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# The teaching and learning of reading in an immersion setting: A focus on word recognition

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**ABSTRACT**

Word recognition is vital in the reading process and word reading relates to comprehension. In immersion settings, there is a lack of empirical evidence internationally of how the teaching of reading affects pupils' literacy development, and what skills and strategies are employed by pupils in their reading. In Ireland, children learn to read in Irish and English in Irish language immersion schools. In recent years, phonics programmes in Irish have been introduced to schools. But little is known about taught application of strategies when reading, or if these strategies are effective. The current study was designed to ascertain how Irish immersion pupils aged 9–11 recognise words in their reading in Irish. Assessment tools that focus on word recognition strategies were developed specifically for this study. Pupils from two schools ($n = 159$) in two jurisdictions were selected for assessments. This study highlights the need for appropriate assessment tools when assessing reading in two or more languages and in a minority language context. Teacher knowledge is vital, and with a greater focus on the orthography of Irish, teachers could be equipped to assist pupils with phonemic strategies as well as provide more opportunities to read.

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## Introduction

### *Reading and word recognition in two or more languages*

Comprehension is the goal of reading, and to comprehend a reader needs to be able to read and understand most or all words in a text. Word recognition is vital in the reading process, and word reading in context relates to comprehension. If the processes involved in individual word reading are not developed, nothing else in the reading system can be effective (Adams 2011). In immersion settings, biliteracy, being literate in two languages, is the aim. Reading two or more languages involves a different learning trajectory than monolingual reading (Hornberger 2004; Reyes 2012). It is also acknowledged that having more than one language may imply varying degrees of knowledge of each language, and languages

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may be unevenly developed (García et al. 2008). Lexical and syntactical knowledge may still be developing for multilingual readers and examples of syntax, grammar or vocabulary in reading may be unfamiliar to the reader (Briceño and Klein 2018). Indeed, it has been found that readers with more vocabulary are more accurate in word recognition (Yap and Balota 2015). Hornberger's (2004) framework for biliteracy is an effective schema in this context, with facets of multiliteracy along four continua, suggesting different trajectories of development across languages. Languages also have common underlying processing systems and readers can potentially benefit from the transfer of skills and strategies (August and Shanahan 2017; Cummins 2017; Pasquarella et al. 2014).

In recognising words, readers of more than one language need to distinguish words from their known languages when reading. Word-reading skills across languages are affected by orthography as well as learning contexts such as instruction and exposure to each language (Gottardo et al. 2021). In addition, visual word recognition is affected by frequency of occurrence, the number of letters and imageability (Yap and Balota 2015). Parsons and Lyddy (2009) compared word-reading strategies in Irish and in English in different school settings in RoI, and describe how different orthographies elicit different patterns of error. Since this study there have been curricular changes and phonics instruction in schools. The current study reports on the word recognition strategies of pupils in Irish immersion schools in the two jurisdictions in Ireland, known as the Republic of Ireland (RoI) and Northern Ireland (NI), comparing some commonalities and differences across the two jurisdictions. The focus is on the orthographies of Irish and English, the pupils' two languages.

## *The significance of orthography in word recognition*

To read familiar words, readers form connections between graphemes and phonemes to access meanings in memory (Ehri 2020). Readers need to know grapheme-phoneme relations, be able to decode and read words in text to make these connections. Models of the reading process have emphasised this integration of skills (Birch 2015; Kintsch 1988; Rumelhart 1980). Different orthographies and linguistic features in languages result in a different focus in learning. In orthographies, the consistency of the sound-symbol correspondence, or how phonemes map onto graphemes, is an important factor in the learning process (Li et al. 2021). Orthographies are defined as deep or shallow. In a shallow orthography, the sound-symbol correspondence is direct as in Spanish, Finnish and Welsh. Deep orthographies such as English are less direct, and readers must learn the arbitrary links between sounds and spellings. The orthographic depth hypothesis (Frost et al. 1987) aims to explain how variations among orthographies affect word-reading processes. In a regular orthography such as Welsh, readers are more likely to make nonword-reading errors with a grapheme-phoneme strategy, while in an irregular orthography such as English are more likely to make whole-word errors relying on lexical retrieval (Parsons and Lyddy 2009; Ellis and Hooper 2001).

Both Irish and English have alphabetic writing systems. In Irish phonology, vowels are central, and consonant pronunciation depends on the adjacent vowels. Broad consonants are velarised, with the back of the tongue towards the soft palate, and occur beside the vowels *a*, *o* and *u*. Slender consonants are palatized, with the tongue close to the hard palate, and occur beside the vowels *e* and *i*. There is a spelling rule that displays vowel harmony with broad consonants and slender vowels agreeing across syllables (e.g.

*minic*, *doras*). All vowels can be long or short. Long vowels are marked in the written form by an accent or *fada* (long). Vowels add a level of regularity to spelling, and Irish has a more regular orthography than English. But regularity does not equate with transparency, and other aspects contribute to opacity in Irish orthography (Hickey and Stenson 2011). Irish has a system of consonant mutations where words change in appearance in the context of grammatical structures, highlighting the importance of word recognition in the context of text rather than in wordlists without context.

