Critical Review: What are the Early Predictors of French Literacy in Canadian French Immersion Programs

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Many children in Canada opt to study in the French immersion stream of their school, where they are enrolled in both English (L1) and French (L2) literacy classes. This critical review explores early predictors of French literacy in French Immersion programs in order to help promote the early identification of L2 children who are at-risk for reading difficulties.The reviewed studies consisted of single group studies without a control, and non-randomized clinical trials. The studies shared valuable information on early English and French predictors of French literacy success, early L1 literacy difficulties that may predict L2 challenges, and cross-linguistic transfer of L1 and L2. However, the research regarding French Immersion literacy outcomes is limited, and mainly consist of suggestive and lower level of evidence. This critical analysis reveals valuable information essential to both French immersion teaching, and the way SLPs target speech therapy treatment plans when working on literacy goals.

Introduction

To encourage bilingualism in Canada, French immersion programs were introduced across Canadian schools in 1970 to provide French exposure to a majority English-speaking population (Bourgoin, 2014). French immersion programs require students to spend at least 50% of their school day instructed in French (Cummins, 2000). French immersion programs vary by age group, with early French immersion beginning in kindergarten or grade 1, middle French immersion beginning in grade 4 and late French immersion starting in grade 7 (Cummins, 2000). While the specifications of which subjects are offered in French vary across school boards, all Canadian students enrolled in the French Immersion programs are required to learn literacy skills in both English (L1) and French (L2) environments (Au-Yeung, et al., 2015). For the most part, children who enrol in early French immersion have little to no French language experience – and for this reason, French immersion teachers rarely partake in formal reading instruction until after students have acquired oral proficiency in French (typically in grade 2 or grade 3). As a result, children in French immersion who are at-risk for reading difficulties are often typically not identified in the early stage of literacy development, causing many young readers to not receive timely instructional interventions (Wise et al., 2016). The early identification of poor readers is therefore important because it can lead to the initiation of instructional interventions that can work to narrow the gap between poor readers in French immersion and their peers. It is also important to note that reading difficulties are one of the most important factors influencing parents to withdraw their children from French immersion to the regular English program (Mannavarayan, 2001). It is no coincidence then, that the decision from parents to withdraw their child from French immersion is often made prior to the end of Grade 3 (Halsall, 1998).

This critical review will aim to identify early predictors of French reading, so that these factors can effectively be targeted in reading risk assessments, and the corresponding reading interventions at an early stage of the child's literacy development.

Objective:

The objective of this paper is to critically analyze and review the research that is available on the early predictors for French reading achievement for students in French immersion.

Methods:

Search strategy: Computerized databases including Google Scholar and PubMed were searched using the terms [(biliteracy) or (bilingual literacy development) or (L1 L2 literacy)] and [French Immersion] and [Canada]. No limits were placed on this search.

Selection criteria: Studies were required to measure or describe the literacy outcomes of Canadian students studying in a French immersion environment at the primary level. Even with this search criteria, articles featuring different languages and different countries appeared in the search. Therefore, articles were selected if they were based on being tied to Canadian classrooms, provided information on both the factors influencing pre-literacy success as well as cross-linguistic transfer between L1 and L2 French literacy.

Data collection:

Results of the search criteria generated five relevant articles that addressed the research question including 4 single group studies without control, and 1 non-randomized clinical trial.

Results:

Single group study without control (level of evidence: 3).

Bourgoin (2014) conducted a single group longitudinal study to study the effects of early literacy skills on Grade 3 French immersion reading achievement. Eighty-three well-described primary school children (35 boys) who entered the Grade 3 French immersion program were followed until grade 3, at which time 56 students were available for follow up. Kindergarten literacy assessments were completed 3 times over the school year including measures of initial sound letter naming at time 1, letter naming, phoneme segmentation, and nonsense words at time 2, and letter naming, phoneme segmentation and nonsense words at time 3. Once in the grade 3 FI program, French assessments consisted of letter naming, phoneme segmentation and nonsense words in the fall, phoneme segmentation and nonsense words in the winter, and oral reading fluency, retell fluency and running records in the spring. All assessments were published tests or procedures commonly employed for this purpose. No information regarding blinding or reliability measures were reported.

