



An Roinn Oideachais
Department of Education



Institiúid Oideachais
Institute of Education

Pedagogical Strategies, Approaches and Methodologies to Support Literacy and Digital Literacy Development for Gaeilge and EAL

A Review of the Literature

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Suggested Citation

Concannon-Gibney, T., de Brún, J., Ní Dhiorbháin, A., Ní Láimhín, M., & Ó Duibhir, P. (2022). *Pedagogical strategies, approaches and methodologies to support literacy and digital literacy development for Gaeilge and EAL*. Department of Education (Ireland).

Pedagogical strategies, approaches and methodologies to support literacy and digital literacy development for Gaeilge and EAL

Tara Concannon-Gibney, Jacqueline de Brún, Aisling Ní Dhiorbháin, Máire Ní Láimhín, Pádraig Ó Duibhir

Summary of findings: Gaeilge

Student engagement in meaningful oral language, reading and writing in a variety of genres in Irish, making explicit links between the reading and the writing process, has proved effective (DES, 2016b; Fitzpatrick et al., 2018; Hickey & Stenson, 2017; Al-hajji & Shuqair, 2014; Ní Mhaonaigh, 2013, 2017). Task based language teaching and CLIL incorporated into the teaching of Irish and communicative language teaching should be balanced with analytical approaches to teaching (Fitzpatrick et al., 2018; Gil-López et al., 2021; Graham et al., 2018; Harris & Ó Duibhir, 2011; Hood, 2020; Ioannou-Georgiou et al., 2011). Explicit teaching of grammar in context, using deductive and inductive approaches, is particularly warranted for learners when there is limited use of the target language outside of school (Fitzpatrick et al., 2018; Goo et al., 2015; Kang et al., 2018). Immersion education programmes have been shown to be very effective in producing biliterate bilingual minority language speakers (Fitzpatrick et al., 2018; Genesee, 2022; Ó Duibhir, 2018; Wilson et al, 2022). This finding applies to learners with diverse learning needs (Genesee, 2022) and from all social backgrounds (Ní Chlochasaigh et al., 2021). Increasing the numbers of students attending Irish-medium schools from the current 8% at primary and 4% at post-primary would generate a greater number of active bilingual speakers in society. Students should be exposed to a wide range of books and texts including digital books to support bi-pluriliteracy. All parents should be encouraged to read in Irish to their children and this could be supported by technology. Information/expository texts are especially beneficial for vocabulary development in the L2. Big books are a very valuable resource for shared reading and should focus on the specific language needs of L2 learners (Mhic Mhathúna, 2010; Wang, 2011). Glossed reading with careful use of L1 may support reading in Irish (Yanagisawa et al., 2020; Ramezanali et al., 2021). Students should engage in the writing process and have opportunities to write collaboratively in Irish which allows for negotiation of both meaning and form, and opportunities to discuss language (Elabdali, 2021; Lu & Kim, 2021). Texts for group and individual reading have benefits for extensive reading for L2 readers when texts are at a suitable level.

Students should learn spelling rules in Irish and compare word patterns in Irish with English and other languages (DES, 2016b; Stenson & Hickey, 2019). Irish is a morphologically rich language and more emphasis on the morphology of Irish in teaching and learning could prove beneficial (Barnes, 2017). Teachers should assess spelling regularly on a termly basis by administering a developmental spelling test which can provide qualitative information about students' orthographic knowledge (DES, 2016b). Weekly spelling tests, on the other hand, do not support differentiated learning and teachers should assess spelling in sentences and written work and focus on teaching spelling rules and patterns in words (DES, 2016b; Stenson & Hickey, 2019).

Teacher competency and exposure to L2 are critical factors in effective language teaching. Teachers' Irish qualifications, including CLIL, should be embedded in the Common European

Framework of Reference for Languages (CEFR) (Fitzpatrick et al., 2018; Gallagher & Ní Mhaonaigh, 2009; Marsh et al., 2011; Ní Dhiorbháin & Ó Duibhir, 2021). Professional development and teacher education should focus on teachers' linguistic knowledge in Irish as well as their pedagogical content knowledge, including transfer of skills across languages (Ní Dhiorbháin & Ó Duibhir, 2021; Ní Mhaonaigh, 2013, 2017; Ó Ceallaigh et al., 2017; Ó Ceallaigh et al., 2019). CLIL and Irish-medium teachers need support in integrating language with content through successful pedagogy (Tedick & Lyster, 2020; Ó Ceallaigh et al., 2017; Ó Ceallaigh et al., 2019).

School leaders play a key role in effective language learning by, (i) fostering a plurilingual approach to students' learning in Irish, English, Home and foreign languages, (ii) promoting the informal use of Irish and CLIL in L2 settings, (iii) adopting a whole school approach in Irish-medium settings to support students' social and academic use of Irish and forging links between schools, community and homes (DES, 2016a; Ó Ceallaigh & Ní Shéaghadha 2017).

Flipped learning where learners engage with content before class may enhance students' learning of Irish. Teachers should promote self-directed and autonomous learning in Irish (Bond, 2020; Vitta & Al-Hoorie, 2020). Computer assisted language learning (CALL), mobile assisted language learning (MALL), digital game-based language learning (DGBLL), have been effective in improving the L2 learning experience and outcomes (Burston, 2015; Cheng et al., 2020; Fu, 2018; Lin & Lin, 2019; Peng et al., 2020; Persson, 2018; Sung et al., 2015). Digital resources with clear language learning goals should be developed and carefully implemented in the context of Irish.

Students with additional needs should not be excluded from learning Irish (Genesee, 2022; Sparks, 2016; von Hagen et al., 2021). Teaching, learning and assessment should be differentiated to support all students in learning Irish in an inclusive fashion (Nic Aindriú, 2021). Rote learning for examinations in Irish at secondary level should be discouraged (Nic Eoin, 2017; Ní Mhaonaigh, 2013; 2017; Ó Curraoin, 2017; Ó Laoire, 2017). Oral and written assessments should be revised to encourage students to use their communicative language skills and assessment should be embedded in the CEFR. Students who are bilingual should be assessed bilingually and early intervention should not be delayed (Barnes, 2017; Genesee, 2022; Mhic Aoidh, 2017).

Recommendations: Gaeilge

Pillar 1: Enabling Parents & Communities

- **Forge strong links between the use of Irish at home, school and in the community** to increase the use of Irish particularly in all Irish-medium and Gaeltacht settings (DES, 2016a, Hickey & de Mejía, 2014; Ó Duibhir, 2018; 2017). Encourage parents to read in Irish to their children and this could be supported by technology (Stenson & Hickey, 2019).

Pillar 2: Teachers and ECEC CPD (Teacher Education)

- Embed language teacher competency in the Common European Framework of Reference for Languages (CEFR) to provide a standardised and transparent way of measuring teachers' language skills (Gallagher & Ní Mhaonaigh, 2009; Marsh et al., 2011; Ní Dhiorbháin & Ó Duibhir, 2021) as Irish language competence is paramount to effective language teaching (Fitzpatrick et al., 2018).

- Focus teacher professional development and teacher education on teachers' linguistic knowledge and pedagogical content knowledge including transfer of skills across languages (Ní Dhiorbháin & Ó Duibhir, 2021; Ní Mhaonaigh, 2013, 2017; Ó Ceallaigh et al., 2017; Ó Ceallaigh et al., 2019). CLIL and Irish-medium teachers need support in integrating language with content through successful pedagogy (Tedick & Lyster, 2020; Ó Ceallaigh et al., 2017; Ó Ceallaigh et al., 2019).
- Professional development and teacher education should focus on teachers' linguistic knowledge in Irish (competence, decoding, etc.) as well as their pedagogical content knowledge including transfer of skills across languages (Ní Dhiorbháin & Ó Duibhir, 2021; Ní Mhaonaigh, 2013, 2017; Ó Ceallaigh et al., 2017; Ó Ceallaigh et al., 2019). CLIL and Irish-medium teachers need support in integrating language with content through successful pedagogy (Tedick & Lyster, 2020; Ó Ceallaigh et al., 2017; Ó Ceallaigh et al., 2019).

Pillar 3: School and ECEC leadership

- School leaders should support a plurilingual approach to language teaching (Little & Kirwan, 2019). The informal use of Irish and CLIL through Irish must be supported by leaders in English-medium settings to increase students' exposure to Irish and to improve their linguistic skills in Irish (Fitzpatrick et al., 2018; Gil-López et al., 2021; Graham et al., 2018; Harris & Ó Duibhir, 2011; Hood, 2020; Ioannou-Georgiou et al., 2011). School leaders in Irish-medium settings should adopt a whole school approach to supporting students' social and academic use of Irish (Ó Ceallaigh & Ní Shéaghadha 2017), and forge links between schools, community and homes (DES, 2016a)

Pillar 4: Curriculum and the learning experience

- Incorporate task-based language teaching (Bryfonski & McKay, 2019; Flynn, 2021; Tavakoli & Jones, 2018) and CLIL into the teaching of Irish and communicative language teaching should be balanced with analytical approaches to teaching (Fitzpatrick et al., 2017; Harris & Ó Duibhir, 2011).
- Increase the number of students in Irish-medium immersion programmes to produce greater numbers of biliterate bilingual speakers (Fitzpatrick et al., 2018; Harris & Ó Duibhir, 2011).
- Provide students with opportunities to engage in meaningful oral language, reading and writing in a variety of genres in Irish making explicit links between the reading and the writing process (DES, 2016b; Fitzpatrick et al., 2018; Hickey & Stenson, 2017; Al-hajji & Shuqair, 2014; Ní Mhaonaigh, 2013, 2017). Students should be exposed to a wide range of books and texts including digital books to support bi-pluriliteracy (Ducura & Rozo, 2018). Research has revealed that information/expository texts are especially beneficial for vocabulary development in the L2 (Sorrell & Brown, 2018). Glossed reading with careful use of L1 (Yanagisawa et al., 2020; Ramezanali et al., 2021) may support reading in Irish. Strategy training (e.g planning, cognitive and meta-cognitive strategies), and creating a suitable environment can improve L2 writing performance (Raofi et al., 2014).
- Engage students in the writing process and have opportunities to write collaboratively in Irish which allows for negotiation of both meaning and form, and opportunities to discuss language (Elabdali, 2021; Lu & Kim, 2021). Texts for group and individual reading have benefits for extensive reading for L2 readers when texts are at a suitable level (Al-hajji & Shuqair, 2014; Cole, 2014).
- Students should learn spelling rules in Irish and compare word patterns in Irish with English and other languages (DES, 2016b; Stenson & Hickey, 2019). Irish is a morphologically rich language and more emphasis on the morphology of Irish in teaching and learning could prove

beneficial (Barnes, 2017).

- Teach L2 grammar explicitly as there is limited use of the target language outside of school as in the case with Irish. Deductive and inductive approaches to teaching grammar (Fitzpatrick et al., 2018; Goo et al., 2015; Kang et al., 2018) are effective.
- Flipped learning where learners engage with content before class (Bond, 2020; Vitta & Al-Hoorie, 2020) may enhance students' learning of Irish. Teachers should promote self-directed and autonomous learning in Irish (Nic Eoin, 2017; Ó Laoire, 2017).
- Computer assisted language learning (CALL) (Bibauw et al., 2019; Plonsky & Ziegler, 2016), Mobile assisted language learning (MALL) (Burston, 2015; Cheng et al., 2020; Fu, 2018; Lin & Lin, 2019; Peng et al., 2020; Persson, 2018; Sung et al., 2015), digital game-based language learning (DGBLL) (Acquah et al., 2020; Dehghanzadeh et al., 2019; Hao, 2021; Tsai & Tsai, 2018) have been effective in improving the L2 learning experience and outcomes. Digital resources with clear language learning goals should be developed and carefully implemented in the context of Irish.
- Big books are a very valuable resource for shared reading and should focus on the specific language needs of L2 learners (Mhic Mhathúna, 2010; Wang, 2011).

Pillar 5: Students with additional learning needs

- Do not exclude students with additional needs from learning Irish (Genesee, 2022; Sparks, 2016; von Hagen et al., 2021). Teaching, learning and assessment should be differentiated to support all students in learning Irish (Nic Aindriú, 2021).

Pillar 6: Assessment and evaluation

- Discourage rote learning for examinations in Irish at post-primary level. Oral and written assessments should be revised to encourage students to use their communicative language skills and assessment should be embedded in the CEFR (Nic Eoin, 2017; Ní Mhaonaigh, 2013; 2017; Ó Curraoin, 2017; Ó Laoire, 2017). Students who are bilingual should be assessed bilingually and early intervention should not be delayed (Barnes, 2017; Mhic Aoidh, 2017).
- Spelling tests do not support differentiated learning and teachers should assess spelling in sentences and written work and focus on teaching spelling rules and patterns in words (DES, 2016b; Stenson & Hickey, 2019). Developmental spelling tests should be administered on a termly basis to provide information about students' orthographic knowledge (DES, 2016b).

Summary of findings: EAL

A positive plurilingual environment in schools and classrooms can enhance EAL learners' English language proficiency. It is helpful to make significant use of translanguaging in lessons and across the school day. The teaching that EAL pupils encounter in the classroom should take account of the cultural knowledge and lived experiences that they bring to the classroom (Cole, 2013; Dixon et al., 2012; Jun, 2013; Kirwan & Little, 2021; Mallows, 2012; Melby Verlag, 2011).

Metacognitive strategies and specific language learning strategies are an important part of EAL instruction. Strategy instruction is most effective when it is used at a low-intensity level for longer periods and have the most significant impact on speaking skills (Alsowat, 2020; Ardasheva et al, 2017; Jun, 2013; Plonsky, 2011).

Peer supported social learning contexts are effective in enhancing EAL pupils' English language proficiency. The use of unsegregated environments where EAL pupils receive support while working with native speaking peers in collaborative contexts to build understanding are recommended (Adescope et al, 2011; Bowman-Perrott et al., 2016; Cole, 2013; Pyle et al, 2017; Sutter, 2012). Digital tools can be used in this context to promote interaction, communication and problem-solving amongst pupils (Macaro et al., 2012; Parmaxi, 2020; Pinto et al., 2012).