In English, sound-symbol correspondences are variable and inconsistent (Adams 2011; Ehri 2020) due to the historic mixture of other languages, and historical spellings and etymology have been preserved at the expense of pronunciation. However, English does not have the level of inflections and mutations in syntax that Irish has, resulting in a more consistent morphology, and spelling in English is more stable. In English, automatic sight reading is an important skill and allows readers to devote their time to construct meaning from text (Nagy 2007). Building a sight vocabulary is essential and can be developed through exposure to text. There is an assumption that there is a high correlation between the frequency with which a reader encounters a word and the probability of identification (Milton 2009; Yap and Balota 2015). If exposure to words assists visual memory, then altered words no longer look the same and therefore lessen the exposure (Acha, Laka, and Perea 2010). This has major implications for word recognition in Irish.

## *Phonology and morphology*

Phonological awareness involves a continuum of developing skills. Studies show that skills in phonological awareness follow a similar developmental sequence across languages (August and Shanahan 2017; Branum-Martin, Tao, and Garnaat 2015). However cross-language variation depends on the orthography of each language (Goswami 2008). Some languages such as English and French emphasise phonemes while others such as Italian and Spanish emphasise larger grain sizes such as morphemes (Branum-Martin, Tao, and Garnaat 2015; Ziegler and Goswami 2006). Morphemes also include inflections, affixes, roots and derivations, and these may differ across languages. Irish is phonemically more regular than English but is more complex at a morphological level. The system of consonant mutation, lenitions and eclipsis, in the orthography signal various morphological processes; gender, number, case, possession, adjective agreement and tense illustrated in Table 1, that are challenging for learners.

These inflections and mutations, both initial and final, change the appearance of words in sound and in appearance, and highlight the need to engage with word recognition in the context of sentences and text. The specific orthography of a language needs to be considered in strategy use. Other languages find a focus on word roots or lemmas may be effective (Acha, Laka, and Perea 2010; Cobb and Laufer 2021). In bilingual or immersion settings, children need to learn the written code of two or more languages as well as the interactions between their

**Table 1.** Examples of inflections and mutations on common words in Irish syntax.

| Root word | Plural | Initial mutations | Genitive case |
|---|---|---|---|
| *crann* (tree) | *na* ***crainn*** | *sa* ***ch****rann* | *duilleoga na* ***gcrann*** |
| *teach* (house) | *na* ***tithe*** | *doras na* ***dt****ithe* | *bean an* ***tí*** |
| *bean* (woman) | *na* ***mná*** | *an* ***bh****ean* | *cearta na* ***mban*** |

orthographies, phonologies and semantics. There is evidence that bilingual children can distinguish their known languages psycholinguistically to use them in functionally differentiated ways (Genesee 2020). This has implications for teachers and educators. Knowing the orthography of Irish and English and how skills and strategies interact and differ can help understand the teaching and learning process of sight words and the decoding processes.

### *Current practice in immersion schools in Ireland*

Both jurisdictions in Ireland share resources and collaboration is frequent. However, there are two separate curricula. Both curricula, *Primary Language Curriculum* (2019) and the *Northern Ireland Curriculum* (2009) provide guidance on the teaching of reading in Irish and in English. Word recognition is included as a major aspect in the teaching and learning of reading in Irish. Phonics programmes such as *Mar a Déarfá* (Breacadh 2015), *Fónaic na Gaeilge* (de Brún and MacCorraidh 2009), *Cód na Gaeilge* (CCEA 2012), have been introduced in immersion schools, initially in NI and subsequently in RoI, and all schools, in both jurisdictions, have been offered explicit professional development on phonics. Most immersion schools in Ireland begin teaching children to read in Irish first (Ó Duibhir 2018). Irish is not the language of home for the majority of children in immersion schools. Children also spend more instructional time in school reading in Irish than in English. Yet, research reveals that pupils in Irish immersion schools choose to read for pleasure more often in English than in Irish (Harris et al. 2006; Parsons and Lyddy 2016). There is also evidence that these children, including native speakers, are better readers in English (Péterváry et al. 2014). The practice of teaching children to read in Irish has historically been based on the approach to the teaching of reading in English. The 'Look and Say' method for word recognition was a predominant practice in Irish, as it was in English for many years (Ó Faoláin 2006). Wordlists that list the most frequent words are available in Irish but are based on current publications, many of which are translations, and as more books are published, the lists become outdated.

Children's strategy use in word reading in Irish was measured in earlier studies where readers were unsure of regular phoneme-grapheme correspondences and displayed an over-reliance on initial or salient letters (Hickey 2007). Pupils were also found to make more real-word errors in English and nonword errors in Irish (Parsons and Lyddy 2009). The importance of a phonics approach in Irish has been emphasised (Hickey and Stenson 2016; Parsons and Lyddy 2016). But there is no recent evidence to indicate the application of this approach or, indeed, its effectiveness, particularly of its impact on reading in the higher primary classes. Specific teacher preparation for teaching in an immersion setting is available in both jurisdictions (Nig Uidhir and Ó Ceallaigh 2023). However, the definitive needs of teachers in immersion contexts were not being met by pre – and in-service provision (Ó Duibhir 2018).

