



DYSLEXIA IN THE IRISH-MEDIUM AND GAELTACHT CONTEXT: CONSIDERATIONS FOR EDUCATORS

This article reviews key research on dyslexia for educators, focusing on definitions, the suitability of Irish-medium and Gaeltacht schools for students with dyslexia, identifying dyslexia in bilinguals, and providing support within these educational settings. Using a narrative review approach, the study emphasises bilingual contexts. The weight of evidence suggests that immersion schools are suitable for students with dyslexia, though outcome studies are needed in the Irish-medium (IM) context. The review highlights the development of assessment tools tailored for IM and Gaeltacht settings and discusses the integration of evidence from multiple assessment sources. While international research offers valuable insights into literacy support, further studies are needed to assess how well these findings apply within Irish-medium education contexts.

Keywords: Dyslexia, immersion, Irish, bilingual, literacy.

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INTRODUCTION

Dyslexia is the most common additional educational need in Irish-medium schools at both primary (Nic Aindriú et al., 2020) and post-primary (Nic Aindriú, in press) level. This article aims to provide a focused review of the literature to address key questions that practitioners frequently encounter.

This review takes the form of a narrative literature review, exploring the themes related to dyslexia and additional educational needs which are the focus of this article. Unlike systematic reviews, which offer an exhaustive analysis of research on a specific question, this review provides a targeted synthesis of information (Sukhera, 2022) that is particularly relevant for practitioners within the IM and Gaeltacht context. The databases searched were EBSCOhost, Taylor & Francis, Springer and PsycINFO. The keywords used in the review were strategically selected based on relevant theoretical frameworks. For example, Frith's (2001) framework guided the selection of terms related to the definition of dyslexia, such as "dyslexia" AND "genetic" OR "neurobiological" OR "cognitive" OR "behavioural" OR "environmental". Articles were selected for the robustness of their methodological rigour as well as, where possible, their applicability to the Irish context. The review includes primary research articles, review articles, and practitioner-oriented resources, including books and handbooks. The references of relevant articles were also examined to identify sources. There are several limitations to the present article; these include that the review is not comprehensive or exhaustive, as well as the lack of research derived from the IM and Gaeltacht context to inform the review.

Regarding terminology, this article adopts person-first language (e.g. "a person with dyslexia"), and refers to dyslexia as a learning difference, though it is recognised that language preferences vary among individuals (AHEAD, 2024).

WHAT IS DYSLEXIA?

Dyslexia is a learning difference characterised by challenges in word recognition and spelling, resulting in lower reading fluency and/or accuracy than is typical for readers of the same age (Vellutino et al., 2004; Peterson & Pennington, 2015). Dyslexia may involve difficulties in information processing and organisation skills (British Dyslexia Association, 2024), and often co-occurs with a number of other learning differences, most notably ADHD and specific language impairment (Peterson & Pennington, 2015). Dyslexia is a heritable trait; children who have a parent with dyslexia have a 40-60% probability of having dyslexia, and this likelihood further increases if other members of the family are dyslexic (Schumacher et al., 2007). Importantly for educators, this genetic component means that family history can assist in identifying dyslexia. While individual studies have identified particular strengths such as creativity (Bigozzi et al., 2016) and certain visual-spatial tasks (Duranovic et al., 2015), a recent review of the literature suggests that findings are inconsistent (Odegard & Dye, 2024). Though people with dyslexia undoubtedly have strengths, these strengths vary from person to person, and are not expected to be the same for everyone with dyslexia (Odegard & Dye, 2024).

Importantly, factors in the classroom environment – discussed below - which teachers have control over can affect a person's experience of dyslexia. Central to any learning process is motivation, which is often shaped by social factors (Eccles & Wigfield, 2020). Therefore, creating a supportive learning environment that aligns with a child's interests is paramount. Additionally, the attitudes of educators themselves play a significant role, as positive attitudes have been shown to predict better literacy outcomes for students (Hornstra et al., 2010). A further environmental factor is the methods of literacy instruction used. For example, phonics methods of literacy instruction led to higher attainment than other methods which are not rules-based (Galuschka et al., 2014). Phonics approaches should be used as part of a balanced approach to literacy instruction, along with other effective literacy instruction techniques which will be explored later in this article.

IS IRISH-MEDIUM EDUCATION SUITABLE FOR CHILDREN WITH DYSLEXIA?