Explicit vocabulary instruction and targeted oral language practice has been found to yield language gains for EAL learners. However, explicit word learning is most effective when complemented with implicit word learning strategies and opportunities to encounter new vocabulary in a variety of contexts to ensure repeated exposure (August, McCardle & Shanahan, 2014). Variety in instructional activities was deemed a key aspect of effective vocabulary instruction. Approaches that included non-verbal supports such as gestures, pictures and sounds or the use of digital tools were found to be helpful in enhancing vocabulary knowledge (Lawson-Adams & Dickenson, 2019; Proctor et al, 2005; Webb & Nation, 2017; Uchichara, Webb & Yanagisawa). Grammar knowledge is best developed through a combination of explicit and implicit approaches, with the most attention given to implicit teaching (Kang, Sok & Han, 2019). The use of recasts in grammar instruction are helpful when used in conjunction with other techniques (Miller, Chamness & Wei, 2012). Task based learning was found to be more effective than more traditional grammar activities (Bryfonski & McKay, 2019). Digital tools can be effective in the context of task-based learning to enhance vocabulary and grammar (Persson & Nouri, 2018). The quality of teacher talk is a critical variable in EAL language instruction. It is recommended that teacher talk be comprehensible to EAL pupils through slowing the pace of speaking, differentiating vocabulary used and maximising the opportunities for pupil talk and interaction in lessons (Cregan, 2019; Delcenserie et al, 2019; Justice et al., 2018; Ó Duibhir & Cummins, 2012; Pang, 2019).

EAL pupils can learn to read and write in English before reaching a threshold of English oral language proficiency level so instruction should integrate reading, writing, speaking and listening from the beginning (Jun, 2013; Ludwig, Guo & Georgiou, 2019). Interventions that include multiple components are most effective in enhancing reading proficiency with the exception of vocabulary which can be beneficial as a separate, targeted intervention (Silverman et al, 2020; Snyder, Witmer & Schmitt, 2017). EAL pupils benefit from explicit instruction in phonological awareness, phonics, vocabulary, oral reading fluency, reading comprehension and morphology (August, McCardle & Shanahan, 2013; Goodwin & Ahn, 2013). In intervention settings, pupils benefit from small group instruction that are formed according to instructional needs. Extensive reading and shared reading are recommended for improving reading outcomes of EAL pupils (Baker et al, 2014; Ludwig et al, 2019).

Reading and writing have a reciprocal relationship that should be emphasised in teaching EAL pupils. Feedback is an important element of writing instruction for EAL pupils, with written feedback being particularly helpful in enhancing writing development (Biber, Nekrasova & Horn, 2011, August, McCardle & Shanahan). Collaborative writing practices that are combined with explicit teacher instruction have been found to increase EAL writing achievement (August, McCardle & Shanahan, 2013; Lu & Kim, 2020). Traditional writing practices can be combined with digital multimodal composition for the benefit of EAL pupils' writing proficiency (Smith, 2021).

Recommendations: EAL

Pillar 1: Enabling Parents & Communities/Pillar 3: School and ECEC leadership

- Schools should develop a positive, plurilingual environment that promotes language awareness and actively encourages the use of home languages to enhance school learning experiences (Cole, 2013; Dixon et al., 2012; Jun, 2013; Kirwan & Little, 2021; Mallows, 2012; Melby Verlag, 2011)

Pillar 4: Curriculum and the learning experience/ Pillar 5: Students with additional learning needs

- Teachers should encourage the active use of EAL pupil's home languages in the classroom in order to maximise opportunities for cross linguistic transfer between languages (Cole, 2013; Dixon et al., 2012; Jun, 2013; Kirwan & Little, 2021; Mallows, 2012; Melby Verlag, 2011).
- Teaching should take account of EAL pupils' diverse cultural competencies or 'funds of knowledge' that they bring to the classroom and this should be reflected in lesson planning, class discussions and the use of culturally appropriate resources (Choi et al., 2012; Jun, 2013; Piazza, Rao & Protacio, 2015).
- EAL pupils should be taught both cognitive and metacognitive language learning strategies for developing their oral language abilities in English at a low-intensity level over a period of time (Alsowat, 2020; Ardvashveva et al, 2017; Jun, 2013; Plonsky, 2011).
- EAL pupils should be given frequent opportunities to work with their peers in mixed ability groups in order to develop their language and literacy skills (Adescope et al, 2011; Bowman-Perrott et al., 2016; Cole, 2013; Pyle et al, 2017; Sutter, 2012). Digital tools for vocabulary instruction can enhance collaboration, engagement and communication (Macaro et al., 2012; Parmaxi, 2020; Pinto et al., 2012).
- Oral language instruction should incorporate both explicit and implicit instruction in a language-rich environment (August, McCardle & Shanahan, 2014). It should provide opportunities for multiple exposures to the target vocabulary, non-verbal supports to aid understanding, memory and recall, and cumulative review of the vocabulary taught (Lawson-Adams & Dickenson, 2019; Proctor et al, 2005; Webb & Nation, 2017; Uchichara, Webb & Yanagisawa).
- Vocabulary instruction should take account of the need to explicitly and implicitly teach academic, content-area, discipline specific vocabulary as well as conversational vocabulary to EAL pupils (Baker et al., 2014).
- Grammar should be taught both implicitly and explicitly (Kang, Sok & Han, 2019). The use of recasts as part of oral interactions should be used to enhance EAL pupils' grammar development (Miller, Chamness & Wei, 2012) in conjunction with other instructional techniques such as task-based learning (Bryfonski & McKay, 2019). Task based learning can be enhanced through the use of digital tools (Persson & Nouri, 2018).
- Teachers should ensure that their speech and the content of what they are saying is comprehensible to EAL pupils by taking care with the pace of their speech, the range of

vocabulary they use and by maximising pupil talk within lessons (Cregan, 2019; Delcenserie et al, 2019; Justice et al., 2018; Ó Duibhir & Cummins, 2012; Pang, 2019).

- EAL pupils should be taught reading, writing and oral language skills in unison from the earliest possible juncture (Jun, 2013; Ludwig, Guo & Georgiou, 2019).
- EAL pupils should be explicitly taught a range of reading skills. More time may need to be spent on certain aspects of phonics, and additional time may need to be spent listening and responding to texts and reading texts than their native English speaking peers (August, McCardle & Shanahan, 2013).
- Reading interventions should be multi-componential, with the exception of targeted vocabulary interventions (Silverman et al, 2020; Snyder, Witmer & Schmitt, 2017). They should incorporate small group instruction with a maximum of five students (Baker et al, 2014; Ludwig et al, 2019).
- Morphology should be included in reading instruction for EAL pupils as it can enhance decoding, vocabulary and spelling (Goodwin & Ahn, 2013).
- Reading comprehension should be enhanced through pre-reading activities, embedded vocabulary instruction and through building background knowledge (August, McCardle & Shanahan, 2013; Hall et al, 2017).
- Extensive reading should form part of the curriculum in order to improve the reading outcomes of EAL pupils (Jeon, 2020; Nakanishi, 2015).
- Shared reading should be used as an early educational activity with young EAL pupils and vocabulary development should be emphasized throughout these lessons (Fitton, McIlraith & Wood, 2018; Oxley & deCat, 2021; Mitchell, 2018).
- Instruction should endeavor to emphasise the connections between reading and writing (Jouhar & Rupley, 2021; Jun, 2013).
- Explicit instruction in writing should be combined with opportunities to engage in collaborative writing with peers (August, McCardle & Shanahan, 2013; Lu & Kim, 2020).
- Digital, multimodal composition should be used to allow EAL pupils the opportunity to express themselves in a unique manner that encourages the use of their existing linguistic repertoires (Smith, 2021).

Pillar 6: Assessment and evaluation

- EAL pupils will benefit from explicit feedback that focuses on both form and content of their writing. They should have opportunities to engage in peer feedback in relation to writing (Biber, Nekrasova & Horn, 2011, August, McCardle & Shanahan).

Introduction

The overarching question that guided this systematic review of the research was, how can the literacy skills of Irish language speakers and learners, and linguistically diverse learners be developed in early childhood, primary and post-primary schools? We identified three broad categories of student that span the range of settings from early childhood (ECEC), primary and post-primary, (i) learners of Irish as a second language (L2), (ii) emergent speakers and speakers of Irish in Irish-medium settings (L1), and (iii) English as additional language (EAL) and migrant students who speak neither English or Irish at home. It is clear that the language learning goals of each category of student are quite different which we took into account in our search of the literature. We drew on a large volume of systematic reviews and meta-analyses which had been conducted in areas we deemed relevant since 2011. We augmented these with other identified key studies, reports and reviews. The methodology and search strategy is detailed in Appendix A.

Arising from the categorisation above, the following sub-questions were generated and guided our search strategy and report:

1. How can the literacy skills (Irish) of students in English-medium (L2) settings be developed in ECEC, primary and post-primary schools? (oral language, reading and writing)?
2. How can the literacy skills of students in Gaeltacht and Irish-medium (L1) settings be developed in ECEC, primary and post-primary schools? (oral language, reading and writing)?
3. How can the literacy skills of EAL and migrant students be developed in ECEC, primary and post-primary schools? (oral language, reading and writing)?

Our report is divided into two parts. The first part focuses on answering questions one and two above as they pertain to literacy in Irish in English- and Irish-medium settings. Many of the issues and themes identified, are also relevant to the EAL context. Nonetheless, given the specific conditions that pertain to EAL learners who have contact with English, a majority language, outside of school, we decided to devote a separate section to question three. The first part commences with an overview of the plurilingual context in which Irish, English and other

languages are learned and how the transfer of skills across languages can facilitate literacy development in particular. This is followed by an overview of the latest research on effective second language teaching and learning, and learning through more than one language to develop all language skills with a particular focus on oral language. The next sections focus on specific aspects of the development of reading and writing skills. We continue with sections on assessment and the role of technology in language education. We conclude with a section on teacher education. Part two reports on our review of the literature relevant to EAL students.

Plurilingualism and pluriliteracy

A plurilingual approach to language teaching and learning values the linguistic repertoire of all students and encourages students to use all of their linguistic resources to advance learning across languages. Young students in Ireland have the opportunity to learn Irish and/or English from a young age enabling them to become bi- or plurilingual and can add further to their linguistic repertoire as they progress through school. As Irish is a minoritised language, extra support from school, home and community is needed for L1 speakers of Irish to achieve additive bilingualism (Péterváry et al., 2016). Strong efforts must be made to forge links between the use of Irish at home, school and in the community particularly in all Irish-medium and Gaeltacht settings (DES, 2016a). All learners of Irish need additional support to achieve high levels of bilingualism (Ó Duibhir, 2018) and emergent speakers of Irish in Irish-medium settings require particular support to engage with all curriculum areas through Irish. In relation to immersion education, research studies where majority language students are learning another language, report a small positive effect relative to their peers in traditional programmes and these students perform in two languages whereas their peers typically only achieve in one language (Hill, 2018). School leaders in Irish-medium settings are advised to adopt a whole school approach to supporting students' academic and social use of Irish (Ó Ceallaigh & Ní Shéaghadha 2017). Leaders in English-medium settings can increase students' opportunities to learn Irish through the use of informal Irish and Content and Language Integrated Learning (CLIL) which is explored later in this paper. A Plurilingual approach can support the learning of Irish, English, students' home languages, foreign languages and learning across languages on a whole school basis (Little & Kirwan, 2019).

While plurilingualism is the ability to speak two or more languages, pluriliteracy includes the ability to read and write in two or more languages. Ducuara and Rozo (2018) define biliteracy

as “being literate in two languages, making possible to transfer skills from one language to another in order to be able to read, write and speak in both languages and to adapt to different situations and contexts” (p. 1). Students who are pluriliterate can acquire subject knowledge in more than one language (Meyer et al., 2016). The transfer of skills across languages is an important aspect of bi- and pluriliteracy. Two frameworks that have contributed to our understanding of cross-linguistic transfer are linguistic interdependence (Cummins, 1979; Verhoeven, 1994) and contrastive analysis (Connor, 1996; Ellis, 1986). The interdependence framework highlights a common underlying proficiency across languages (Cummins, 1991). Development of the L1 can affect and facilitate the development of the L2 (Cummins, 1979). Contrastive analysis focuses on the structural similarities and differences between languages. With both these frameworks, pupils need to be made aware of the transfer of skills and comparative structures across languages (Genesee, 2004). Evidence of significant correlations have been found across languages (Melby-Lervåg & Lervåg, 2011; Branum-Martin et al., 2012). Different linguistic and writing systems may result in different cross-language effects (Branum-Martin et al., 2012; Ziegler et al., 2010). Studies have revealed that reading strategies developed in one language generally transfer to another (De Sousa et al., 2011; Pasquarella et al., 2015). As a result, spending time on one language does not have a detrimental effect on the other, rather it contributes to the development of both languages (Cummins, 2011). Instructional methods are also aspects that have potential for transfer (Ballinger et al., 2017; Pasquarella et al., 2015).

Both Irish and English are alphabetic languages and therefore share many features. Teachers can take advantage of the transfer of skills by discerning which skills transfer, and which do not. An awareness of similarities between languages can also be raised through direct instruction and requires a holistic approach to biliteracy and recognising the interconnectedness of receptive, productive, L1 and L2 dimensions (Hornberger, 2004). Explicitly drawing learners’ attention to the similarities and differences between word patterns in Irish and English and students’ home languages has the potential to promote language awareness across languages (Stenson & Hickey, 2019; Ó Duibhir & Cummins, 2012). This has been evidenced in the work of Little and Kirwan (2019) in an Irish school context. Students learning Irish can draw on their linguistic skills in English, home languages and foreign languages to advance their learning of Irish and learning across languages.

An understanding of bilingualism and biliteracy is imperative to understand pupils' development and growth in all school settings (Reyes, 2012). Biliteracy and pluriliteracy include varying degrees of knowledge of language and languages may be unevenly developed (García et al., 2017) as is the case in L1 and L2 settings in Ireland. Frameworks such as Hornberger's continua of biliteracy (2004) can assist bilingual educators to approach biliteracy with a sociocultural awareness and a reflective approach to contexts and content of teaching. A dialogic approach to biliteracy development with appropriate scaffolding can help develop the productive skills of speaking and writing (Reyes, 2012). Biliteracy can also be developed through play in the early years where opportunities to develop biliteracy through exploring books, drawings and emergent writing in both languages are beneficial (Reyes, 2012).