In Ireland, like in most predominantly English-speaking countries, the Science of Reading (SoR) is pre-eminent. The SoR aims to present a scientific background for reading and therefore to minimise the number of children who struggle with reading (Castles, Rastle, and Nation 2018). Perceptions of the SoR are diverse (Shanahan 2020) but it has, in recent years, drawn on the simple view of reading that focuses on decoding and linguistic comprehension, with more attention on decoding (Cervetti et al. 2020). Proponents of the SoR acknowledge that more detailed cognitive processes occur within

these components (Castles, Rastle, and Nation 2018). However, other researchers believe that the SoR primarily involves assessed reading proficiency, and that a wider view should include a more socially just interpretation, valuing and building on differences in readers' linguistic, cultural and individual variation (Aukerman and Chambers Schuldt 2021). It has also been asserted that much of the SoR research is Anglocentric as well as ethnocentric, and English is often the assumed language (Daniels and Share 2018; Share 2021). Much of the focus of SoR research that involves phonics, reading accuracy and effortless word recognition, may not be an issue or the same in other orthographies. In immersion schools in Ireland children learn to read and write in two languages. Indeed, the PLC in the RoI requires that all children, including those in English-medium schools, learn Irish as a L2 and aims at some level of biliteracy. In this context the SoR needs a broader interpretation, linguistically and culturally. Questions remain as to the most effective approaches to respond to the specific needs of the teaching and learning of reading in Irish, and indeed the teaching and learning of reading in Irish and English, or any two languages, in tandem. An evidence-based approach to the teaching of reading has the potential to affirm current practice or to reveal areas for improvement.

### *Assessment of reading in Irish immersion schools*

Teachers in bilingual settings require specific knowledge to analyse and understand data from assessments and use it effectively (Ascenzi-Moreno 2016). Progression for emergent bilingual readers is not the same as monolingual readers and assessments should reveal the linguistic multi-competencies of multilinguals. Assessing languages separately and not considering each language is not recognising the learning trajectory in biliteracy (Hornberger 2004; Ó Duibhir 2018). There is a lack of assessment tools for the assessment of literacy or reading in Irish and existing assessment tools tend not to consider immersion or bilingual learners. Assessments of reading in English are available in the latest Progress in International Reading Literacy Study (PIRLS) (Delaney et al. 2023) and show a rise in reading comprehension performances in English in both jurisdictions in Ireland. Large-scale tests as these need to be interpreted with caution and many factors can skew results. Past results have shown that Irish immersion pupils in RoI outperformed their monolingual peers in English reading (Shiel et al. 2011). But there is no such information for Irish reading. Standardised tests such as The Drumcondra Primary Reading Test-Revised (DPRT-R), have been adapted to Irish and are currently used in Irish immersion schools in both jurisdictions to assess end of year progress. The tests in Irish give a general assessment of reading but do not consider the development of skills or strategies specific to reading in Irish, nor a reader's biliteracy skills. The *Áis Mheasúnaithe sa Luathlitearthacht* (Clay and Nig Uidhir 2006) is an adaptation of Marie Clay's *An Observation of Early Literacy Achievement: Fourth Edition* (Clay, 2019). It is available and used in both jurisdictions as a formative assessment in literacy in Irish and assesses early years reading and Irish reading only. Other methods of assessment in the higher primary classes include observations and listening to reading. Support with other methods of assessment across languages is essential for monitoring reading development and, again, teacher knowledge is vital in this process.

### *Running records*

The Running Record (RR) was developed as part of the *Observation Survey of Early Literacy Achievement* and is a norm-referenced, validated assessment system. It can be used as a sub-test in a range of assessments and analysed in different ways. Observations of a reader's behaviour during reading and analysis of a RR reveal the specific miscues a reader makes as well as displaying the strategies used (Provost, Lambert, and Babkie 2010). Strategy use reflects teaching practice and can also inform instructional needs. RRs can be used in different ways. They can be built into instruction as a daily assessment, as a benchmark assessment or as part of a reading inventory and can be used to support multilingual students. Despite their wide use, little research has been carried out on RRs as an effective method of assessment (Stouffer 2021). RRs have been criticised for lack of accuracy, lack of objectivity, difficulty of comparing texts that may not match in complexity as well as openness to interpretation of reading errors (Blaiklock 2004; Paris 2002). The 95% accuracy threshold assigned as an 'instructional level text' in RRs has also been criticised as limiting with not enough scope for learning (Briceño and Klein 2018; Shanahan 2020). However, studies have revealed that RRs have potential for direct, systematic observations of the reading process when used for a given purpose (D'Agostino et al. 2021). In a multilingual context, RRs have been used effectively in multilingual contexts to garner specific information in second language (L2) reading or reading in an immersion language (Avalos 2003; Bourgoin 2014; Briceño and Klein 2018). Linguistic skills may be still developing for the immersion reader, and a reader may have high literacy skills but low linguistic skills in the L2 that can be highlighted and distinguished in a RR (Briceño and Klein 2018; Jones 2011). Reading words in context in a RR offers more scope for comprehension and strategy use. Also, given how Irish words change in appearance in the grammatical syntax, words in context are an important aspect of word recognition. In reading more than one language, if the mental lexicon required to identify words is integrated across languages (Dijkstra and Van Heuven 2002), RRs have the potential to reveal the processes involved. Text choice is important in RRs. There are no guidelines for books in Irish to ascertain their level of difficulty or benchmark texts for assessment for older primary school children. Assessing the readability of books is problematic in other minority languages with little guidance and a necessity for a framework for reading materials in these settings (Dressler, Nuss, and Mueller 2025; Santini and Jönsson 2020). Publishers, teachers and parents use their own judgement, mostly using a wide age bracket or a general class/grade level, often recommended by a publisher. A flexible and appropriate levelling system or guide for older primary school readers can provide scaffolding for the L2 reader and teacher. In all these aspects of assessment teacher knowledge is vital.