Overall, this study provides suggestive evidence that testing pre-literacy skills can predict later French immersion literacy skills. The study found that letter naming (assessed in the spring) was found to be significantly correlated to L2 oral reading fluency and L2 comprehension scores. The spring letter naming assessment and the fall initial sound measures explained 59% of story retell. The spring letter naming test was a significant predictor or running record scores and the winter phoneme segmentation measures. All three L2 achievement

measures which tested reading fluency, accuracy and comprehension yielded the same results. The stepwise regression results show that i) English spring letter naming and fall initial sound are strong predictors of L2 comprehension skills. ii) French nonsense words, and french letter naming were strong predictors for L2 reading outcomes. Limitations of the study include the lack of control groups, small sample size, lack of detailed information regarding student profiles. Strengths include urban and rural representation of participants, and clear description of procedures.

Erdos et al (2011) conducted a single group study examining the extent to which English (L1) reading-related skills (i.e. phonological awareness and knowledge of the alphabetic principle (letter-sound/name knowledge)) predict French (L2) word decoding and reading comprehension scores at the end of grade 1 and whether L2 oral language factors also contribute significantly to predictions of variability in L2 reading outcomes beyond the English reading-related skills aforementioned. This study included 86 well-described French immersion students who were taught initial literacy skills in only the French language. Participants also completed standardized measures in English and French at three different times (kindergarten fall & spring, Grade 1 spring). A parent questionnaire requesting information on the child's language background, family history, socioeconomic status and the child's health, developmental milestones and exposure to books was given. Baseline testing at time 1 included screening of hearing, vision and non-verbal cognition, as well as a receptive vocabulary measure. Time 3 testing included measures of listening comprehension, nonsense word reading, decoding in French, Pseudo-word decoding in English, and French reading comprehension. In both

times 1 and 2, phonological short term memory, phonological access, phonological awareness, and letter-sound/name knowledge (in French) were assessed. At times 2 and 3, rapid naming and letter-sound/name knowledge in English were assessed. In all 3 test times, receptive and expressive grammar in English, and letter naming were assessed.

Appropriate statistical analyses revealed that the best kindergarten predictors of L2 decoding were knowledge of the alphabetic principle in English, phonological awareness in English, and knowledge of French at kindergarten entry. Additionally, these variables were significant predictors of French reading comprehension. Letter-sound knowledge in English and blending in English were found to be significant predictors of word decoding in French, and of pseudo-word decoding in grade 1. Letter-name knowledge in English on the other hand was a significant predictor in the fall of kindergarten, whereas blending in English was a significant predictor in the spring kindergarten assessment. With regard to reading comprehension, rapid automatized naming of objects in English along with letter-sound knowledge in English, English-blending, and French receptive vocabulary at kindergarten entry contributed significantly to the prediction of L2 reading comprehension at the end of grade 1. Regarding whether or not SVR is applicable to learning to read in a second language and if it can be applied cross-linguistically – there is no evidence that SVR applies cross-linguistically (using L1 predictors to predict L2 reading outcomes). Overall, because the results show that assessments of L1- related skills and knowledge in the fall of Kindergarten are significant predictors of later L2 reading outcomes, there is good evidence to justify early identification of French immersion

students who might be at risk later for reading difficulties (as early as fall of kindergarten). Strengths of this study include the use of a wide-range of relevant measures, a representative sample, standardized and norm-referenced tests, and well-described procedures. Limitations of the study include the fact that this is a correlational study and therefore a causal link cannot be established between the predictor and outcome variables examined. Furthermore, the study had a relatively small sample size (n=86) and also lacked a control group of English-speaking students (receiving instruction in English) to validate the findings from this study. That said, though the sample size was small, it was still representative in that they included participants from 12 different classrooms in 7 different schools in Quebec. All things considered, this paper provided important results as it addresses lots of unexplored issues, and provides useful replication from current studies as well (i.e. the extent to which L1 reading-related skills (i.e. phonological awareness and letter-sound knowledge) predict L2 word decoding). For the reasons indicated, this study provides suggestive evidence that the best kindergarten predictors of L2 (French) decoding and reading comprehension were knowledge of the alphabetic principle in English, phonological awareness in English, and knowledge of French at kindergarten entry.

Deacon, S. H., Wade-Woolley, L., & Kirby, J. (2007) conducted a single group longitudinal study examining the relationship between morphological awareness and reading development (in two languages) in 58 French Immersion students (20 boys) from English-speaking homes followed from grades 1 to 3. Well-established English and French reading and morphological awareness

measures were administered individually at 6 separate testing points (fall and spring of Grades 1, 2 and 3). Standardized measures of receptive vocabulary and nonverbal reasoning were completed at study entry.