Effective second language teaching and learning

The key aim of teaching Irish from early childhood to post-primary school is to enable students to be users of Irish be that as speakers, readers or writers. Communicative Language Proficiency in Irish requires mastery of the five language skills: listening, reading, speaking, spoken interaction and writing (Ó Laoire, 2017). Spontaneous language use is the goal of teaching Irish for L2 speakers and language enrichment is an important goal for L1 speakers. Another facet of the study of Irish is the insight and understanding that it gives students into the cultural heritage of Irish. Researchers agree that there is no one method to teaching a second language, rather methods should be combined and adapted to local contexts. Effective approaches to L2 instruction include: “comprehensible input; opportunities for interaction and output; feedback; relevant and appropriate assessment; strategies that facilitate autonomous learning; metalinguistic knowledge; metacognitive awareness; pragmatic knowledge and learner engagement” (Tavakoli & Jones, 2018, p. 2). It is noteworthy that teachers' competency is more significant than means of instruction (Fitzpatrick et al., 2018; Harris & Ó Duibhir, 2011). It can be concluded that L2 language teaching should include a balance of communicative and analytical activities (Fitzpatrick et al., 2018; Harris & Ó Duibhir, 2011).

The development of oral language skills of listening and speaking play a key role in the development of literacy skills which in turn aid further development of oral language. The Primary Language Curriculum (Department of Education and Skills, 2019) promotes maximum exposure to Irish by teaching through the medium of Irish, the target language. This is particularly

appropriate for lesser used languages such as Irish, not encountered by the majority of students outside of the school context. There is some support in the literature for limited use of the students L1 for “explaining some aspects of the target language such as vocabulary or grammatical structures of the new language” (Yildiz, 2021, p. 486). Gallagher and Colohan (2017, p. 485) found evidence for the merit of “focused, planned and targeted use of the L1 during meaning-focused lessons in the language immersion classroom”. This research is drawing on a perspective of learners as plurilinguals who draw on all their linguistic resources in deriving meaning from spoken interaction and text and the strict separation of languages no longer pertains.

Researchers advocate for instruction of L2 grammar (Goo et al., 2015; Kang, Sok & Han, 2019). Both deductive and inductive approaches to teaching grammar are effective with varying extents of efficacy across studies (Fitzpatrick et al., 2018; Goo et al., 2015; Kang, Sok & Han, 2018). Explicit teaching of grammar is particularly warranted for learners when there is limited use of the target language outside of school. Both oracy and literacy approaches can be effective in developing grammatical competence (Fitzpatrick et al., 2018). CLIL is also effective in the development of certain grammatical competences (Fitzpatrick et al., 2018). Ó Laoire (2017) recommends developing students’ language awareness by affording them opportunities to analyse linguistic patterns in Irish and to explore the origin of grammatical errors, for example through contrastive analysis with English and other languages. An area that has received much research attention is that of corrective feedback. Students need opportunities to produce target language output through speaking and writing and feedback on this production helps them to improve their L2 accuracy. Feedback can be provided mainly through recasts, where the correct phrase is provided, or prompts, where the learner is promoted to reflect on their error and self-correct. The research suggests that prompts are more effective than recasts provided that the students have sufficient grammatical knowledge to self-correct (Brown, 2014).

The emphasis on language use has led in recent decades to a focus on Communicative Language Teaching (CLT) and has expanded to include approaches such as Task-based Language Teaching (TBLT) and CLIL underpinned by a sociocultural approach to language teaching (Tavakoli & Jones, 2018). TBLT which utilises the task as a means of language instruction has shown positive effects for L2 learning in a wide variety of contexts (Bryfonski & McKay, 2019). Tavakoli & Jones (2018, p. 3) state that “TBLT can develop learners’ fluency, accuracy, autonomy, and active engagement in learning” and it is particularly effective in developing transactional

competence. Flynn (2021) argues that TBLT may be particularly appropriate in the context of learning Irish where many students have limited opportunities for authentic language use outside of school. CLIL appears to be a particularly effective method of advancing second language skills (Fitzpatrick, et al., 2018; Flynn, 2021; Gil-López et al., 2021; Harris & Ó Duibhir, 2011) and this should be investigated as a means of increasing English-medium students' exposure to Irish and their competency in the language. Gil-López et al. (2021) concluded that results are particularly strong for high intensity CLIL programmes when the target language is taught through a number of subjects over a longer time period and that Physical Education can be a suitable content subject for CLIL. Graham et al. (2018) found that teaching language through content, i.e, CLIL, promoted certain language input multiple times and that despite research limitations most studies show that language outcomes on content-based programmes are on a par or better than non-content based. Increasing informal use of the target language can be a starting point for CLIL implementation (Ioannou-Georgiou et al., 2011; Hood, 2020). Irish should be used as an informal means of communication in all English-medium schools to increase students' exposure to Irish and opportunities for meaningful language use. Contact with the language is a critical factor in successful language learning, and this should be optimised in the case of Irish where there are limited opportunities for language use outside of school for most students. The implementation of CLIL has implications for teacher education and policy if it is to be successful (Fitzpatrick et al., 2018).

Other methods of advancing L2 learning are the teaching of metacognitive strategies and engaging in flipped learning. Meta-analytic research shows that teachers should teach both content and metacognitive strategies with a view to improving L2 performance and supporting autonomous and self-regulated learning in L2 (Raofi et al., 2014). Ó Laoire (2017) and Nic Eoin (2017) highlighted the importance of students developing autonomous learning skills in Irish. Flipped learning where learners engage with content before class is deemed effective for L2 learning particularly with older learners (Vitta & Al-Hoorie, 2020). Bond (2020) explored how learners of all ages were supported through technology to engage in flipped learning.

Student self-efficacy has been shown to be an influential variable on their L2 performance and achievement. Research suggests that teachers can influence their students' self-efficacy by giving them opportunities to experience success. Students will expend greater effort on a task when they have experienced success previously with similar tasks (Raofi et al., 2012). Students need

to experience success in learning Irish through early years, primary and secondary education with linkage across levels. Positive feedback and encouragement from the teacher is also important in this regard as are opportunities for students to observe their peers completing tasks successfully. On the other hand, L2 learning anxiety has been reported in the case of students with special education needs learning Irish (Flynn et al., 2019). There is evidence in the research that this can negatively affect primary school students more than older students as they may not be as competent in dealing with anxiety and are still developing learner autonomy. As they grow older, they become more adept at using metacognitive and affective strategies to manage their anxiety (Teimouri et al., 2019). It is interesting to note that language anxiety has the greatest impact on achievement in languages other than English which is thought to derive from the more widespread presence of English as a global language (Teimouri et al., 2019).

Reading

Reading in Irish should be part of a balanced literacy framework which includes the development of oral language, reading, comprehension and writing skills (Department of Education and Skills, 2016). Reading in more than one language differs from reading in one language. For pupils for whom Irish is not the language of home or community, and in the case of a minority language, quality literature creates opportunities for exposure to authentic language (Hickey & Stenson, 2017). Literature can be motivating for language learners and more interesting and authentic than textbooks (Al-hajji & Shuqair, 2014). Pupils should be provided with high quality books to promote reading in both languages (Ducura & Rozo, 2018). Opportunities for reading can be furthered with the use of text in the environment through wall displays, labels and posters (Andrews, 2006). Pupils can be supported in developing their higher-order thinking skills in Irish and comprehension strategies can be supported in both L1 and L2 settings. There are linguistic as well as literacy benefits for learners of all ages (Fitton et al., 2018; Al-hajji & Shuqair, 2014; Jeon & Day, 2015; Liu & Zang, 2018), and in the context of both L1 and L2 settings in Ireland, there are overall benefits to reading in Irish both for primary and post-primary pupils (Stenson & Hickey, 2019). Stenson and Hickey discuss the possibilities of parental involvement in their children's reading through the use of technology (Stenson & Hickey, 2019).

Motivation and attitude to literacy in a minority language can suffer when competing with English (Verhoeven & Snow, 2001). In Irish reading, even among native speakers, there is

evidence that children are better readers in English (Péteřvářý et al., 2014). Proficiency in the language also affects motivation to read in more than one language. It has been established that motivation to read and having the appropriate skills to read are intrinsically linked (Afflerbach et al., 2013; Guthrie et al., 2005). Jeon and Day (2015) state that incorporating reading in more than one language into a curriculum can encourage motivation and can result in more positive effects over time. However, they emphasise that this must be a whole-school approach and not the effort of single teachers.

Early years

Sharing a book with early years language learners can provide a vehicle for vocabulary development, early literacy instruction and language focused interventions for the L2. Shared reading and storytelling provide opportunities to develop a range of skills when learning and developing language. It is one of the most common strategies to develop biliteracy among young learners (Ducuara & Rozo, 2018) with a positive effect, specifically in early years, on language and literacy skills (Fitton et al., 2018). Storytelling provides personal, social, intellectual and linguistic benefits (Mhic Mhathúna, 2010). Teachers can use dialogic reading strategies to encourage language rich interactions and can match their language use to that of the learners (Fitton et al., 2018). In all linguistic settings reading material should be carefully chosen with relevant themes and to reflect the linguistic needs of the pupils (Andrews, 2006). Repeated reading is an effective strategy providing the opportunity to become familiar with the vocabulary and language use and comprehension strategies can be developed and strengthened (Wang, 2011; Mhic Mhathúna, 2010). Gains in linguistic and literary development have similarly been revealed in research in Irish-medium schools in Ireland (Mhic Mhathúna, 2010; Ó Cathaláin, 2011). Hickey and de Mejía (2014) emphasise the specific needs of early years in immersion.

Primary

As pupils progress through primary school, they continue to develop their linguistic skills through shared reading and a dialogic approach to reading in English and Irish as L1 or L2. Pupils should also experience a range of reading experiences from shared, group, paired and individual reading in both languages. A multi-sensory approach can be adapted to include group responses, group interaction, exchanging ideas as well as individual work. Peer-mediated learning in L2

reading, involving student-student interaction in co-operative, collaborative learning has been deemed more effective in primary and post-primary schools than teacher-centred or individual learning for both spoken and written language development in L2 (Cole, 2014). Book reading encourages interaction in discussions and sharing of opinions that expands the awareness of language (Al-hajji & Shuqair, 2014). Pupils should have access to a wide range of books in Irish in a range of genres. Informational texts are beneficial for vocabulary development in L2 (Sorrell & Brown, 2018). Extensive reading (ER) in the L2 was found to contribute to speaking and writing in the L2 (Al-hajji & Shuqair, 2014; Cole, 2014), to improvements in language proficiency, reading proficiency, vocabulary acquisition and grammatical awareness (Liu & Zhang, 2018) and to the overall effectiveness on L2 proficiency (Jeon & Day, 2015). Successful ER in the L2 has been attributed to the application of core principles recommended by Day and Bamford (2002) that are easy reading material, learners choose the material, read as much as possible, individual reading, teacher guidance (Jeon & Day 2015; Dunne & Hickey, 2017). With appropriate reading materials and scaffolding L2 pupils in English-medium schools can be motivated to read authentic texts and avail of the benefits from reading in the L2. Re-reading strategies in the L2 can be implemented to develop reading fluency and further comprehension (Wang, 2011). Pupils in Irish-medium schools can experience similar gains from reading a range of materials in a range of settings. They also need to be prepared to read across all learning areas of the curriculum and a focus on genres and disciplinary literacy can help facilitate this (Ó Ceallaigh et al., 2019).

Post-primary

The benefits of reading in Irish as an L1 or an L2 outlined for primary pupils are similarly applicable to post-primary pupils. Authentic literature in Irish provides the opportunity and motivation to experience authentic language, dialect and themes that, as a minority language, pupils may not experience elsewhere (Hickey & Stenson, 2017; Al-hajji & Shuqair, 2014). Peer-mediated learning and dialogic approaches can facilitate group interactions and further both linguistic and literacy development. In English-medium L2 settings, appropriate, authentic reading material can provide the linguistic benefits as well as encourage the literary discussions and higher-order thinking strategies. In Irish-medium L1 and L2 settings, a focus on authentic texts in Irish can facilitate learning across subjects where an expansive vocabulary and linguistic knowledge of Irish is essential. In post-primary settings teachers need to be aware of the integration of language

and subject and in reading across subjects a balance of language and subject is always at the forefront (Ó Ceallaigh et al., 2019). Developing skills and strategies in one language transfers to other languages and pupils can be made aware of these benefits in all language learning (Melby-Lervåg & Lervåg, 2011).

Components

While some skills transfer across languages others do not and an understanding of this process could assist teachers and learners. Monitoring the development of reading components can assist with an understanding of development across more than one language. In investigating reading components across L1 and L2, Jeon and Yamashita (2014) found that L2 grammar knowledge, L2 vocabulary knowledge and L2 decoding were the strongest correlates of L2 reading comprehension. There is a large emphasis in research on L2 reading on vocabulary development. Effective methods of developing vocabulary in the L2 involve both incidental methods such as independent reading of a combination of expository texts and narrative texts (Huang et al., 2012) as well as intentional methods such as flashcards, lists and fill-in-the-blanks activities (Webb et al., 2020). Other studies emphasise the frequency of encountering new vocabulary in the language as effective (Kartal & Sarigul, 2017; Uchihara et al., 2019; Andrews, 2006). Decoding and word recognition are two components found to have an effect on reading in Irish in both L1 and L2 settings (Hickey, 2007; Parsons & Lyddy, 2009). These studies reveal the importance of understanding the development of specific components in both Irish and English and that appropriate strategies need to be adapted that consider the orthographies of the two languages. There is a general consensus that teaching that includes multiple components is most effective in literacy development and comprehension in more than one language (Snyder et al., 2017; Yapp et al., 2021).

Writing

Similar to reading and oral skills, writing skills in Irish should be taught as part of a balanced literacy framework which includes the development of oral language, reading, comprehension and writing skills (Department of Education and Skills, 2016). Learners should have opportunities to regularly engage in free writing, the writing process and reading and writing a variety of genres in Irish (Department of Education and Skills, 2016). Language frames and

shared writing are effective ways to scaffold children's writing in Irish (Department of Education and Skills, 2016). Due to the minority language context of Irish, there are limited opportunities to write for a purpose. As students' language proficiency develops in Irish they should have opportunities to write for real purposes and develop an individual voice through writing e.g. sharing their opinion, response and author's intent, explanation and justification etc. Teachers should be cognisant of the limitations of rote learning for examinations at secondary level in particular (Ní Mhaonaigh, 2013, 2017; Ó Laoire, 2017). Grammatical inaccuracy is a consistent challenge at secondary level and teachers should be encouraged to improve their own accuracy and utilise tools e.g. online dictionaries, grammar resources etc. to support accurate language use (Ní Mhaonaigh, 2013, 2017).