## Materials and methods

### *Research question and assessment tools*

The aim of the study was to investigate the research question: What word recognition skills and strategies do 9- to 11-year-old immersion pupils use when reading in Irish?

It focuses on word recognition strategies in reading in Irish in the context of an immersion setting, where English is the home language (L1) for most of the pupils. To do so Running Records (RR) were administered to all pupils ($n = 159$) to ascertain reading

behaviours as well as to highlight deficiencies in strategy use. They were administered individually with all participants, one by one in all classes. Scores were noted during reading and all readings were recorded for further reference. Pupils who scored low in decoding and/or word recognition were highlighted for a further probe in decoding and/or word recognition. These further decoding and word recognition tests were administered at a later time individually, and scores were noted.

### *Participants*

Two schools were chosen for the study, one from each jurisdiction in Ireland, School A (SA) in RoI, and School B (SB) in NI. The study involved a total of 6 teachers and 6 classes ($n$ = 159), with pupils aged 9–11. The choice of higher primary classes facilitated the investigation of pupils who have a wide literacy experience with more than one language. The choice of two jurisdictions aimed to make the study relevant in other settings. SA described a mix of socio-economic backgrounds, while SB described a more disadvantaged socio-economic background. Urban settings were chosen as well as consistent class sizes at around 30 pupils in each class. Like most immersion schools in Ireland, the majority of pupils in both schools do not speak Irish at home. In both SA and SB more than 50% of pupils typically transfer to an Irish-medium post-primary school, providing an extra incentive for both pupils and teachers to raise standards in reading in Irish. Both schools mainly read novels in Irish and in English with this age-group. SA tended to use a whole class approach to reading, while SB favoured group reading lessons with a differentiated approach. Both schools had experienced professional development on phonics in Irish, and both schools have and use a phonics programme for Irish. SA described using a phonics programme in Irish in early years only, while SB continued with a phonics programme throughout the whole school and a phonics approach was embedded in all classes. Both schools were using the same assessment measures *Triail Ghaeilge Dhroim Conrach do Bhunscoileanna Gaeltachta agus Lán-Ghaeilge* [Drumcondra Irish Reading Vocabulary Test] for Irish reading summatively. Necessary steps were taken, in accordance with the University's ethical guidelines before the study began.

### *Running records*

RRs were adapted to suit the current study. Categories were added to the RR analysis sheets to include possible errors in Irish phonology, grammar or influences from English phonology, highlighting the importance of understanding the effects of biliteracy and multiliteracy on readers (Birch 2015; Reyes 2012). Current RR guidelines state that reading at 95%–100% accuracy is an independent level, 91%–94% is an instructional level and below 90% is a frustration level. These were adhered to. However, criticisms have been taken on board (Briceño and Klein 2018; Shanahan 2020). Additional levels of 85%–90% as possible instructional levels and below 85% were also included to allow a wider scope. Passages from a mixture of unseen fiction and non-fiction texts were chosen for the RR in collaboration with the teachers using available guidelines for levelling in English (Fountas and Pinnell 2017) combined with teacher experience with reading in Irish. It must be noted that what makes a text difficult in English may not be the same in Irish and therefore teacher experience was essential. Assessing the readability of books is

problematic in a minority language, with little guidance and teachers depending on their own experience with books and readers (Dressler et al. 2025). The same texts were chosen for use across all 6 classes, and for different reading abilities in each class. Teachers used results from the schools' standardised assessments to assign levels to each reader and unseen passages were presented for reading as well as specific analysis sheets for each. Assessments such as RRs need to be interpreted and, to do so, teachers need to know the reader, be aware of all the reader's known languages, understand the components as well as links and transfer between those languages.

