not be feasible for a variety of reasons such as L1 language attrition, lack of appropriate measures in the L1, and disruptions to the child's education, to name a few.[60]
- Other sources of information are important pieces of the L2 assessment puzzle that contribute to the validity of the diagnosis. These include report cards from the home country; interview data on the achievement of developmental milestones, and in particular, the onset and development of language; previous assessments; and the language and academic achievement of siblings.
- A highly informative source of information comes from monitoring progress and learning over time. Persistent language and reading difficulties in spite of adequate instruction should not be ignored. Approaches such as dynamic assessment and curriculum-based assessment are especially conducive for this purpose.
- Measures of general ability are not that useful in identifying RD in L2 children. Practitioners also have to be mindful of the fact that in the case of L2 learners it is more difficult to establish a "discrepancy" between ability and indices of reading in order to justify an RD diagnosis.
- Error analysis is a useful source of information but should be done with typological influences in mind. It is important to consider the transfer of specific skills from the L1. One should consider whether errors occur across the board or are limited to typological differences. Errors across the board are more suggestive of a disability than errors that are typical of learners from a given linguistic background and that disappear over time.[20]


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- Considering the family cultural and linguistic background, acculturation, and parental attributions about their children's academic difficulties is essential. To be sensitive, relevant, and effective, it behooves practitioners to try to use cultural informants and seek information about the history, language, and culture of the family.[46]


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