Graham et al. (2020) found that teaching component skills: oral language, vocabulary and transcription (handwriting and spelling) had a moderate positive effect on skills and on L2 writing. Collaborative writing (CW) in L2 has been shown to improve both the quality and quantity of L2 writing, as well as different levels of writing and communicative skills (Lu & Kim, 2021). This may be impacted on by various contextual factors in terms of grouping arrangements. Elabdali (2021) found that CW resulted in more accurate texts as students were given opportunities to collaboratively negotiate meaning and form and that the overall quality of individual writing, but not individual accuracy, improved after CW. Feedback through comments focusing on both content and form was effective in progressing L2 writing skills, and feedback from peers and computer rather than from teachers was considered most beneficial to advance L2 English writing (Biber et al., 2011).

Fitzpatrick et al. (2018) advise that technology that is well-planned and implemented can support L2 writing development, but that learners need be supported in developing appropriate skills e.g., paraphrasing. Combining literacy and oracy, strategy training (e.g. planning, cognitive strategies), and creating a suitable environment can improve L2 writing performance (Fitzpatrick et al., 2018). CLIL also presents opportunities for L2 writing development. The Writing Workshop encompasses various elements of effective writing instruction. Research on the Writing Workshop through Irish at primary level with L1 and L2 speakers of Irish in Gaeltacht schools showed that children's literacy skills in Irish developed, with evidence of transfer of writing skills from Irish to English (Ní Chuaig, 2016).

The Department of Education and Skills (2016) elucidates that spelling tests do not support differentiated or inclusive learning and recommend assessing spelling in sentences and written work, and incorporating approximate spelling and word patterns in spelling instruction in Irish (Department of Education and Skills, 2016). Stenson and Hickey (2019) advocate explicitly teaching spelling rules in Irish to support learners' decoding skills and their progression from decoding to automatic word recognition in Irish reading. Stenson and Hickey (2019) highlighted gaps in teachers' knowledge of Irish orthography which must be addressed through teacher education if teachers are to develop a systematic approach to teaching Irish spelling and decoding skills.

Phonological, phonemic, and morphological awareness

Phonological skills are highly interrelated across student's languages so that children with strong phonological awareness skills in one language can apply these skills to their second language (Soto & Goldstein, 2019). Junkyu Lee et al. (2015) found evidence for the positive effect of pronunciation instruction to post-primary age students. Decoding training which consisted in the main of dictation and pronunciation instruction was found to enhance L2 listening comprehension (Jia & Hew, 2021). Saito and Plonsky (2019) found pronunciation instruction to be effective on closed tasks but that learners need the opportunity to practise target language in communicative tasks (i.e., proceduralisation) to work towards achieving knowledge automatization (De Keyser, 2017).

The benefits of phonemic knowledge and the ability to decode in Irish is vital to both reading and writing in Irish (Hickey & Stenson, 2017). Instruction in phonemic and phonological awareness has been shown to have a large positive effect (Choe & So, 2020; McAndrews, 2019). Phonemic awareness instruction has also been shown to have a positive impact on L2 listening comprehension and instructional time should be devoted to this area (Choe & So, 2020). Although both alphabetic languages, Irish and English have different orthographies and an awareness of the similarities and differences in both orthographies could assist learners in their developing literacy skills (Stenson & Hickey, 2019). A focus on the transfer of skills is beneficial in the learning of phonemic skills in an L2, and pupils do not need to begin at the beginning of the learning process. A focus on the differences in phonemic knowledge across languages can provide a better starting

point for teaching. Morphological awareness (MA) is a critical predictor of reading development in more than one language (Ke et al., 2021). Significant correlations have been found across languages that indicate MA skills can be transferred across languages (Ke et al., 2021). Irish is a morphologically rich language with initial mutations, lenitions and eclipsis (Barnes, 2017) and pupils could benefit from specific instruction in MA in Irish.

Assessment

Assessment which comprises formative, summative and dynamic forms of assessment (Tavakoli & Jones, 2018) is integral to effective L2 teaching. Some learners will experience challenges in acquiring literacy skills in L1 and L2, and teaching supports and materials should be differentiated to support all children in acquiring literacy skills (Department of Education and Skills, 2016). There is no empirical evidence of a specific foreign language (FL) disability (Sparks, 2016), and learners who experience literacy difficulties in L1 should not be excluded from FL learning but rather closely monitored and supported (von Hagen et al., 2021).

The specific features of EAL and early immersion and language development across two languages need to be considered in assessment (Andrews, 2006; Hickey & de Mejía, 2014; Mhic Aoidh, 2017, Mhic Mhathúna, 2010). Mhic Aoidh (2017) emphasises the importance of teacher observation in early years and an awareness of how children develop in two languages. However, specific assessment for early intervention with children with additional needs is highlighted (Mhic Aoidh, 2017). An awareness of how pupils develop across two languages in specific reading components can also assist teachers with their planning for reading lessons and monitoring reading components can be beneficial to ensure pupils develop the appropriate skills and strategies to read in Irish and English (Reyes et al., 2012). When EAL, Irish-medium students or L1 speakers of Irish encounter challenges and need to be assessed, they should be assessed bilingually (Nic Aindriú et al., 2021).

Despite allocating more marks to assessing students' oral language at Leaving Certificate Level, research shows little evidence that students' oral language skills have improved (Ó Laoire, 2017). Teachers are under pressure to prepare students for assessment at second level and the culture of rote learning remains, with a high percentage of teachers providing students with sample answers for the oral and written examinations (Ní Mhaonaigh, 2013, 2017; Ó Laoire, 2017). Assessment of Irish at secondary level should be revised with a view to positively impacting on

students' experiences and the quality of teaching and learning of Irish (Nic Eoin, 2017; Ní Mhaonaigh, 2013, 2017; Ó Curraoin et al., 2017; Ó Laoire, 2017). Setting learning outcomes and assessments that are clearly aligned with the CEFR would provide a transparent and objective way of measuring students' language competencies (Gallagher & Ní Mhaonaigh, 2009; Ní Mhaonaigh, 2017; Ó Laoire, 2017). Rote learning of passages for oral and written examination does not promote language acquisition. Students should develop linguistic skills which support communicative language use. It is paramount that assessment tools be developed that do not promote rote learning and that students' linguistic skills in Irish are assessed in a manner that is appropriate to their level of proficiency and the diverse contexts in which Irish is taught. Negative experiences of assessment can negatively impact on students' lifelong view of learning Irish (Ó Laoire, 2017).

Technology

Research indicates largely positive findings for the effects of Computer Assisted Language Learning (CALL) treatments on L2 learning outcomes (Bibauw et al., 2019; Plonsky & Ziegler, 2016). The past decade has witnessed a surge in studies on Mobile-assisted Language Learning (MALL) such as the use of Ipods, Personal device applications (PDA), smartphone, tablet, mp3, pendrive and handphone. MASLL provides learning opportunities such as authentic learning, mobility, flexibility and self-regulated learning. Other advantages may include increased motivation, autonomy and social interaction (Persson, 2018), and the potential for collaborative and task-based learning in L2 (Burston, 2015). Meta-analyses show a medium to large positive effect for the effectiveness of MALL on language learning and effect sizes are impacted on by moderator variables (Chen et al., 2020; Peng et al., 2020; Sung et al., 2015). MALL has shown a positive effect on the four global language skills (i.e., listening, reading, speaking and writing) (Burston, 2015; Peng et al., 2020). Some studies show that language teaching incorporating the use of mobile devices is more effective than teaching without mobile devices (Chen et al., 2020; Peng et al., 2020; Sung et al., 2015) and that using mobile devices produced better effects for L2 learning than for L1 learning (Sung et al., 2015). Lin and Lin (2019) found a large positive effect for MALL on vocabulary learning and that students' who used mobile technologies both in and outside of class performed best on L2 word retention. MALL has been proven to improve both

linguistic proficiency and learner motivation (Persson, 2018). Further research is needed to provide more solid evidence for the effectiveness of using mobile devices to learn languages other than English and on how to embed technology into pedagogy to optimise its learning potential (Chen et al, 2020; Fu, 2018; Sung et al., 2015). Fu (2018) advises of the importance of creating mobile learning systems to connect in-class and out-of-class learning and to employ teaching strategies to guide students to learn to use mobile technologies.

Play and differentiation in Digital Game-based Language Learning (DGBLL) has been found to enhance language acquisition, affective/psychological state, contemporary competences, and participatory behaviour of primary through high school-age children (Acquah et al., 2020; Dehghanzadeh et al., 2019). Acquah et al. (2020, p. 9) state that consideration must be given to “player control, challenge (in one's ZPD), instant feedback, mystery, collaboration, goal orientation, clear rules, and when appropriate, competition”. Game-based language learning (GBLL) has shown a large overall effect size for L2 vocabulary acquisition under different conditions, and has been found to be more effective than non-GBLL (Hao et al., 2021; Tsai, & Tsai, 2018). Further research is needed on ways teachers can successfully and easily use DLGs as the success of GBLL lies in the integration of language learning goals with games (Acquah et al., 2020; Dehghanzadeh et al., 2019). Studies also show that virtual reality can have a positive learning effect on language learning, however, this needs more investigation (Borona et al., 2018; Pinto et al., 2021). MALL and DGBLL should be explored in the context of learning Irish.

Online reading has become a major source of input for L2 readers who often transfer their reading strategies from one language to another (Huang et al., 2009). For second language learners, online reading offers the same challenges and also the same opportunities. Resources such as CALL can be used to promote biliteracy (Ducua & Roza, 2018). Online reading can provide a wider choice and range of texts, particularly in the context of a minority language. It may also provide the motivation to read for readers of a minority language. Zhang et al. (2020) found an overall positive effect of the use of e-books on L2 English vocabulary learning and comprehension. Studies show that glossed reading led to a significantly greater learning of L2 words than non-glossed reading and that in some cases the use of L1 in glossing may be effective (Yanagisawa et al., 2020; Ramezanali et al., 2021). Glossing should be investigated in the context of learning Irish as L2. E-portfolios have been shown to promote self-regulated L2 language learning (Segaran et al., 2021). Multimodality presents an opportunity to put lesser used languages on a world platform

and find ways to expose children to a wider range of resources. Educational digital resources must be developed in the context of learning Irish. Teacher awareness, teacher education and application will be critical to its success (Koda, 2007).

Teacher education

Teachers' pedagogical content knowledge in Irish which encompasses linguistic proficiency, explicit knowledge of Irish and expertise on how to teach Irish is critical if students are to be successful in learning Irish. Linking teacher education with the CEFR would ensure a transparent threshold level of competency for teachers in Irish (Gallagher & Ní Mhaonaigh, 2009; Ní Dhiorbháin & Ó Duibhir, 2021). European Guidelines for CLIL teachers state that they should be aware of their level of competency on the CEFR and identify needs for professional development (Marsh et al., 2011). This has important implications for teacher education.

Hickey and de Mejía (2014) cite the importance of specific teacher preparation for early years, primary and post-primary in L1 and L2 settings, with preparation for early years in immersion settings a vital foundation if students are to develop literacy skills in Irish. Teachers need to be aware of the methods of using literature and how to develop aural/oral competencies alongside emerging literacy skills (Al-hajji & Shuqair, 2014). They need to plan for and use appropriate strategies that promote biliteracy with different methodologies at different levels of learning (Ducua & Rozo, 2018). Stenson and Hickey (2019) state that teacher preparation to teach reading in Irish is crucial. Ó Ceallaigh and Ní Shéaghdha (2017) emphasise the importance of teacher preparation for best practice for teaching in two languages in Irish-medium settings.

Students learning through Irish in Irish-medium schools should be given opportunities to focus on linguistic form and academic language to support their learning of content through a minority language and to promote their productive language skills (Tedick & Lyster, 2020). It is widely recognised that immersion teachers struggle to successfully integrate language and content and this should be a priority for teacher education and professional development in Ireland (Ó Ceallaigh et al., 2017; Ó Ceallaigh et al., 2019). Professional development for teachers in Irish-medium and English-medium schools should focus on developing teachers' linguistic competencies in Irish as well as their pedagogical content knowledge (Ní Dhiorbháin & Ó Duibhir,

2021; Ní Mhaonaigh, 2013, 2017; Ó Ceallaigh et al., 2017; Ó Ceallaigh et al., 2019) Teacher language competency is paramount to successful language teaching (Fitzpatrick et al., 2019).

EAL narrative report

Introduction

Non-native speakers of English make up approximately 11% of our school population and 30% of these pupils have not learned English in any other context before entering primary school (Central Statistics Office, 2017). In policy documents, these pupils are described as ‘pupils for whom English is an additional language’(EAL) which acknowledges their plurilingualism, as many pupils speak more than one home language and are also learning both English and Irish in school. Typically, EAL pupils require 3-7 years of support to reach English language proficiency (Dixon et al., 2012). Therefore, it is incumbent on policy makers and teachers to ensure that EAL pupils receive high quality instruction in language and literacy so that they may be successful in accessing the curriculum and achieving their full potential as students in our schools. This report will first examine some general approaches to EAL instruction and then it will then tighten the lens to examine the research-based best practice in literacy teaching in relation to oral language, reading and writing instruction for EAL pupils.

General approaches to enhance the language and literacy development of EAL pupils

This first section will explore the research findings in relation to the delivery of high-quality instruction to EAL pupils. It will begin by examining some general approaches to EAL instruction such as the importance of the use of pupils’ home language in the classroom and school and the concept of creating a positive plurilingual environment in schools. The use of unsegregated, peer supported learning environments will also be explored. This section will conclude by discussing the research in relation to the use of learning strategies for language acquisition.