Appropriate statistical analysis revealed that early English morphological awareness was a strong predictor of reading in English and French, whereas early measures of French morphological awareness were related to French reading only. Further, it was found that later measures of French morphological awareness contributed to reading both within- and across languages. As it pertains to the development of morphological awareness in French immersion students, the study's results provide some evidence that as second-language morphological awareness increases its effect on reading, the first-language morphological awareness may start to decrease as a result. Strengths of the study included the use of a longitudinal design to examine the within- and cross-linguistic contributions of morphological awareness to reading development in children who are learning to read two languages - allowing it to show developmental trends fairly effectively; and the use of a representative study sample - strengthening its generalizable effect. Limitations of the study however included 24% participant loss over the study and a small sample size as a result, differing French immersion start times across participants, the use of only one measure of aspects of grammar, and a sole focus on word reading alone. Overall, this study provides suggestive evidence for the role of second-language morphological awareness in the reading progress of developing bilingual children.

Krenca K. et al. (2019) conducted a year-long longitudinal single group study to examine the predictive value of a dynamic

test of English and French lexical specificity on the early classification of at-risk status in emergent bilingual children enrolled in French immersion schools in a predominantly English-speaking region in Canada.

This study consisted of 57 children who began French instruction in the fall of Senior Kindergarten. Children were classified into at-risk or not at-risk subgroups based on their reading performance at the end of Grade 1 (n=13 at-risk; n=22 'not at-risk' emerging English (L1) –French (L2) bilinguals). In the fall of Grade 1, the children were assessed on lexical specificity and phonological awareness individually in English and in French. In the spring of Grade 1, the children were tested individually on English and French word reading accuracy and fluency. Appropriate statistical analyses revealed that English lexical specificity contributes to the early classification of at-risk readers in French, after controlling for French phonological awareness and nonverbal reasoning. Further, this study provided evidence that a dynamic measure of lexical specificity improves the prediction of at-risk status over and above phonological awareness. The paper concluded then that English–French bilinguals 'rely on phonological representations of English words to develop English phonological awareness, which, in turn, facilitates word reading in French'. Strengths of the study included the use of a longitudinal design and that it was the first study of its kind to explore the utility of dynamic assessment in risk-identification within diverse early immersion environments. Limitations of the study however included the use of a small sample size in the determination of a child's 'at-risk' status; a lack of specificity of which region in Canada the study was conducted; the lack of a multivariate battery of early screening measures (rather than the small number of screening measures used by the study) to increase the sensitivity of at-risk identification; and 28% of the study's sample was exposed to another language at home (as well as English) - which is more representative of students enrolled in Canada (Krenca et al., 2019). Overall, this study found evidence that a dynamic assessment measure which targets lexical specificity (a precursor to phonological awareness) in English improves the early at-risk classification of children for reading difficulties in French. This suggests then the idea that there may be a significant role for L1 (English) reading-related and language-related abilities in the acquisition of reading skills in L2 (French).

Côté, Savage & Petscher (2020) conducted a matched control intervention study to study if reading intervention is provided in the L1, will there be a cross-linguistic transfer to the L2 across French immersion students in Montreal?

84 at-risk grade 1 students were selected from a group of 226 students from 10 public French Immersion elementary schools in Montreal, Quebec. 44 of the participants were girls and 40 participants were boys. The majority of the students came from English-speaking backgrounds, where 61.6% spoke English to both of their parents, 29.1% spoke English with at least one of their parents, and 19.8% spoke only French to both of their parents. 8.1% of students spoke a language other than English or French at home. Each student enrolled in the study was identified as "at-risk", scoring below the 30th percentile on the WRAP IV English word-reading measure assessment.

Students were given both an English and French pre-test in December and a post-test in May. The English test consisted of the

Reading Subtest of the Wide Range Achievement Test III (WRAT), 20 words from the Fry high frequency word list, the Comprehensive Test of Phonological Processing (CTOPP), and the segmentation fluency and spelling subtest of the Woodcock-Johnson III Test of Achievement (WJ).

The French test included reading of regular words, irregular words and pseudowords. To measure the students' phoneme blending in reading of both regular and irregular French words, the French standardized battery Épreuves de Compétence en Lecture (ÉCOLE) was used.