### *Decoding inventory*

Decoding proficiency progresses through definite stages (Ehri 1995, 2020). Assessing decoding, a constrained skill, can be straightforward with the appropriate tools (McKenna et al. 2017). For the purposes of this study the Informal Decoding Inventory (IDI) (Walpole, McKenna, and Philippakos 2011) was used as a basis. The structure was followed for the Irish adaptation with Part 1 consisting of monosyllabic words, and Part 2 with multi-syllabic words, and five sub-tests in each part. Each sub-test consists of ten real words and ten pseudo-words. In Irish, the sub-tests consist of (i) short vowels[1], (ii) long vowels[2], (iii) two letters/consonants one sound[3], (iv) broad and slender consonants[4], (v) variations of short vowels[5] and (vi) variations of long vowels.[6] Each sub-test has real words and pseudo-words where one sound changes, or minimal pairs, e.g. *balla/barra* (wall/bar). Pseudo-words alongside real words allow readers to display their ability to sight-read as well as their knowledge of spelling patterns stored in memory (Walpole, McKenna, and Philippakos 2011).

### *Word recognition*

Another aspect of the RR is sight-word recognition and determines if readers can read words fluently based on sight knowledge and memory. This usually occurs with the most frequent words in a language. For the purposes of this study Breacadh's (2007) wordlists based on published children's books were used. Children were simply asked to read the words starting at 201–250 most frequent words, as devised in this list, and were moved up or down a category accordingly.

### *Validity and reliability*

To achieve construct validity and criterion validity, assessments were adapted to Irish from previous recommendations (Heale and Twycross 2015). All assessments and texts for this study were piloted with appropriate groups, and all materials and results were discussed with the class teachers. All assessments and analyses were carried out by one person and sample RRs were analysed with participant teachers to ensure a fair and reliable conclusion.

## Results

A total of 6 classes, 4 in SA and 2 in SB, took part in the study ($n = 159$). Classes and pupils were coded, e.g. Class 1 (C1) and Pupil 1 (P1). Analysis of the RRs highlighted pupils with deficient strategy use in each class for a further probe in decoding ($n = 25$) and/or word

recognition ($n = 10$). The specific miscues as well as pupils' skill and strategy use and reading practices in the assessments are described. Table 2 shows the number of pupils from each class who completed each assessment.

### *Scores in running records*

Running Records were carried out with all pupils ($n = 159$). Teachers used the results from standardised tests to assign text levels. Scores are outlined in Table 3. The letters at the top represent the order of difficulty of the sample texts. Total numbers from each class who read at each level are indicated in the grey rows. The number of readers who scored in each category is listed below each total. Scores less than 85% were included to highlight unsuitable text use.

It is initially apparent that younger classes read the lower levels of texts, with some overlap at level V. Most readers in all classes scored between 85% and 94%. In all classes except one, two or three pupils scored 95-100%, a total of 7%. Some pupils scored below 85% ($n = 28$), a total of 18%. A class in SB, SBC1, was described by the class teachers as a weak class. In this class, 10 pupils were assigned a low-level text and 9 of those pupils struggled to read it. The same level was assigned to 3 pupils in SA who scored 85-90%. The highest number of pupils who achieved below 85% accuracy is among those who read the less challenging texts and struggled to read them, emphasising the need for suitable texts for these readers. Given the socio-economic differences between the participant schools, results may also reflect an achievement gap resulting from socio-economic status, and emphasis more acutely the extra supports required (Kennedy 2010). Results highlight the need for scaffolding and more targeted teaching, both at higher and lower levels. The decoding and word recognition probes focus on pupils who scored below 85% and are discussed later.

### *Skill and strategy use in running records*

RRs are useful in two ways. They reveal the miscues a reader makes while reading as well as demonstrating readers' behaviour and applied strategy use while reading. There are few comparisons with other studies using RRs in an immersion context. Briceno and Klein (2018) emphasise the need to distinguish between linguistic related errors and reading errors in analysis. In their study over half the errors were language related. Miscues can be interpreted as involving more than one strategy. For the purposes of

**Table 2.** Total numbers of pupils that completed the Running Records, decoding and word recognition probes.

| Class | Running Records | Decoding | Word recognition |
|---|---|---|---|
| Age 9–10 | | | |
| SAC1 | 25 | 3 | 0 |
| SAC2 | 29 | 5 | 0 |
| SBC1 | 27 | 5 | 3 |
| Age 10–11 | | | |
| SAC3 | 23 | 5 | 3 |
| SAC4 | 26 | 4 | 2 |
| SBC2 | 29 | 3 | 2 |
| Total | 159 | 25 | 10 |