This section reviews research on the suitability of immersion education for those with dyslexia, focusing on international research on literacy-related outcomes and Irish research on the perceptions of stakeholders. At present, there is no comparative research in the Irish context on literacy outcomes; however, international research (see Genesee & Fortune, 2014 for a review), provides valuable insights. Evidence from French-immersion programmes in Canada indicates that there is no significant difference between the reading attainment of students with additional educational needs (AEN) in French immersion programmes compared to their peers in English-medium schools (Genesee, 1978) and that students who transfer to English-medium schools do not make more progress than their peers who stay in immersion schools (Bruck, 1985). In the North American context, students with AEN in two-way (Spanish-English) immersion programmes have the same attainment on English standardised assessments as their peers in English-medium programmes (Myers, 2009), and another found that immersion students outperformed their English-medium peers in reading and maths (Thomas & Collier, 2010). It is worth noting, however, that more recent research is needed, specifically with students with dyslexia to extend these findings. Current evidence suggests that while people with dyslexia typically have lower literacy attainment than their peers without dyslexia in both of their languages (Morfidi et al., 2007), they still manage to become literate at a level comparable to their English-medium peers with dyslexia, with the advantage of being bilingual.

With regard to stakeholder attitudes, research in the Irish context demonstrates largely positive attitudes towards the participation of students with AEN in IM education (Patton & Mathews, 2020; Nic Aindriú & Ó Duibhir, 2023). The vast majority of principals in IM schools believe that students with AEN, including dyslexia, perform as well as, or better than, they would in English-medium schools (Patton & Mathews, 2020). Principals highlight key challenges to inclusion, such as the limited focus on these areas in initial teacher education and the lack of research specific to the Irish context to underpin such education. Additionally, principals express concerns about the extent to which decisions made by stakeholders recommending a transfer to an English-medium school are evidence-based, rather than personal opinions (Nic Aindriú, in press; Patton & Mathews, 2024). Interestingly, parents of children with AEN do not view language as a barrier, and some identify benefits of immersion education, such as creating future opportunities for their children (Nic Aindriú & Ó Duibhir, 2023).

From a linguistic perspective, one of the most pertinent factors affecting literacy acquisition in alphabetic writing systems is orthographic depth. Orthographic depth is a measure of how complex and inconsistent a writing system is (Katz & Frost 1992). It is often thought of as a continuum, with transparent orthographies such as Spanish to opaque orthographies such as English (Ziegler et al., 2010). The orthographic depth of a language significantly affects the time it takes to become literate in a language (Seymour et al., 2003). Orthographic depth also plays a key role in how dyslexia manifests. In languages with complex orthographies, such as English, dyslexia typically affect both reading accuracy and fluency (e.g. Vellutino et al., 2004). In contrast, in more transparent orthographies like Spanish, dyslexia is most often characterised by slow but accurate reading (Serrano & Defior, 2008). While Irish has a relatively complex writing system (i.e. it has many spelling rules), it is much more consistent than English (i.e., it adheres to the rules) (Stenson & Hickey, 2016). In order to take advantage of the consistency of the orthography, however, it is necessary to be familiar with the spelling-sound rules.

The language of schooling is just one of many factors which impact school choice. Previous research highlights the importance of social factors – including teachers' attitudes and expectations of students, and the presence of good peer support – as factors central to dyslexic students' experience of schooling (Gibson & Kendall, 2010). In light of this, the effect of recommending a transfer to an English-medium school on students' academic self-concept – as well as their existing peer group support – are additional factors which should be considered.

HOW CAN DYSLEXIA BE IDENTIFIED IN BILINGUAL STUDENTS?

The Continuum of Support (DES, 2007) recommends that teachers gather a variety of evidence to help identify student needs. This evidence should come from several sources: classroom-based data (e.g. assessment results, observations, work samples), the student’s perspective (insights into their challenges and possible strategies for support), the parents’ perspective (their view of the child’s development and suggestions for support), as well as other relevant information (e.g. reports from previous schools). Best practice suggests that bilingual students should be assessed in both of their languages (Murphy & Travers, 2012; de Villers, 2015), with findings interpreted in relation to the amount of experience they have in each language.

There are several Irish language screening assessments currently available or under development. These include the *Áis Mheasúnaithe sa Luathlitearthacht* (Clay & Nig Uidhir 2017) and a bilingual whole class screener of literacy (Barnes & Ó Duibhir, 2023). In addition, a standardised early literacy screener in Irish, the Diagnostic Test of Early Literacy, is currently being developed by the Educational Research Centre (ERC, 2024). For those in the post-primary context, the *Measúnú agus Diagnóisic don Iar-bhunscoil – Gaeilge* is being standardised by the ERC in September 2024 (ERC, 2024) with the prospect of being available to all schools in the coming years.