The students were put into groups of three or four and received three 30-minute intervention sessions per week (11 hours total) by trained research associates. The focus of the intervention sessions included lessons on vowel pronunciation, digraphs, blending, sight words pronunciation and segmenting words while reading. The author compared this intervention to the DMSfV.

The study confirmed that the students that participated in the English reading intervention improved in their post-test scores in both English and French reading. The specific cross-language effect included French word regular and pseudoword reading.

In the study, the researchers included a similar number of girls and boys who were the same age, making this research generalizable to both boys and girls in Grade 1. However, it is important to note that the sample size is small. The paper indicated that the students are from Montreal. Since the participants are from one regional area, the study cannot be reliably generalized to other populations from different cities. The study's participants attended public school in Montreal. While different regions within Montreal were part of the sample, the results cannot necessarily be applied to students who attended public school outside of Montreal, or private or homeschool both inside and outside of Montreal, as the language curriculums may differ. The procedures of the study were clearly outlined, allowing for the study to be replicated. The authors noted that there are limited non-standardized and standardized tests in French, and therefore they had limited options. The author provided a thorough description of the French standardized test that was used as it is uncommon to non-French practitioners. It is important to note that the English pre and post-tests were not equivalent to the French pre and post-tests, however the literacy measures are all norm-referenced tests that were matched with standardized measures. Each student received the same amount of intervention, by RAs that received the same training when providing the intervention. The authors note that the results are similar to a Canada-wide study (Savage et al., 2018), indicating that the study is replicable and reliable. Based on the small sample size and the English and French assessments that are not equivalent, this paper is deemed as having highly suggestive evidence.

Discussion

Students enrolling in the French immersion program typically have minimal French language experience. As a result, the students are balancing French oral language coupled with both French and English early literacy skills, with the goal of being "immersed" in the language (Wise et al., 2016). Second language can therefore be masked at times as some teachers may interpret difficulties in reading skills as difficulties in second language rather than the reading itself (Wise et al., 2016). This

critical analysis examined the early predictors of French literacy in Canadian French immersion programs. Overall, the research reviewed provided somewhat suggestive to suggestive evidence for a variety of factors that influence early literacy success. Nevertheless the research isolates early literacy skills that, when targeted and mastered, have impacts on a student's literacy outcomes in the French language classroom.

Predictors of literacy success in kindergarten included: letter-naming abilities correlated to L2 oral reading fluency and L2 comprehension scores in grade 3 (Bourgoin, 2014). Additionally, when tested in kindergarten, early English morphological awareness is related to strength in reading abilities in both English and in French reading. In contrast however, early measures of French morphological awareness were significantly related to French reading only.

Predictors of literacy success in grade 1 included: having a good base in alphabetic knowledge, phonological awareness and letter-sound knowledge in English, impacts success in French decoding (Bourgoin, 2014, and Erdos et al., 2011). The transfer between skill strength in one language to a second language demonstrates how literacy development in one language can support another language. Finally, knowledge of the French language before starting French Immersion impacts a child's ability to succeed in the program because background experience in a language contributes to the early mapping of that particular language's orthography, which will therefore boost that child's reading ability in that language (Erdos et al., 2011).

Regarding the predictors of L2 difficulties, Krenca K. et al. concluded that English language lexical specificity predicts reading

difficulties in French. The author states this is the case because English–French bilinguals rely on phonological representations of English words to develop English phonological awareness, which, in turn, facilitates word reading in French. However, as previously mentioned, at-risk students that receive intervention in English can see positive changes in their French reading success (Côté, 2020).

Further research needs to be done to see if at-risk readers would benefit from early intervention targeting the specific factors predicting early French immersion literacy success that were outlined in this paper.

Clinical Implications

The findings from this critical review found sufficient evidence to indicate that there are key emergent literacy factors that do impact biliteracy performance. However, the findings are informative for teachers in the classroom as well as speech-language pathologists that are working to improve the literacy outcomes of students in the French Immersion stream. It is recommended that when clinicians are assessing kindergarten and grade 1 students, they monitor the performance and progress of the emergent bilingual literacy factors previously mentioned in this critical review. Additionally, when providing intervention for students studying in the French immersion stream, clinicians should note that a cross-linguistic transfer does exist, and students' L2 progress will benefit from the intervention even if it is provided in English.

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