**Table 3.** Number of pupils in each class who read at each level and their scores.

| | | S | T | U | V | W | X | Y |
|---|---|---|---|---|---|---|---|---|
| **Age 9–10** | | | | | | | | |
| SAC1 | Total | / | 13 | / | 12 | / | / | / |
| | below 85% | | 8 | | 0 | | | |
| | 85-90% | / | 4 | / | 6 | / | / | / |
| | 91-94% | / | 1 | / | 4 | / | / | / |
| | 95-100% | / | 0 | / | 2 | / | / | / |
| SAC2 | Total | / | 8 | 11 | 10 | / | / | / |
| | below 85% | | 6 | 3 | 0 | | | |
| | 85-90% | / | 2 | 7 | 1 | / | / | / |
| | 91-94% | / | 0 | 0 | 7 | / | / | / |
| | 95-100% | / | 0 | 1 | 2 | / | / | / |
| SBC1 | Total | 10 | 1 | 7 | 9 | / | / | / |
| | below 85% | 4 | 0 | 0 | 1 | | | |
| | 85-90% | 5 | 1 | 4 | 5 | / | / | / |
| | 91-94% | 1 | 0 | 3 | 2 | / | / | / |
| | 95-100% | 0 | 0 | 0 | 1 | / | / | / |
| **Age 10–11** | | | | | | | | |
| SAC3 | Total | / | / | / | 3 | 2 | 7 | 11 |
| | below 85% | | | | 1 | 0 | 0 | 0 |
| | 85-90% | / | / | / | 2 | 2 | 5 | 5 |
| | 91-94% | / | / | / | 0 | 0 | 2 | 6 |
| | 95-100% | / | / | / | 0 | 0 | 0 | 0 |
| SAC4 | Total | 3 | / | / | 3 | 6 | 7 | 7 |
| | below 85% | | | | | 1 | 1 | 1 |
| | 85-90% | 3 | / | / | 1 | 5 | 4 | 2 |
| | 91-94% | 0 | / | / | 2 | 0 | 0 | 3 |
| | 95-100% | 0 | / | / | 0 | 0 | 2 | 1 |
| SBC2 | Total | / | / | / | 2 | 4 | 8 | 15 |
| | below 85% | | | | 1 | 1 | 0 | 0 |
| | 85-90% | / | / | / | 1 | 3 | 5 | 5 |
| | 91-94% | / | / | / | 0 | 0 | 3 | 7 |
| | 95-100% | / | / | / | 0 | 0 | 0 | 3 |

this study and the analysis, a main strategy was chosen. In RR guidelines, Clay (2019) suggests counting multiple errors with the same linguistic error as one. In the current study, all errors were counted as individual errors to display the frequency of similar errors and for the purposes of analysis, to determine pupil skill and strategy use in detail. Examples, including an example of an omission of a lenition that occurred in the RR in the study are transcribed below.

| Example of visual strategy: | |
|---|---|
| √ √ √ √ ndóndo<br>... agus Peadar féin, ar ndóigh.<br>√ √ √ √ √ √ √ √ | √ √ √ nonsense word*<br>... and Peter himself, of course.<br>*nonsense word, similar initial sound, not looking across the word |
| Example of meaning strategy: | |
| √ √ √ iománaíocht √ √ √<br>Ag caint faoin gcluiche mór a bhí siad. | √ √ √ √ √ hurling*<br>They were talking about the game.<br>*substituted word, makes sense |
| Example of context/syntax strategy: | |
| √ √ √ √ √ √ agus √<br>Chodlaíodh na hainmhithe istigh sa chró a bhí<br>√ √ √ √<br>taobh leis an teach. | √ √ √ √ √ √ √ and* √<br>The animals used to sleep in the shed that was<br>√ √ √<br>beside the house.<br>*addition, still makes sense |
| Ommission of initial lenition in syntax (specific to Irish) | |
| √ √ beirt √ √ fágáil<br>Agus an bheirt eile a fhágáil. | *No equivalent in English*<br>And leave the other two. |

**Table 4.** Breakdown of miscue types and mean scores in the analysis of the Running Records.

| School/ Class | No. of pupils | Mean errors in 100 words per pupil | Mean errors in decoding | Mean errors with substitution | Mean errors substituting English sounds | Mean self-corrections in 100 words per pupil |
|---|---|---|---|---|---|---|
| Age 9–10 | | | | | | |
| SAC1 | 32 | 10.2 | 3.7 | 5 | 0.25 | 0.3 |
| SAC2 | 35 | 10.4 | 4.5 | 5.4 | 0.02 | 1.6 |
| SBC1 | 28 | 11.2 | 4.9 | 5.3 | 0.5 | 2.1 |
| Age 10–11 | | | | | | |
| SAC3 | 33 | 8.3 | 4.4 | 3.4 | 0.30 | 1.5 |
| SAC4 | 29 | 12.2 | 5.8 | 5.7 | 0.4 | 1.1 |
| SBC2 | 29 | 11.1 | 6.1 | 4.5 | 0.3 | 2.8 |
| Total | 159 | 12.3 | 5.7 | 5.6 | 0.3 | 1.8 |

The main miscues were attributed to a decoding deficit or the substitution of a word based on meaning, a word recognition deficit. Reading a word without the lenition or the eclipse was deemed a decoding error, given that the pupils were omitting to read the specific sounds of these words correctly. This was a common error. Other miscues on the analysis sheets; *repeat, omission, insertion, ask for help, teacher assistance, try again,* did not occur often and are not included below. Self-correction is included below to indicate the importance of this as a strategy in reading progression. In both schools, pupils made attempts at words, whether correct or incorrect, perhaps highlighting the advantage of reading continuous text rather than wordlists to make connections. Influence from English was added in recognition of possible transfer in a biliteracy setting. Categories for discussion and their mean scores are included in Table 4.