Translanguaging and the development of positive plurilingual environment

A safe, risk-free environment in which to produce and explore a new language is essential for EAL pupils (Guilfoyle & Mistry, 2013). Cummins' (2016) linguistic interdependence hypothesis emphasises the importance of connecting a pupils' home language to the language of instruction in the development of vocabulary. This theory is referred to as translanguaging in practice and promotes a positive learning environment for language learning (Brevik & Rindal, 2020). This is important as Lloyd (2012) points to the need for emotional support in language learning for minority language speakers. The work of Kirwan and Little (2021) has highlighted the importance of translanguaging, plurilingual and intercultural education, language awareness and language learner autonomy for EAL pupils within the Irish context. Indeed, Jun's (2013) review also insists that teachers should view the first languages of the EAL pupils as a resource and use them strategically, when possible. This approach is often referred to as additive bilingualism and should be a visible support for EAL pupils in schools (de Jong, 2010; DES, 2005; DES, 2019). In Mallows' (2012) book, several researchers recommend that schools value home languages through experiences such as bilingual writing opportunities (see for example Dakin, 2012; Wardman et al., 2012). Cole's (2013) meta-analysis revealed that interventions for EAL pupils had higher effect sizes when they utilized their native language than those using only English. Dixon et al. (2012) also reported that EAL pupils who are literate in their first language are more successful academically than those who lack those skills. While incorporating an EAL pupil's home language has clear benefits in terms of activating the affective filter needed to learn English (Krashen, 1983), it also has specific academic benefits, for example, Melby Verlag (2011) found a small meta-correlation between first (L1) and second (L2) oral language and a moderate to large correlation between L1 and L2 phonological awareness and decoding in the studies she examined.

While acknowledging and including EAL pupils' home languages in instruction is critical, it is also important to ensure that the teaching an EAL pupil receives is culturally responsive. Culturally responsive teaching relates to the adoption of a critical and responsive stance that incorporates students' cultural knowledge and lived experiences in instruction (Piazza et al., 2015). It is regarded as a key principle in effective pedagogy for EAL learners (Jun, 2013). Hence, the Primary Language Curriculum (NCCA, 2019) highlights the need to provide opportunities for children to share the 'funds of knowledge' that they bring to the classroom related to their language

and culture (González et al., 2005). Choi et al. (2012) also found that it was helpful to include cultural competencies into EAL reading interventions. They also recommend that the intervention be provided in both English and in their native language so that interventional outcomes could be maximized, however, such a recommendation may not be feasible in the plurilingual environment of Irish schools.

Language learning strategies

Language learning strategies involve the ‘explicit instruction on specific practices or techniques that can be employed autonomously to improve one’s L2 learning and/or use’ (Plonsky, 2011, p. 994). Jun’s (2013) review recommended that metacognitive strategies and specific language learning strategies are an effective and important aspect of EAL instruction. Ardasheva et al. (2017) would also agree that language strategy instruction is a viable instructional tool in classrooms where children are learning English as an additional language. However, their research noted that the context, treatment and methodology characteristics were found to moderate the effectiveness of strategy instruction. Plonsky (2011) found that while instruction on both cognitive and metacognitive strategies is beneficial, it is most effective when used at a low-intensity level for longer periods. Alsowat (2020) confirmed that language learning strategies had a medium impact on language outcomes in general and generated the largest impact on speaking ($d=0.90$). Therefore, it would be recommended that language learning strategies be incorporated into EAL instruction.

Peer/social learning

The use of peer supported social learning contexts for EAL instruction is well supported by the research. Cole (2013) found that EAL pupils performed better in unsegregated environments where they had both language support services and access to native English-speaking peers. Cole (2014) maintained that peer-mediation is more effective for EAL pupils than individualized or teacher directed comparison conditions. However, interventions in which peer-mediation was one of several components were more effective than interventions utilizing peer-mediation as a sole component. Cole (2014) also found that the greatest gains in language acquisition in interventions using peer-mediation was evident in elementary compared to middle/high school students. In addition, the use of digital tools has been found to promote language learning through interaction,

collaboration and other twenty-first learning skills such as communication and problem-solving amongst peers (Macaro et al., 2012; Parmaxi, 2020) and should also be included in EAL instruction.

Pyle et al. (2017) investigated peer-mediated interventions with EAL learners in relation to specific aspects of literacy learning and found that they are associated with medium to large effects on measures of phonemic awareness, vocabulary, and comprehension when compared to teacher-mediated comparison conditions. Adesope et al. (2011) explored collaborative reading interventions, in which peers engage in oral interaction and cooperatively negotiate meaning and a shared understanding of texts and found that this type of peer supported learning produced larger effects than systematic phonics instruction and multimedia-assisted reading interventions. Bowman-Perrott et al. (2016) and Sutter's (2012) work also suggest that EAL pupils benefit from peer tutoring academically, socially, and linguistically. Therefore, it would be recommended that EAL pupils be given as many opportunities as possible to learn with and from their peers in a collaborative and social manner.

Effective literacy instruction for EAL pupils

This section will explore the research findings in relation to the delivery of high-quality literacy instruction to EAL pupils. It will focus on oral language, reading and writing instruction for EAL pupils individually in each subsection.

Oral language instruction

There is a general consensus that EAL pupils lack vocabulary knowledge in English and that this dearth can impact their academic achievement across the curriculum (Proctor et al., 2005). Indeed, oral proficiency in English appears to be of critical importance in the acquisition of second-language reading comprehension (Verhoeven, 2011). Oxley and de Cat (2021) found that explicit vocabulary instruction and targeted oral language practice yield language gains for EAL learners and that studies revealed larger intervention gains in learners with the lowest initial pre-test scores. Webb et al. (2020) investigated the effectiveness of word-focused tasks that involved the explicit instruction of vocabulary. They found that while different techniques produced varying levels of effectiveness, the effect sizes of all diminished over time. Therefore, explicit word learning needs

to be complimented with repeated encounters with the target vocabulary (Webb & Nation, 2017). Repetition was also deemed important in vocabulary learning in the studies examined by Uchihara et al.'s (2019) results showed that there was a medium effect ($r = .34$) of repetition on incidental vocabulary learning. Jun's (2013) review also delineated the importance of teaching vocabulary within multiple contexts. August et al. (2014) confirmed the need to use multiple approaches to teaching vocabulary that include directly teaching individual words, immersing students in language-rich environments, and teaching word learning strategies. The range and type of vocabulary that an EAL pupil encounters in instruction is also important as Baker et al. (2014) found strong evidence that teaching a set of academic vocabulary words intensively across several days using a variety of instructional activities can have a very significant impact on EAL pupils' vocabulary development. Baker et al. (2014) also had strong evidence to integrate oral and written English language instruction into content-area teaching, thereby including discipline specific vocabulary in EAL instruction.

Lawson-Adams and Dickinson (2020) found that gestures, pictures, and sounds can help support word learning. They suggest that nonverbal support may help overcome language barriers and enhance students' learning of concrete words by representing semantic information and/or emphasising the intended referents (Rowe et al., 2013; Tellier, 2008). Their research found that nonverbal support may be of particular benefit in the learning of academic vocabulary which is especially useful for EAL pupils (Townsend et al., 2012). Total Physical Response (TPR) is a non-verbal learning method that involves children using their bodies and minds to demonstrate understanding through gestures. It is particularly useful for teaching vocabulary to children in the silent period as the focus is on receptive rather than expressive language (Ó Duibhir & Cummins, 2012). Therefore, nonverbal support can be useful in both teaching and learning of English for non-native speakers in the classroom.

Digital tools such as virtual reality gaming have also been found to be effective in motivating vocabulary development as it provides a context for learning new vocabulary (Pinto et al., 2021). It has also been found to enhance interaction and task engagement which leads to vocabulary acquisition (Parmaxi, 2020; Thompson & von Gillern, 2020). However, some studies found that VR and other mobile-base learning did not bring about any significant increases in pupil learning (Parmaxi, 2020; Peng et al., 2020) and some research found that effect sizes tended to be larger for adults than children (Chen et al., 2020).

In relation to the teaching of grammar in EAL contexts, Kang et al., (2019) found that while both explicit ($g = 1.11$) and implicit ($g = 1.38$) grammar instruction were found to have a large effect on L2 learning in immediate posttests; implicit instruction ($g = 1.76$) appeared to have a significantly longer lasting impact on learning, according to delayed outcome measures, than explicit instruction ($g = 0.77$). However, Dixon et al. (2012) recommend that EAL learners with little L2 exposure require explicit instruction to master grammar and also opportunities to use the L2 informally.

Miller et al. (2012) found that recasts may raise language learners' level of awareness of grammar in some circumstances. Their research found that the use of recasts might have an influence on output, but not on the developmental system. In using recasts, it is important that language learners are not only exposed to the L2 but are also provided with many opportunities to interact in the L2 and to correct mistakes and errors. Recasts may enhance instruction, but a learner's progress must be monitored to ensure that they notice their errors. Miller et al. (2012) also recommend that recasts should be used in conjunction with other instructional techniques.

Task-based learning which employs an 'alternative to traditional grammar translation or present-practice-produce pedagogies by emphasizing interaction during authentic task'' (Bryfonski & McKay, 2019, p.603) has been found to be an effective approach to teaching grammar to EAL pupils above and beyond the learning found in programs with other, traditional or non-task-based pedagogies. Data revealed that this approach was also positively received by learners and teachers in a variety of contexts for learners at a variety of levels, institutions and countries. Digital tools can provide an effective forum for task-based learning that can enhance pupil's vocabulary with the option of personalised learning experiences that can be accessed both inside and outside the classroom (Persson & Nouri, 2018).

Cregan's (2019) review of research made several recommendations in relation to the role of the teacher in developing EAL pupils' oral English. The report noted that the amount of language input and the syntactic and grammatical complexity of what language a child is exposed to impacts EAL vocabulary development (Delcenserie et al., 2019; Justice et al., 2018). Therefore, the quality of teacher talk is a critical variable in language achievement. It is essential that a teacher model comprehensible input (Ó Duibhir & Cummins, 2012; Pang, 2019) which can be done by restating key information, slowing down the pace of speaking, using a range of vocabulary that

differentiates according to vocabulary knowledge, and maximising the opportunities for pupil talk by decreasing the amount of teacher directed speech (Hollo & Wehby, 2017).

Reading

Verhoeven (2011) contends that EAL pupils can learn to read and write in English even before reaching some threshold of English oral language proficiency level. Ludwig, Guo and Georgiou (2019) also recommend that reading interventions should not be delayed until these students have reached a particular level of oral English proficiency. Indeed, Jun (2013) points to the importance of integrating reading, writing, speaking, and listening skills into EAL instruction from the beginning to maximise language learning. However, August et al. (2013) contend that some adaptations may be required for EAL reading instruction compared to native speakers of English (for example the use of visual supports, identifying, highlighting and clarifying difficult words and passages, extra practice in automaticity and fluency, graphic organisers, high level of interactions with teachers and peers, speech speed and sentence complexity used by the teacher in reading instruction).

August et al. (2013) found that EAL pupils benefit from explicit instruction in phonological awareness, phonics, vocabulary, oral reading fluency, reading comprehension and writing. Snyder et al. (2017) reported that interventions that include multiple reading components are most effective for phonemic awareness, phonics, fluency and comprehension outcomes. This is also echoed by Silverman et al. (2020). Comprehension outcomes tend to be better when other basic reading skills (phonics, phonemic awareness, fluency and vocabulary) are taught in addition to comprehension skills. However, all of the identified studies in Snyder et al.'s (2017) review showed large vocabulary gains focused solely on vocabulary skills during the intervention, leaving it as an exception to the multi-componential intervention recommendation.

Verhoeven (2011) found that phonological, phonemic and phonics instruction is important for EAL pupils as limited phonological abilities in English may hamper word identification. Instruction in phonics and phonological awareness is particularly effective for EAL pupils when it is combined with increased exposure to English texts and when instruction is tailored to EAL pupils' needs (e.g. spending more time on sounds that do not exist in their home language) (Giambo & McKinney, 2004). Verhoeven (2011) also recommends that cross language transfer

should be encouraged as there may be similarities in relation to the orthography and phonology of the target language and the home language.

Goodwin and Ahn (2013) highlighted the importance of morphological instruction for EAL pupils as it improves general decoding via learning about phonology and morphology. It also has moderate effects for vocabulary and for spelling which are areas that EAL pupils often struggle with (Kieffer & Lesaux, 2008; Lesaux & Geva, 2006). Verhoeven (2011) agrees that morphological instruction is important as L2 readers can have difficulties with the reading of more complex, polysyllabic words due to the limited morphological knowledge they may possess due to a lack of familiarity with the English language (Droop & Verhoeven, 2003).

August et al. (2013) found that effective approaches to reading comprehension instruction for EAL pupils included extended discussions, intensive word meaning study, building background knowledge by previewing key vocabulary or difficult lexical items, providing brief story introductions prior to reading, questioning throughout reading to enhance comprehension, emphasising meaning and language development and showing students video clips related to the text prior to reading. Verhoeven (2011) highlighted that EAL pupils' vocabulary knowledge and lexical and syntactic awareness should be a priority in reading instruction as the limited size of their L2 vocabularies may impede their reading comprehension. Verhoeven (2011) also recommends that explicit grammar instruction be included in reading instruction as it can enhance EAL pupils' lexical and syntactic knowledge which can improve reading comprehension and vocabulary development. Hall et al. (2017) recommend that comprehension should be taught with vocabulary to increase effect size. They also found that the features of effective intervention included the use of an EAL pupil's home language in instruction, opportunities to respond to a text in a variety of ways, the use of high interest texts, the use of video clips to enhance instruction and inform background knowledge, teaching comprehension instruction, teaching vocabulary in multiple contexts through multiple exposures. However, Melby-Lervåg and Lervåg (2014) recommend that unless specific decoding problems are detected, interventions that aim to enhance reading comprehension problems among second-language learners should focus on language comprehension skills.

August et al. (2013) found that effective fluency instruction incorporates efforts to ensure that EAL pupils understand what they are reading, explicit decoding or a more comprehensive

programme that incorporated the explicit teaching of decoding and comprehension. Fluency increased when students were taught in small groups or one-on-one settings with tutors.

Extensive reading has long been recommended by the research in improving the reading outcomes of EAL pupils. For example, Nakanishi (2015) confirmed that extensive reading improves students' reading proficiency and that extensive reading could be one of the effective instructional components of a programme designed to improve reading proficiency in EAL pupils. However, Jeon (2020) discovered that a higher effect was found in the adults than in the children and adolescents' group. English as a foreign language (EFL) settings showed a higher effect than English as a second language (ESL) settings and computer reader stories had a higher effect than paper books. Jeon (2012) also recommends that extensive reading occur as a part of curriculum as this showed the highest mean effect among extensive reading types.