While screening tests provide a snapshot of a student’s skills at a specific moment in time, collecting work samples over an extended period offers a more comprehensive view of their development (Reid, 2009). When analysing work samples, examining the types of errors made can yield valuable insights to guide literacy support. Spelling errors, for instance, can be categorised as phonological, orthographic, or morphological (Silliman et al., 2006; see Table 1 for Irish examples). For older students, assessing features such as sentence length, the number of clauses within a sentence and the accuracy of punctuation may also be informative. Discrepancies between a student’s oral and written language skills may indicate reading challenges (Reid, 2009), given adequate literacy instruction in the language. To explore this, teachers can ask a child to narrate a story on a given topic and then write a similar story, allowing for a comparison between the two. One way to do this is ask students to narrate a story based on 4 pictures depicting an event, and then ask them to write a story based on a similar set of pictures (Fey et al., 2004). Teachers can evaluate the story quality (e.g. content and structure) as well as linguistic factors (e.g. vocabulary richness, grammatical accuracy, sentence length) (Fey et al., 2004).

Table 1. Examples of phonological, orthographic and morphological errors in the Irish language

Phonological errors	Letters do not accurately represent corresponding sounds	e.g. <dal> for <i>dubh</i>
Orthographic errors	Letters accurately represent sounds, though the spelling is atypical	e.g. <dumh> for <i>dubh</i>
Morphological errors	Errors relating to prepositions, accurate conjugation of verbs etc.	e.g. <ar Seán>

Several observational checklists designed for English-speaking contexts can be adapted for use with Irish-English bilingual students. Examples include Hannell’s (2013) checklist, which features statements related to language and literacy skills, memory, and motivation, as well as Tod’s (2000) checklist focuses on student behaviour, literacy practices, and academic attainment. Additionally, Reid’s (2009) checklist offers a comprehensive evaluation of executive function (e.g., attention, organisation, and sequencing skills), language and literacy abilities, self-concept, and learning preferences. When adapting these checklists for IM education, language and literacy statements (e.g. “often has difficulty sounding out words”) need to be assessed in both English and Irish to accurately reflect students’ bilingual abilities and behaviours.

In some cases, students may be referred to educational psychologists for a formal diagnosis. As there are currently no dyslexia diagnostic tools available in Irish, assessments are typically conducted using English-language versions (Nic Aindriú et al., 2021; Murtagh & Seoighe, 2022). Results and reports based on these assessments should be interpreted with caution. Research indicates that students in IM schools initially lag behind their peers in English literacy during the early years of schooling, but generally catch up by Second Class (fourth year of schooling) (Parsons & Lyddy, 2016). However, it is important to note that this finding applies to the group as a whole - individual students may catch up faster or slower depending on their learning pace. This lag affects the extent to which students in IM and Gaeltacht schools can be compared to norms for English-medium students. In addition to the challenge of accurate norms, evaluating attainment in just one of a bilingual’s languages provides only a partial picture of their attainment (Murphy & Travers, 2012).

Where possible, it is advisable to select an educational psychologist with expertise in bilingual development (Nic Aindriú & Ó Duibhir, 2023; Murtagh & Seoighe, 2022). There is still evidence of some educational psychologists providing recommendations which are not evidence-based or aligned with current research findings on bilingualism (e.g., Patton & Mathews, 2024; Nic Aindriú & Ó Duibhir, 2024). Note that the National Educational Psychological Service (NEPS) have a Gaelige (Irish) working group with specific expertise in this area in both IM and Gaeltacht schools.

HOW CAN STUDENTS WITH DYSLEXIA BE SUPPORTED?

Supporting students with dyslexia requires attention not only to the linguistic and cognitive aspects of literacy but also to the social, cultural, motivational, and emotional dimensions. This includes considering factors such as family literacy programmes, whole-school culture, and creating a supportive classroom environment (e.g. Au & Raphael, 2011; Brown et al., 2018). Equally important are approaches that nurture students' motivation by offering opportunities for success and making reading an enjoyable experience, given the relationship between motivation and literacy attainment (Morgan & Fuchs, 2007). These factors are important for all readers, but particularly for students with dyslexia, who often have higher levels of anxiety and lower self-esteem than their peers (Novita, 2016). A strengths-based approach focussing on areas in which the child excels – as opposed to areas of low attainment – is recommended (Rappolt-Schlichtmann et al., 2018). The handbook *Scéalta den Scoth: ag cothú fonn léitheoireachta* (Dunne, 2024) offers valuable suggestions for fostering a positive and engaging literacy environment while also developing critical literacy skills.

The brief review below centres on the linguistic and cognitive components of literacy, particularly effective strategies within literacy programs designed for readers with dyslexia. Most of the research is based on English-language contexts, and further studies are needed to assess the relevance of these findings in the Irish context. For practical strategies to enhance the skills discussed below, refer to Hickey and Stenson's (2019) and Dunne's (2024) handbooks.