A total of 1,960 miscues were analysed in the 159 RRs. An example of a recurring miscue is the omission to pronounce a lenited word as written. This occurred multiple times with individual readers, and each occurrence was counted as a miscue. As a result, error rates may seem high, but all miscues need to be viewed in the wider process. The class described as a weak class in SB had more decoding errors than the other classes in the age category and, given that 10 pupils from this class were reading too difficult texts, these pupils were in need of support. Strategy use in the readings was also analysed. A breakdown of mean incidences of strategy use in each class is outlined in Table 5.

The most striking aspect of the results in Table 6 is the lack of structural or syntactic strategies used in Irish reading in both schools and in all classes. SB had higher incidences of this strategy than SA. Syntax development is supported by wide reading and the group reading approach in SB results in pupils reading more books over the school year. This

**Table 5.** A breakdown of mean use of visual, meaning and syntax strategies in each class.

| School/ Class | Total no. of pupils | Mean visual strategy use | Mean meaning strategy use | Mean syntax strategy use |
|---|---|---|---|---|
| **Age 9–10** | | | | |
| SAC1 | 32 | 2.6 | 6.3 | 0.2 |
| SAC2 | 35 | 2.7 | 9.5 | 0 |
| SBC1 | 28 | 5.3 | 6.5 | 0.5 |
| **Age 10–11** | | | | |
| SAC3 | 33 | 4.3 | 5.3 | 0.06 |
| SAC4 | 29 | 4.4 | 8.5 | 0.03 |
| SBC2 | 29 | 8.0 | 5.3 | 0.2 |

**Table 6.** Mean scores of each class in the decoding probe

| | Mean score on real words Satisfactory score 80% | Mean score on pseudo-words Satisfactory score 60% |
|---|---|---|
| Age 9–10 | | |
| SAC1 P1, P2, P3 | 33.3% | 30% |
| SAC2 P1, P2, P3, P4, P5 | 58% | 51.2% |
| SBC1 P1, P2, P3, P4, P5 | 45.6% | 38.4% |
| Age 10–11 | | |
| SAC3 P1, P2, P3, P4, P5 | 58.4% | 48% |
| SAC4 P1, P2, P3, P4 | 67% | 60% |
| SBC2 P1, P2, P3 | 64% | 48.6% |

could be the reason for better syntactical strategies, although improvement is still required. This finding also reflects the idea that context, lexical and syntactical knowledge may still be developing (Briceño and Klein 2018). Pupils in SA tended to use meaning strategies more than visual strategies, implying less use of decoding strategies. The embedded phonics approach in SB is evident. Both classes in SB used their phonics strategies more than their meaning strategies. This indicates some changes since earlier studies by Parsons and Lyddy (2009) and Hickey (2007). However, SA is still over reliant on whole-word strategies.

### *Decoding skills in the decoding inventory*

Pupils who displayed a lack of decoding strategies in the RR were highlighted for the decoding assessment ($n = 25$) or 16% of the total, including SA ($n = 16$) and SB ($n = 9$). More pupils with lower scores in the RR were recommended for the decoding probe than the word recognition assessment and more pupils in SA than in SB were recommended for the decoding probe. This is not surprising given that SB continue phonics lessons throughout the school. In the phonics probe it is suggested that scores of at least 80% on the real words and at least 60% on the pseudo-words are considered typical achievements. The difference is explained by the added advantage that some of the real words may be recognisable from memory and not dependent on decoding skills. Results are on Table 6.

Few pupils scored at the satisfactory levels in each set of words with fewer pupils achieving a score of above 80% on real words ($n = 4$) than those achieving above 60% on pseudo-words ($n = 7$). As described this probe increases in challenge as the reader proceeded with 6 sub-tests of enquiry. Almost half the pupils ($n = 11$) who were designated this probe struggled from sub-test 4 onwards and eventually did not respond, scoring 0 in the final sub-tests. This information was valuable for the teachers who could pinpoint specific areas of need and focus for instruction. It also reflects the Parsons and Lyddy study (2009) with high incidences of nonresponses when reading wordlists without context clues. It also needs to be noted that in an L2, decoding may not result in word recognition when the pupils lack the required vocabulary knowledge to link the sounds with words in their lexicon, indicating a linguistic issue rather than a literacy issue.

### *Word recognition skills*

Pupils were highlighted for the word recognition aspect of the IRI based on performance in the RR and on strategy use ($n = 10$) or 6% of the total. No pupils from SA Class 1 and SA

Class 2 were selected for the word recognition assessment as they used this strategy more than all other classes in the RR. The other pupils in SA made between 7 and 10 errors in the 50 words, while pupils in SB made between 1 and 3 errors. Pupils in SB tended to sound out the words, depending more on decoding strategies than those in SA to read the words in the frame. The decoding strategies, although time consuming, did help the pupils identify words. Pupils in SA tended to insert a similar word, generally a word with a similar initial, demonstrating some phonemic awareness but only with the initial sound, again in accordance with prior research revealing an over-reliance on initial or salient letters (Hickey 2007). This suggests a need for more practice with decoding, phonological awareness and letter-sound correspondences.