Mitchell's (2018) results revealed an overall significant, positive effect of shared reading on English learners' outcomes. Fitton, McIlraith, and Wood's (2018) results also support shared book reading as an early educational activity for young English learners. While Oxley and de Cat (2021) agree that shared reading interventions can be effective for EAL pupils, they recommend that shared reading be combined with the pre-teaching of vocabulary, embedded definitions into the text, or post-reading reinforcement activities in order to show positive effects.

In relation to reading intervention design for EAL pupils, August et al. (2013) found that practices that are particularly effective for EAL learners include grouping students according to their instructional needs, using mastery learning with frequent teacher modelling and opportunities for practice, and regular, cumulative review. Verhoeven (2011) also recommends that linguistic transfer of reading skills should be encouraged. Baker et al. (2014) found moderate evidence to support the provision of small-group instructional intervention to students struggling in areas of literacy and English language development. The size of the group is also important as Ludwig, Caralyn; Guo, Kan and Georgiou (2019) found that reading interventions focused on real-word reading accuracy were less effective when the intervention groups were composed of more than five students. They also found that longer intervention sessions were less effective than shorter ones. Verhoeven (2011) recommends that EAL pupils should be given sufficient opportunities to read graded text materials at instructional level in order to achieve reading fluency and teachers should choose reading material that will develop EAL pupils' comprehension skills, background knowledge and vocabulary knowledge.

Writing

As previously stated, Jun's (2013) research review points to the importance of integrating reading, writing, speaking and listening. Jouhar and Rupley's (2021) research highlighted the importance of emphasising a reading-writing connection in teaching EAL pupils. They found that independent reading enhances the overall quality of narrative and descriptive writing and increases output, mechanics, spelling accuracy, content, grammatical accuracy and text organization and independent writing improves literal reading comprehension for EAL pupils.

Biber et al.'s (2011) research revealed that feedback was an important element of writing instruction for EAL pupils. Specifically, they found that written feedback is more effective than oral feedback for writing development and peer feedback is more effective than teacher feedback for EAL pupils. The use of comments is more effective than emphasising errors, and a focus on form and content seems to be more effective than an exclusive focus on form. August et al. (2013) agreed that EAL pupils' writing can be improved by explicit instruction on how to revise.

Lu and Kim (2020) reported that collaborative writing among EAL writers promotes interactions which enhance their L2 development in writing. They also found that collaborative writing improved writing quality, quantity, and the development of writing skills. However, August et al. (2013) recommend that collaborative writing is generally more effective when combined with explicit teacher instruction and teaching writing strategies to EAL pupils has been found to increase achievement.

The development of writing skills through multimodal composition practices has also been recommended in the research for EAL pupils (Smith, 2021). Digital multimodal writing allows EAL pupils to express themselves in a unique manner that can incorporate their existing linguistic repertoires (Smith, 2021). Therefore, the use of digital tools should be considered in EAL writing instruction.

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Jacqueline de Brún is an Assistant Professor in Teagasc na Gaeilge in the School of Language, Literacy and Early Childhood Education, lecturing at undergraduate and graduate level in Teagasc na Gaeilge. She is completing a PhD on the reading practices and attitudes of 9-11-year-olds in Irish immersion schools in Ireland. Prior to coming to DCU, Jacqueline was Education Adviser for the Aisaonad in St. Mary's University Belfast where she wrote, adapted and translated an extensive range of books and resources for Irish immersion schools. She provided professional development for teaching in the context of the immersion classroom and the curriculum. Jacqueline is a former primary school teacher in immersion schools and has taught a range of age-groups.

Aisling Ní Dhiorbháin is an Assistant Professor in Teagasc na Gaeilge (Teaching Methodology of Irish) in the Institute of Education, Dublin City University. She is a former Irish-medium primary teacher. Aisling's doctoral research focused on pedagogies for teaching Irish grammar to student primary teachers. Aisling is interested in all aspects of second language teaching and learning and minority language maintenance and acquisition. She is a member of the development group for the Primary Language Curriculum, as well as the Department of Education and Skills Steering group for the implementation of Content and Language Integrated Learning (CLIL) through Irish. She has published academic articles on language teacher education, form-focused instruction and minority language acquisition.

Máire Ní Láimhín is an Assistant Professor in Teagasc na Gaeilge in the School of Language, Literacy and Early Childhood Education at the Institute of Education, Dublin City University. Her work involves synchronous and asynchronous delivery regarding the teaching methodology of Irish across the Bachelor of Education and Professional Master of Education programmes in DCU. Máire is also a second year doctoral student in DCU. Her current doctoral studies focuses on analysis of the policy ensemble associated with the National Strategy to Improve Literacy and Numeracy among Children and Young People 2011-2020 (DES, 2011). This includes an analysis of its draft iteration (DES, 2010) and Interim Review (DES, 2017). Her areas of interest include pedagogy (including online pedagogies), second language teaching and learning, and professional learning and development.

Pádraig Ó Duibhir is Director of SEALBHÚ, the DCU Research Centre for the Learning and Teaching of Irish. He gained extensive experience as a primary teacher and principal in the Irish-medium sector before his work in teacher education. Baineann na príomhspéiseanna

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Appendix A: Search Strategy

Overview –The overarching focus of the search strategy in this section was the development of literacy skills of Irish language speakers and learners, and linguistically diverse learners. The three broad categories of student are; (i) learners of Irish as a second language (L2), (ii) emergent speakers and speakers of Irish in Irish-medium settings (L1), and (iii) English as additional language (EAL) and migrant students who speak neither English or Irish at home.

Research Questions

1. How can the literacy skills (Irish) of students in English-medium (L2) settings be developed in ECEC, primary and post-primary schools? (oral language, reading and writing)?
2. How can the literacy skills of students in Gaeltacht and Irish-medium (L1) settings be developed in ECEC, primary and post-primary schools? (oral language, reading and writing)?
3. How can the literacy skills of EAL and migrant students be developed in ECEC, primary and post-primary schools? (oral language, reading and writing)?

Key Search Terms

In searching for suitable systematic reviews, meta-analyses and other literature to answer the questions above we searched the following databases using the key search terms described for each database.

Gaeilge search

EBSCO DE (subject heading): “second language acquisition or second language learning”

1. DE: second language acquisition OR second language learning OR second language teaching OR second language instruction
2. Second language acquisition OR second language learning OR biliteracy OR bilingual* OR multilingual*
3. Combine search 1 & 2 with OR
4. Run search 3 with meta-analysis or systematic review (default search) using AND.

Scopus

Subject area: social sciences

1. Second language acquisition OR second language learning OR second language teaching OR second language instruction OR biliteracy OR bilingual* OR multilingual*
2. Run search 1 with meta-analysis or systematic review (default search) using AND.
3. Run Search 2 with NOT adult* or “higher education”

Google Scholar

1. Second language AND Systematic Review in the title of the article
2. Second language AND Meta-Analysis in the title of the article
3. Biliteracy AND Meta-Analysis in the title of the article
4. Biliteracy AND Systematic Review in the title of the article

ERIC

1. DE (subject heading): second language acquisition OR second language learning OR second language teaching OR second language instruction
2. Second language acquisition OR second language learning OR biliteracy OR bilingual* OR multilingual*
3. Combine search 1 & 2 with OR
4. Run search 3 with meta-analysis or systematic review (default search) using AND
5. Run Search 4 with NOT adult* or “higher education” as a free text search and search title, abstract and keyword fields

language teaching or reading intervention, achievement, foreign language education or modern languages
elementary or primary; pre-primary or early childhood education or pre-school;
secondary education or post-primary school or middle-school education or high school education

EAL search

EBSCO

DE: “second language acquisition or second language learning”

1. - DE: second language acquisition or second language learning (as a Subject Heading)
2. Second language acquisition OR second language learning OR English language education or 'english as a foreign language' (as a free text search and search both title, abstract and keyword fields as an OR search)
3. Combine search 1 & 2 with search with OR
4. Run search 3 with meta-analysis or systematic review (default search) using AND

literacy AND (Second language acquisition OR second language learning or 'English language education' or 'English as a foreign language') AND (meta-analysis or systematic review)

ERIC

1. - DE: second language acquisition or second language learning (as a Subject Heading)
2. Second language acquisition OR second language learning OR English language education or 'English as a foreign language' (as a free text search and search both title, abstract and keyword fields as an OR search)
3. Combine search 1 & 2 with AND
4. Run search 3 with meta-analysis or systematic review (default search) using AND.

literacy AND (Second language acquisition OR second language learning or 'English language education' or 'English as a foreign language')) AND (meta-analysis or systematic review)

SCOPUS

Subject area: social sciences

1. 'Second language acquisition' OR 'second language learning' OR 'English language education' or 'English as a foreign language' (as a free text search and search both title, abstract and keyword fields as an **OR** search)
2. Run search 1 with meta-analysis or systematic review (default search) using AND

literacy AND (Second language acquisition OR second language learning or 'English language education' or 'English as a foreign language')) AND (meta-analysis or systematic review)

Google Scholar

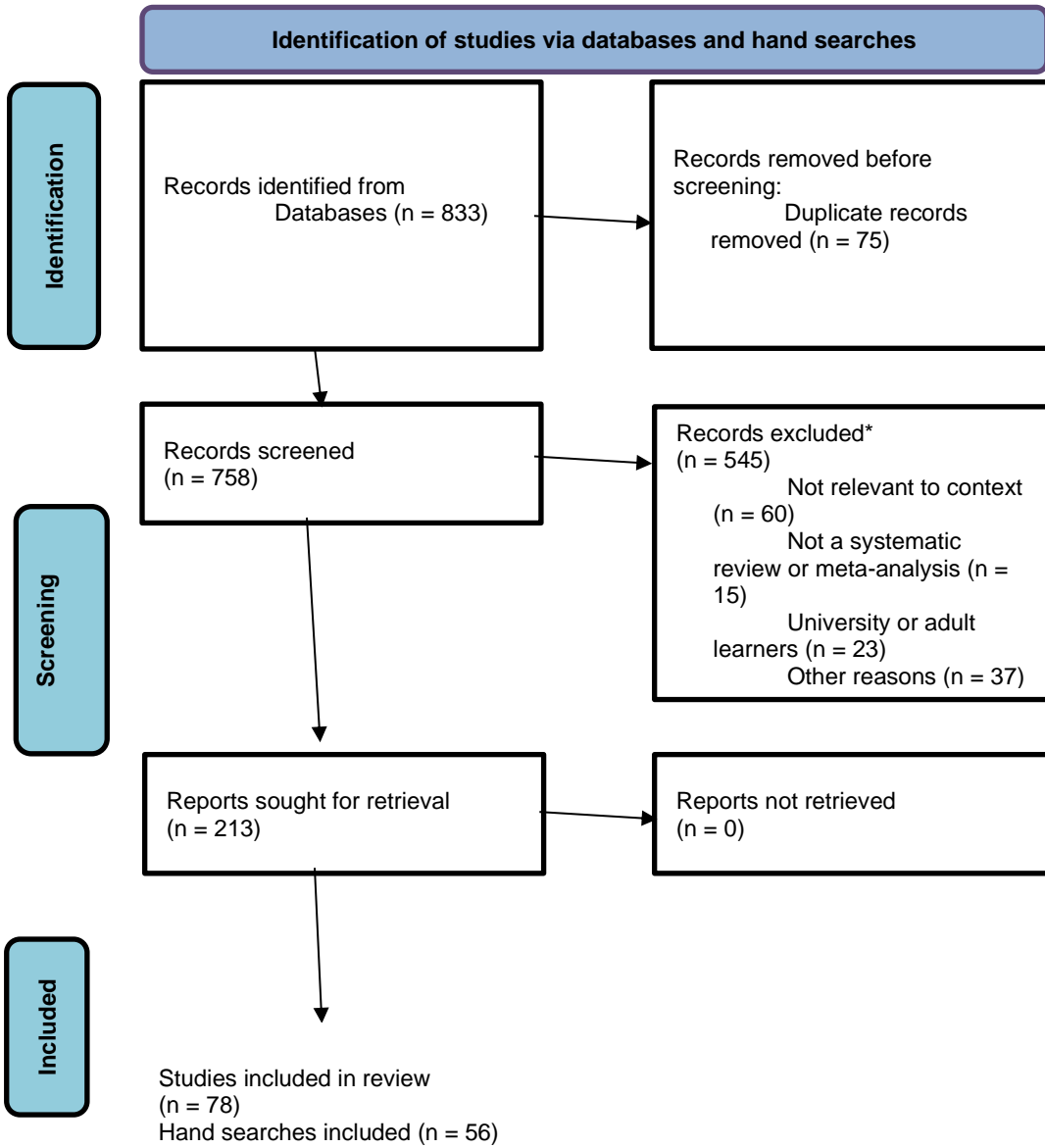
1. DE: second language acquisition or second language learning (as a Subject Heading)
2. Second language acquisition OR second language learning OR English language education or 'English as a foreign language' (as a free text search and search both title, abstract and keyword fields as an OR search)

Key Data Sources Consulted

Note: Literature in the systematic review should be from 2011 onwards, although reference may also be made to earlier seminal works. Examples:

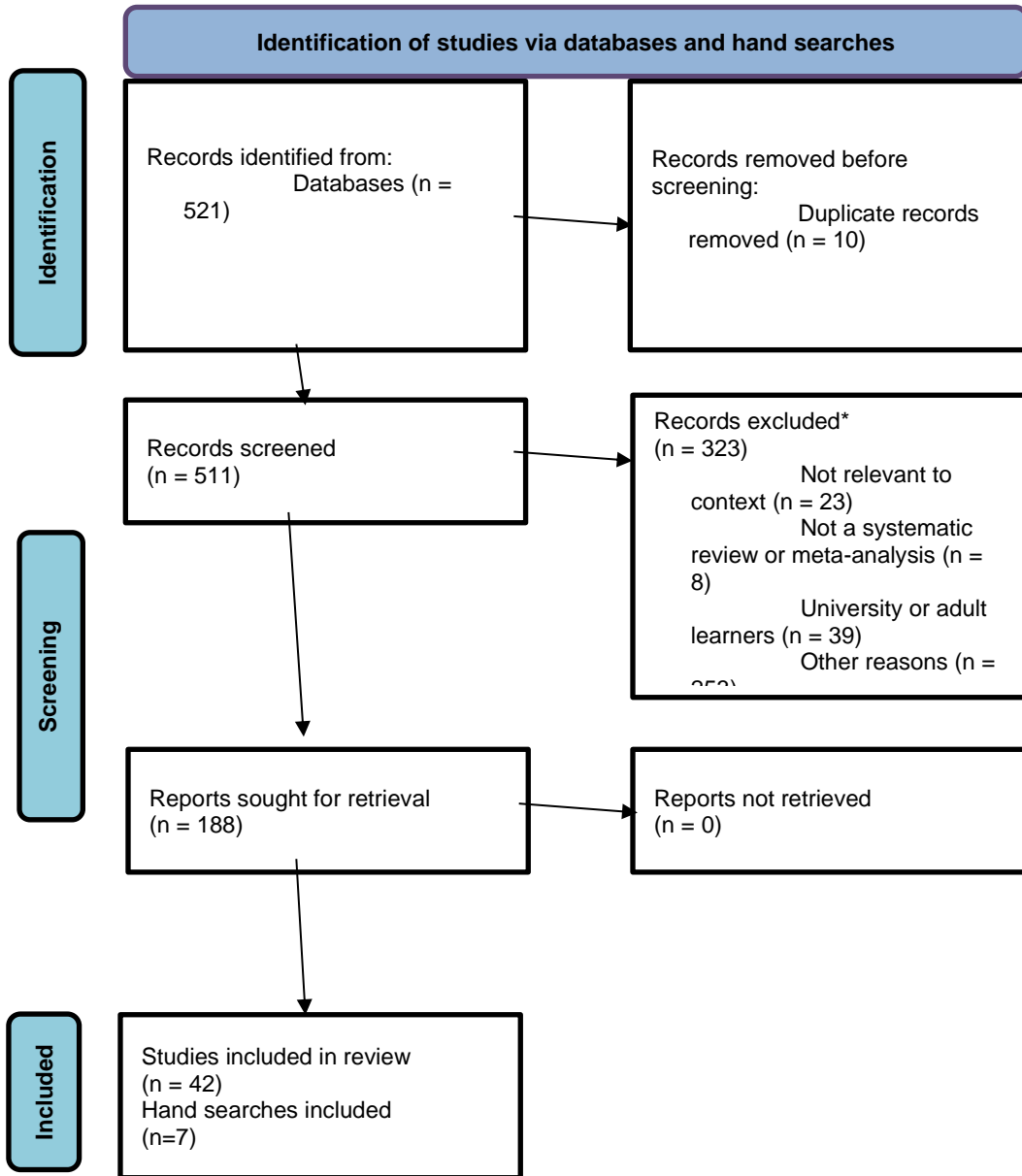
- SCOPUS, EBSCO, ERIC Linguistics and Language Behavior Abstracts, MathEduc.
- Google Scholar (to identify articles that might not appear in a systematic review)
- Handbooks in the field published since 2011
- 'Grey literature' (e.g., reports published by international and national organisations/governments – UNESCO, OECD, Dept of Education, NCCA etc.)
- International Database of Education Systematic Reviews (IDESR)

PRISMA Chart: Gaelge



*Records excluded following blind review by two reviewers using Covidence

PRISMA Chart: EAL



*Records excluded following blind review by two reviewers using Covidence

Appendix B: Tabulation of findings

Gaeilge T1/T2

Plurilingualism and Pluriliteracy				
Review	Number of studies	Effect size (if available)	Age range	Findings
Ducura, J. J., & Rozo, H. A. (2018). Biliteracy: A systematic literature review about strategies to teach and learn two languages. <i>Theory and Practice in Language Studies</i> , 8(10), 1307–1318.	122 studies	Various	preschool, primary, high school and higher education	Concluded that most strategies can be used from preschool to third level but require an appropriate group of people to deliver instruction in the best way. Some components such as phonological awareness have the same features, but a different methodology is required. Teachers are crucial in the process and development of biliteracy.
Melby-Lervag, M., & Lervag, A. (2011). Cross-Linguistic Transfer of Oral Language, Decoding, Phonological Awareness and Reading Comprehension: A Meta-Analysis of the Correlational Evidence.	47 studies	Oral language: This means that the correlation between L1 and L2 oral language was stable across age range (here 4:1 to 10:8 years). Decoding: It should be noted that all studies with an alphabetical L1	children/ youths (6-10 yrs)	A systematic review. In cross-linguistic transfer found an overall small but reliable correlation between L1 and L2 oral language skills. Larger correlation found in phonology and both language domains.

<i>Journal of Research in Reading</i> , 34(1), 114–135.		except one were based on English. Age had no significant impact on correlation size, $b = 0.16$, $p = .57$, $k = 15$, $R^2 = 0.03$ (age range 5:6 to 10:1 years).		
Reyes, I. (2012). Bilingualism among Children and Youths. <i>Reading Research Quarterly</i> , 47(3), 307–327.	A Review	Various	Children and youths	Looks at biliteracy as an outcome and guides us in documenting how emergent bilinguals achieve biliteracy, what biliteracy means in terms of competencies, and how specific programs or practices can support and maintain biliteracy.
Effective Second Language Teaching and Learning				
Brown, D. (2014). The type and linguistic foci of oral corrective feedback in the L2 classroom: A meta-analysis. <i>Language Teaching Research</i> 20(4), 436-458. https://doi.org/10.1177/1362168814563200	28	No single figure recorded	Various levels	Some research suggests prompts are generally more effective than recasts in L2 development (e.g., Lyster & Saito, 2010). Prompts, however, have been found to comprise only 30% of the teachers' CF. This suggests that their use of CF does not align closely with what is now known about CF effectiveness. There is a need therefore for more variety in CF choices by teachers. Experienced teachers seem to supply more prompts, and teachers generally should provide more prompts. If younger learners benefit more from prompts, as Lyster and Saito's (2010) findings suggest, it may be beneficial for teachers at the elementary level, in particular, to make more concerted effort at supplying prompts.

<p>Bryfonski, L., & McKay, T. H. (2019). TBLT implementation and evaluation: A meta-analysis. <i>Language Teaching Research</i>, 23(5), 603–632. https://doi.org/10.1177/1362168817744389</p>	<p>52 studies</p>	<p>Findings based on a sample of 52 studies revealed an overall positive and strong effect ($d = 0.93$) for TBLT implementation on a variety of learning outcomes.</p>	<p>Studies were conducted predominantly in K–12 ($k = 18$; 38%) or university settings ($k = 25$; 53%), with only 4 documenting task-based endeavors in language institutes.</p>	<p>A medium to large between groups effect of 0.93 supports the notion that program-wide implementation of TBLT is effective for promoting L2 learning above and beyond the learning found in programs with other, traditional or non-task-based pedagogies. TBLT showed positive effects for L2 outcomes in a wide range of diverse contexts. Stakeholders' perceptions of TBLT were positive. The majority of studies focused on students learning English (85%) in foreign language contexts (94%), mostly in intact, face-to-face classrooms (94%). This may impact on the transferability of findings.</p>

<p>DeKeyser, R. M. (2017). Knowledge and skill in SLA. In S. Loewen & M. Sato (Eds.), <i>The Routledge handbook of second language acquisition</i> (pp. 15–32).</p>	<p>Book Chapter</p>			<p>This chapter focuses on implicit and explicit knowledge of language and the proceduralisation and automatization of linguistic knowledge.</p>
<p>Gil-López, V., González-Víllora, S., & Hortigüela-Alcalá, D. (2021). Learning foreign languages through content and language integrated learning in physical education: A systematic review. <i>Porta Linguarum</i>, 2021(35), 165–182. https://doi.org/10.30827/portalin.v0i35.15785</p>	<p>35 studies</p>	<p>Only some studies reported effect sizes.</p>	<p>6-18 bl.</p>	<p>Results showed two types of studies: (a) Low-CLIL (low-intensity CLIL programmes) and (b) High-CLIL (high-intensity CLIL programmes). In relation to the student’s overall proficiency in the target language, one study found no significant differences between learners that participated in non-CLIL and low-intensity CLIL programmes. Significant benefits were found among students that participated in high-intensity CLIL programmes.</p> <p>PE was identified as an ideal subject for developing CLIL and target language learning as it provides a comprehensive education and encourages motivation, participation and interactive learning amongst the students through movement and play. While Ní Chróinín et al. (2016) concluded that students’ PE content learning was restricted by their target language knowledge, other researchers (Hernando et al., 2018) concluded that using CLIL through English as a target language is not a factor which implies a lower specific PE curricular learning.</p> <p>Research seems to confirm that CLIL has a higher success rate in developing</p>

				both written and oral skills in the target language than traditional methods.
Graham, K. M., Choi, Y., Davoodi, A., Razmeh, S., & Dixon, L. Q. (2018). Language and Content Outcomes of CLIL and EMI: A Systematic Review. <i>Latin American Journal of Content and Language Integrated Learning, 11</i> (1), 19–37. Doi: 10.5294/laclil.2018.11.1.2	25 Articles.	No effect sizes reported. Systematic literature review.	Mix primary, secondary, tertiary	This systematic literature review found mixed results which make it difficult to arrive at any conclusions about the effectiveness of Content Based Instruction (CBI). Many CBI programmes reviewed were elective programs that may naturally attract students with higher aptitudes or motivation toward foreign language learning. Second, in many of the studies reviewed, CBI courses were reported as having extra instruction time. Notwithstanding these limitations, most of the studies exploring language outcomes found CBI programs to do as well or better than non-CBI programs. The teaching of content provides opportunities to experience similar language repetitiously throughout units, therefore providing certain language input multiple times.
Kang, E. Y., Sok, S., & Han, Z. (2019). Thirty-five years of ISLA on form-focused instruction: A meta-analysis. <i>Language Teaching Research, 23</i> (4), 428–453.	54 studies	An overall large effect size, $g = 1.06$, 95 % CI = 0.84–1.29 for the effects of second language (L2) instruction	The majority of the participants were adults (55.6%, n	Fifty-four empirical studies over 35 years involving a total of 5,051 second language learners were aggregated for the effects of second language (L2) instruction, yielding an overall large effect size, $g = 1.06$, 95 % CI = 0.84–1.29. A minor difference was detected between explicit and implicit instruction and differs from previous meta-analyses (Norris &

			<p>= 31), followed by adolescents (18.5%, $n = 10$) and young learners (13%, $n = 7$). Three studies (5.6%) involved a mixed group of adults and adolescents.</p>	<p>Ortega, 2000; Goo et al., 2015). Modes of outcome measures, learners' onset L2 proficiency, research settings, and intensity of instruction were found to be significant moderator variables and are reported in the paper.</p>
<p>Raofi, S., Chan, S. H., Mukundan, J., & Rashid, S. M. (2014). Metacognition and second/foreign language learning. <i>English Language Teaching</i>, 7(1), 36–49.</p>	<p>33 studies</p>		<p>elementary school (two studies), high school (eight studies), university (eighteen studies),</p>	<p>Metacognitive intervention helps learners improve their language performance and metacognitive training can enhance metacognitive knowledge/strategy use although this is not significant in many studies with a control group. More research is needed to explore moderator variables. Metacognitive skills appear to be a strong indicator of language performance. Teachers should teach both content and metacognitive skills/strategies to support learners in becoming autonomous and self-regulated language learners.</p>

			adult not university (three studies)	
Raofi, S., Hoon Tan, B., & Heng Chan, S. (2012). Self-efficacy in Second/Foreign Language Learning Contexts. <i>English Language Teaching</i> , 5(11), p60. https://doi.org/10.5539/elt.v5n11p60	32 articles	Effect sizes not calculated	Mainly university students with some middle school or high-school aged students.	<p>The review of the research found that it was possible to affect the self-efficacy of students' L2 learning, and that student self-efficacy was one of the most influential independent variables on learner's performance and achievement within L2 contexts. Contextual variables such as classroom interaction were also found to be important. Teacher efficacy plays a vital role in stimulating students to exert the required effort in performing a specific task when students have experienced previous success in the specific task.</p> <p>Teachers can enhance the level of students' self-efficacy through several feasible teaching techniques. Performance accomplishment is a key factor for developing self-efficacy. Learners who have repeated experiences of success have higher self-efficacy than those students who experience repeated failure. Teachers should give learners some tasks that they can perform and build successful experiences. Positive feedback and encouragement from the teachers can also enhance students' self-efficacy. Self-efficacy can also be developed by providing students with opportunities to observe their classmates do tasks successfully.</p>

<p>Teimouri, Y., Goetze, J., & Plonsky, L. (2019). Second language anxiety and achievement: A meta-analysis. <i>Studies in Second Language Acquisition</i>, 41(2), 363-387. doi:10.1017/S0272263118000311</p>	<p>97</p>	<p>a mean of $r = -0.236$ for the relationship between L2 anxiety and language achievement</p>	<p>Elementary, high school, college.</p>	<p>This research provides firm evidence for both the negative role of L2 anxiety in L2 learning and the moderating effects of a number of (non)linguistic variables.</p> <p>The correlation is strongest among elementary school students and the weakest for students in private language institutes. More specifically, elementary students seemed to suffer more from the negative effects of anxiety. It seems that younger learners are less competent in dealing with anxiety and the environmental factors that generate these negative emotions. It may be the case that, when students grow older, they become more competent in taking control of their own learning by using a range of metacognitive and affective strategies to manage their anxiety.</p> <p>The target language being studied showed a substantial difference. The negative relationship between language anxiety and language achievement is stronger when the target language is not English. Furthermore, familiarity with the English language because of its international status and its widespread presence in people's daily lives globally (e.g.,</p>