When considering early reading skills, phonemic awareness interventions have been shown to be more effective for younger readers compared to older ones (Ehri et al., 2001a; Ehri et al., 2001b). These interventions are particularly impactful when letters are included to provide a concrete representation of sounds (Ehri et al., 2001a). In bilingual settings, explicit, language-specific instruction is often necessary to develop phonemic awareness in a second language (Barnes et al., 2024). While certain phonemic awareness skills can be expected to transfer across Irish and English (the skill of deletion, blending or segmenting phonemes), others need to be taught in each language (the skill of differentiating between the individual sounds of a language, for example, being able to indicate that the first sound in the word *capall* and last sound in *bealach* are different) (Barnes et al., 2024). Building on this foundation, structured phonics programs are effective in enhancing reading accuracy (Ehri et al., 2001b).

Beyond phonemic awareness, morphological awareness is another important skill that supports reading and spelling. This involves recognising the smaller components that make up a word. For example, the word *míchairdiúil* 'unfriendly' consists of the prefix *mí*, the base noun *caird[e]*, and the suffix *-iúil*, which indicates that the word is an adjective. In Irish, morphological awareness also includes understanding concepts like lenition (e.g. a teach), eclipsis (e.g. a dteach), and noun cases (e.g. bean an tí). A sequenced approach can be taken to developing morphological awareness, and The Primary Language Curriculum provides guidance on when awareness of each feature typically develops. Research shows that enhancing morphological awareness can effectively improve the spelling skills of dyslexic students (Arnbak & Elbro, 2000). While certain aspects of morphological awareness can be expected to transfer across languages (e.g. understanding what a noun, adjective, prefix or suffix is), others need language-specific instruction (e.g. knowing that the consonant of the second word in a compound word such as *seanbhean* must be lenited).

Moving on towards text-level reading skills, developing a sight word vocabulary is key to becoming a fluent reader. Sight words are words that do not need to be decoded, and instead are read effortlessly from memory as a whole word. Readers with dyslexia need extensive opportunities to read a word in order to store it as a sight word (Share and Shalev, 2004). The *Cód na Gaeilge* games (CCEA, 2024) provide a good platform for students to develop a sight word vocabulary in an enjoyable way. Reading fluency can also be enhanced through repeated reading, a strategy that is especially effective when corrective feedback is provided (Therrien, 2004). This technique involves rereading a short text until a target reading rate is achieved (Meyer & Felton, 1999). Note that this type of task may not suit all students due to its repetitive nature, and more engaging alternatives can be found in Dunne (2024).

Students with dyslexia do not struggle with oral language comprehension, unless there is a co-occurring language impairment (Robertson & Joanisse, 2010), so reading comprehension challenges likely stem from decoding and fluency issues. Nevertheless, explicitly teaching comprehension strategies is recommended, as recent research in the Irish context (de Brún, 2022) highlights this as an area in which teachers' practice is in need of development. Examples of reading comprehension strategies include questioning, activating prior knowledge, summarising, predicting and

clarifying (see Educational Endowment Foundation, 2021). A robust oral vocabulary may compensate for reading comprehension difficulties in dyslexic readers (Cavalli et al., 2016), and as such it is worth spending time developing the depth and breadth of students' vocabularies.

Assistive technologies can be another source of support for students with dyslexia. A sociotechnical view of assistive technology – one which emphasises the person, the environment and the available technologies - should be taken when choosing the most suitable technologies (Wynne et al., 2016). Assistive technologies which may be useful for those with dyslexia are reviewed by Nic Aindriú (this issue). Successfully incorporating assistive technologies requires thoughtful consideration. One tool which is useful to guide the process is the SETT (Student, Environment, Tasks, Tools) framework by Zabala (2020) which supports stakeholders in selecting appropriate assistive technologies.

CONCLUSION

Dyslexia is a learning difference that affects reading and/or spelling attainment and often co-occurs with other traits such as ADHD. The weight of evidence suggests that immersion education is suitable for students with dyslexia, provided the necessary resources are available. Progress has been made in relation to dyslexia screening tests, though Irish language tools for educational psychologists to formally diagnose dyslexia are still needed. Supporting students with dyslexia requires focusing on literacy as a social, cultural and emotional, as well as a linguistic and cognitive skill. There are high quality, research-informed resources available to educators, as well as a growing range of Irish language technologies to assist students. Key areas for future research include outcome studies of students with dyslexia in Irish-medium and Gaeltacht schools, as well as research on the efficacy of different types of intervention in the Irish-medium and Gaeltacht context.

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