## Discussion

The aim of the study was to investigate the word recognition strategies of 9–11-year-old immersion pupils when reading in Irish. A focus on higher primary school classes has revealed the implementation of taught strategies and can highlight some deficiencies prior to transfer to secondary school. Assessments on specific aspects of word identification revealed the skills and strategies used by pupils when reading in Irish and revealed strengths and weaknesses in pupil strategy use. The inclusion of a school in each jurisdiction has provided a wider perspective and differences and commonalities have transpired.

Word recognition strategies were revealed in the assessments and the analysis. Syntax strategies were infrequent in both schools and, as a second language for most pupils, reflect a lack of familiarity with Irish syntax that could be improved with more extensive reading and a wider exposure to the language as well as more explicit teaching. It also suggests the still developing lexical and syntactical knowledge in the L2 (Briceño and Klein 2018). Using meaning as a strategy in the RR was a prevalent strategy, particularly in SA, suggesting an emphasis on word meanings and sight-word skills in reading lessons, rather than decoding. Pupils in SB were more likely to use their phonics knowledge. In SB a phonics approach is embedded in all classes while SA has a focus on phonics instruction in the early years only. More pupils overall were highlighted for the fluency probe than the sight word recognition probe, more in SA than in SB and more in one class in SB that had a large number of struggling readers. Results show that phonemic knowledge is not consolidated for all in the higher primary classes in Irish and that struggling readers need more attention and interventions. This study also highlights the need for appropriate assessments in Irish that, not only recognise pupils' skills in Irish, but also the need to acknowledge their skills and metacognition across their known languages. Teachers also need to distinguish between language related and literacy related inaccuracies in reading in an L2 (Briceño and Klein 2018). This specific teacher knowledge required in bilingual settings to analyse and understand data from assessments and use it effectively is essential (Ascenzi-Moreno 2016).

Teacher knowledge has emerged as a predominant theme in this study and is essential in assessing reading across two or more languages. Curricula in both jurisdictions emphasise word recognition strategies in reading in Irish. There are currently provisions in both jurisdictions for teacher preparation as well as professional development for immersion schools and many opportunities for collaboration across the jurisdictions (Nig Uidhir and Ó Ceallaigh 2023). But there is a lack of guidance for teachers in immersion

schools in Ireland in specific areas such as progression in reading in Irish and across Irish and English, in immersion schools as well as in English-medium schools and many questions remain. A difference in approach to reading was evident in the participant classes in each jurisdiction with whole class reading predominant in SA and group reading in SB. Different approaches to reading in Irish and across Irish and English need to be investigated. Similarly, approaches to phonics instruction need investigation regarding approach, how much time should be spent on phonics in teaching, on appropriate resources and on specific interventions for some learners. This study reveals that different orthographies require different learning strategies. Phonemes are emphasised in English, but much can be learned from other orthographies that may emphasis phonemes or a larger grain size such as morphemes (Branum-Martin, Tao, and Garnaat 2015; Ziegler and Goswami 2006). A similar approach may be more effective in Irish and could perhaps improve strategy use for young readers or extra support for some readers.

Assessing the readability of books is problematic in minority language immersion schools, with little guidance. Teachers use their own discretion in their choice of suitable reading material for immersion pupils. This is an issue in other minority languages with the readability of books in a L2 highlighted and researchers recognising the necessity for frameworks for reading materials for teachers in these settings (Dressler, Nuss, and Mueller 2025; Santini and Jönsson 2020). Another suggested framework is Hornberger's (2004) framework for biliteracy as an effective schema in this context, with facets of multiliteracy along four continua, suggesting different trajectories of development across languages. Such frameworks could provide relevant support for teachers across the jurisdictions in this study and others. It is anticipated that highlighting the strengths and deficits in the teaching and learning of reading in Irish can assist in improvements in knowledge and practice.

### *Limitations*

It must be acknowledged that this study was limited to two schools. The choice of a school in each jurisdiction was an attempt to include a breadth of examples of practice with emphasis on the aims of an immersion approach rather than a specific curriculum. Classes in SA were described as typical for the school, while one class in SB was described as weak and perhaps not representative of the school. In educational research, a range of factors effects teaching and learning. A wider inclusion of other schools and classes could provide a wider perspective on approaches. Different curricula, different texts and approaches to reading could have wider implications in a wider study and a small sample can only reveal practice in these specific schools and classes. A wider trial of all assessments and readability of texts could provide more information and provide reliability data. The decoding inventory was only implemented with a small group of pupils and a wider trial could reveal more information. These limitations provide a basis for the discussion of the results of the study and offer some further explanations.

## Notes

1. muc, cat, bob, le, im
2. lán, túr, mór, sé, sí

3. chas, thóg, mhol, cath
4. sa/sí, rís/rás, déan/dán
5. fliuch, geal, bris
6. súil, luí, páirc

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## Disclosure statement

No potential conflict of interest was reported by the author(s).

## Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

## Ethical approval

Ethical approval has been received in accordance with Dublin City University ethics and integrity policies, REC Reference: DCUREC/2017/192.

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