				Internet) might also play a facilitative role in reducing anxiety
Yildiz, M. (2021). Language Choices of Language Teachers and Learners: Meta-Synthesis of Qualitative Research. <i>Journal of Language and Linguistic Studies</i> , 17, 472–492. https://dcu.idm.oclc.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ1285162&site=ehost-live&scope=site	34 qualitative studies	Synthesis of the findings of qualitative studies.	Mix of levels	<p>Many researchers advocate judicious use of L1 to minimize affective filters that adversely affect the process of language learning and to maximize the active participation of learners who feel relaxed and less nervous thanks to the comfort of L1 use.</p> <p>There is some support in this review for limited use of the students L1 for “explaining some aspects of the target language such as vocabulary or grammatical structures of the new language” (p. 486)</p>
Reading				
Al-hajji, B. A., & Shuqair, K. M. (2014). A Systematic Review on Using Literature for the Young Learners in an EFL Classroom. <i>English Language Teaching</i> , 7(8), 75–80.	N/A	Not available	Young learners	Discuss how there have been contradicting outcomes on the use of literature in the EFL classroom. Real literature can be frustrating and can discourage pupils from learning the language. This study concluded that the benefits of using literature are positive but depend on teacher application and methodologies and resources.
Cole, M. W. (2014). Speaking to read: Meta-	28 studies	peer-mediation is more effective for ELLs	Elementar	found that peer-mediation improved literary outcomes for ESLs and EFLs compared to teacher instruction or

analysis of peer-mediated learning for English language learners. <i>Journal of Literacy Research</i> , 46(3), 358–382.		than individualized or teacher-centered comparison conditions (g=.486, SE=.121, p<.001)	y, middle and high school	individual learning. Different variables that affect the findings are discussed.
Fitton, L., McIlraith, A. L., & Wood, C. L. (2018). Shared Book Reading Interventions with English Learners: A Meta-Analysis. <i>Review of Educational Research</i> , 88(5), 712–751.	15 studies	overall significant positive effect (127 vs. 93 effect sizes, respectively) Hedge's g = 0.28 (p < .001, 95% CI = 0.18 to 0.38)	Primary	Positive overall findings for shared book experiences in the second language. Also found that a positive outcome did not support a threshold hypothesis or a need for a minimum proficiency in the language. Shared reading is discussed as a social and an educational practice and has potential for specific language and literacy interventions. It also found re-reading to be a positive strategy.
Huang, S., Willson, V., & Eslami, Z. (2012). The effects of task involvement load on L2 incidental vocabulary learning: A meta-analytic study. <i>Modern Language Journal</i> , 96(4), 544–557.	12 studies	Not available	Range	A synthesis of the effects of output tasks on incidental vocabulary learning in a second language. Found that pupils who performed a task outperformed those who simply read a text. Tasks with a higher level of involvement achieved better results.
Jeon, E.-Y., & Day, R. R. (2015). The effectiveness of core ER principles. <i>Reading in a Foreign</i>	51 groups	The summary effect can be considered trustworthy due to a large sample size (n = 51) and a small	Range	Discussion on the overall effectiveness of ER when adhering to the 5 core principles outlined by Bamford & Day. ER is more effective than intensive or traditional methods. Teachers need to be supported by

<p><i>Language</i>, 27(2), 302–307.</p>		<p>standard error (SE = 0.06).</p>		<p>school and government for successful outcomes. Year, setting and age played an important role in outcomes.</p>
<p>Jeon, E. H., & Yamashita, J. (2014). L2 Reading Comprehension and Its Correlates: A Meta-Analysis. <i>Language Learning</i>, 64(1), 160–212. https://doi.org/10.1111/lang.12034</p>	<p>67 studies</p>	<p>The results showed that L2 grammar knowledge ($r = .85$), L2 vocabulary knowledge ($r = .79$), and L2 decoding ($r = .56$) were the three strongest correlates of L2 reading comprehension. The six low-evidence correlates had moderate-to-strong mean correlations, with L2 listening comprehension being the strongest correlate ($r = .77$) and metacognition ($r = .32$) being the weakest correlate.</p>	<p>Child/adolescents</p>	<p>The relationship between L2 reading comprehension and ten correlates. In accordance with previous conclusions in the theoretical literature, the magnitude of correlations was the strongest for grammar and vocabulary knowledge.</p>
<p>Liu, J., & Zhang, J. (2018). The Effects of Extensive Reading on English Vocabulary Learning: A Meta-Analysis. <i>English</i></p>	<p>21 studies</p>	<p>$d = 3.26$</p>	<p>Children & university students</p>	<p>Conclude that ER has a significantly large effect on English vocabulary learning. Suggest that teachers use grade readers for extensive reading and use both comprehension questions and vocabulary exercise as methods to promote vocabulary learning in another language.</p>

<i>Language Teaching</i> , 11(6), 1–15.				
Ramezanali, N., Uchihara, T., & Faez, F. (2021). Efficacy of multimodal glossing on second language vocabulary learning: A meta-analysis. <i>TESOL Quarterly</i> , 55(1), 105–133.	22 studies	The overall effect of an additional gloss mode was medium ($g = 0.46$)	Primary, secondary, university, language institute	The results show that the overall effect of an additional gloss mode was medium ($g = 0.46$) for immediate posttests and small ($g = 0.28$) for delayed posttests. However, analyses of moderator variables indicated that the effect of additional gloss modes is influenced by a range of variables related to learner (e.g., proficiency), gloss (e.g., language), text (e.g., narrative vs. expository), and research design (e.g., test format). Importantly, adding an additional mode to single textual gloss enhances vocabulary learning, whereas adding a mode to dual glossing does not result in significantly better vocabulary learning. The findings suggest that using more than two gloss modes is not necessary because it does not always lead to better learning of new words.
Sorrell, D., & Brown, G. T. L. (2018). A comparative study of two interventions to support reading comprehension in primary-aged students. <i>International Journal of Comparative Education and Development</i> , 20(1), 67–87. https://doi.org/10.1108/IJCED-08-2017-0018	2 studies?	0.306	primary	Use of non-fiction for vocabulary development and L2 reading acquisition. Consistent with previous American research (Caswell and Duke, 1998; Duke, 2003), this study demonstrated that the explicit teaching of informational text structures had a small to large effect (depending on reading comprehension measure) on student performance.

<p>Snyder, E., Witmer, S. E., & Schmitt, H. (2017). English language learners and reading instruction: A review of the literature. <i>Preventing School Failure: Alternative Education for Children and Youth</i>, 61(2), 136–145. https://doi.org/10.1080/1045988X.2016.1219301</p>	<p>144 studies</p>	<p>Not available</p>	<p>Kindergarten to second grade/middle school</p>	<p>Investigation of effective reading interventions for ELLs. Found that vocabulary development was the most common intervention, followed by fluency, phonics, comprehension and phonemic awareness. General positive results for reading interventions with ELLs.</p>
<p>Wang, W. M. (2011). <i>The effect of repeated reading instruction on oral reading fluency and its impact on reading comprehension of Grade 5 English language learners</i>. Unpublished EdD dissertation, Alliant International University, San Diego https://eric.ed.gov/?id=ED534967</p>	<p>N/A</p>	<p>Not available</p>	<p>Primary, Grade 5</p>	<p>PhD thesis. This study examined the effect of repeated reading instruction on reading fluency and comprehension of Grade 5 English language learners in Taiwan. Found that an emphasis on lower-order processing skills can be improved through repeated reading and therefore improves oral reading fluency and comprehension.</p>
<p>Yanagisawa, A., Webb, S., & Uchihara, T. (2020). How do different forms of glossing contribute to L2</p>	<p>42 studies</p>	<p>Proportion of unknown words learned adopted as ESs</p>	<p>31 studies of university students, 6 studies</p>	<p>The results indicated that glossed reading led to significantly greater learning of words (45.3% and 33.4% on immediate and delayed posttests, respectively) than nonglossed reading (26.6% and 19.8%). Multiple-choice glosses were the most</p>

<p>vocabulary learning from reading? <i>Studies in Second Language Acquisition</i>, 42(2), 411–438. https://doi.org/10.1017/S0272263119000688</p>			<p>of language school students, and 5 studies of secondary school students</p>	<p>effective, and in-text glosses and glossaries were the least effective gloss types. L1 glosses yielded greater learning than L2 glosses. We found no interaction between language (L1, L2) and proficiency (beginner, intermediate, advanced), and no significant difference among modes of glossing (textual, pictorial, auditory). The current meta-analysis may provide substantial pedagogical implications as to how glosses should be provided for language teachers and material designers.</p>
<p>Yapp, D. J., de Graaff, R., & van den Bergh, H. (2021). Improving second language reading comprehension through reading strategies: A meta-analysis of L2 reading strategy interventions. <i>Journal of Second Language Studies</i>, 4(1), 154–192.</p>	<p>46 studies</p>	<p>0.91</p>		<p>Investigated the effectiveness of reading strategies and the benefits of a multi-strategy approach. Analysed ten strategies and a range of pedagogical approaches. Some strategies were more effective than others and some approaches were more effective with specific strategies. Further research is recommended.</p>
<p>Writing</p>				
<p>Barnes, E. (2017). <i>Dyslexia assessment and reading intervention for pupils in Irish-medium education: Insights into current practice and considerations for</i></p>	<p>MPhil thesis</p>	<p>N/A</p>	<p>Range</p>	<p>An analysis of the efficacy of dyslexia assessments and reading support provided for pupils in immersion and Gaeltacht settings in Ireland. This is done in the context of a discussion on dyslexia and the specific orthography of Irish.</p>

<p><i>improvement.</i> Unpublished MPhil thesis, Trinity College Dublin. www.cogg.ie</p>				
<p>Biber, D., Nekrasova, T., & Horn, B. (2011). <i>The Effectiveness of Feedback for L1-English and L2-Writing Development: A Meta-Analysis. TOEFL iBT™ Research Report. TOEFL iBT-14. ETS RR-11-05.</i> ETS Research Report Series. https://dcu.idm.oclc.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ1111175&site=ehost-live&scope=site</p>	25	Numerous reported	Ní fíos	Both L1 and L2 students show improvement in writing in response to feedback with L2 students and lower proficiency L2 students showing the highest levels of improvement. Feedback through comments focusing on both content and form has been found to be effective in improving holistic writing quality. Feedback as error location results in small or no gains whereas written comments show greater improvement in grammatical L2 competency. Feedback from sources other than the teacher e.g. from peers and computer are effective to improve L2 learners' writing.
<p>Elabdali, R. (2021). Are two heads really better than one? A meta-analysis of the L2 learning benefits of collaborative writing. <i>Journal of Second Language Writing</i>, 52.</p>	33	Medium mean effect size ($g=0.73$) for accuracy of collaboratively written tasks.	University (N = 26); Language institute (N = 3); High school (N = 3); Middle	Collaboratively written texts were found to be more accurate than individually written texts by two thirds of a SD unit $g = 0.73$ ($SD = 0.11$). The results of the research support the use of collaboratively written tasks in enabling students to write more accurately. Learners can draw on their joint L2 knowledge when writing collaboratively.

			school (N = 1)	
Graham, K. M., & Eslami, Z. R. (2020). Does the simple view of writing explain L2 writing development? A meta-analysis. <i>Reading Psychology, 41</i> (5), 485–511. https://doi.org/10.1080/02702711.2020.1768989	30	97 reported effect sizes were included in this study. Moderate effect sizes reported.	Elementary to adult English L2 learners. Mostly school age.	The results of this meta-analysis show that the Simple View of Writing likely applies to English L2 writing but it may not account for all variation and further research is needed. Results show that transcription (spelling and handwriting) accounted for 31.22%, vocabulary 24.83%, and oral language (speaking) 15.76% of variation in writing. As the meta-analysis found moderate effect sizes, component skills should be taught in the development of L2 writing skills.
Lu, X., & Kim, S. (2021). A systematic review of collaborative writing implementation in K-12 second language classrooms. <i>TEFLIN Journal, 32</i> (1), 50–71.	12	Effect sizes not calculated.	K-12	This review of research on writing outcomes found positive influences of collaborative writing on quality and quantity of L2 students writing. The contextual factors such as group arrangements in terms of language proficiency levels and contexts of interaction (i.e., face to face and online), may have an impact on aspects of collaborative writing. Collaborative writing tasks enabled L2 writers to co-construct knowledge about language through engaging in Language Related Episodes which improved both L2 writing skills and L2 communicative skills.
Phonological, phonemic, and morphological awareness				
Choe, S., Lee, K. A., & So, Y. (2020). The effects of phonemic	8 studies	The overall effect size of phonemic awareness instruction on listening		Recent area of research, hence smaller number of studies. Phonemic awareness instruction has a positive effect on learners' listening skills in L2 contexts.

<p>awareness instructions on L2 listening comprehension: A meta-analysis. <i>Journal of Asia TEFL</i>, 17(4), 1294–1309. Scopus.</p>		<p>skills was found to be large (Hedges' $g = 0.99$, lower bound = 0.82, upper bound = 1.61).</p>		<p>When it comes to the instruction types, instructions on a sound itself (i.e., phonemic awareness) turned out to be much more effective than phonics instructions when aiming at improving listening comprehension skills. It highlights the importance of phonemic awareness as a basic and essential skill in the L2 listening comprehension process in that having the ability to manipulate sound structures allows L2 learners to identify each individual sound from the spoken speech. Therefore, phonemic awareness instruction can help L2 learners equip themselves with the knowledge of the sound system of the new language, which is necessary for fluent L2 listening. This result implies that a reasonable amount of time, at least 10 hours, needs to be allocated for the phonemic awareness instruction to ensure its effect on L2 listening ability. The result also suggests that phonemic awareness instruction is both effective and practical for enhancing L2 listening skills. While the focus here has been on listening comprehension, these skills are essential for writing also</p>
<p>Jia, C., & Hew, K. F. (2021). Toward a set of design principles for decoding training: A systematic review of studies of English as a foreign/second language listening education. <i>Educational Research Review</i>, 33.</p>	<p>33 for quality synthesis and 13 for meta-analysis</p>	<p>Hedges's $g = 0.553$, CI = 0.348–0.759, 95% confidence interval, $p = 0.000$</p>	<p>Elementary levels but with some level of decoding knowledge</p>	<p>The meta-analysis in this study indicated that the decoding approach is more effective than non-decoding approaches in improving student listening ability. This review contributes to the literature by confirming that decoding training is effective for developing EFL learners' listening ability. In addition, it offers a rudimentary set of design principles for decoding training based on empirical evidence and theory-based rationales.</p>

<p>Lee, J., Jang, J., & Plonsky, L. (2015). The effectiveness of second language pronunciation instruction: A meta-analysis. <i>Applied Linguistics</i>, 36(3), 345-366. https://doi.org/10.1093/applin/amu040</p>	<p>86</p>	<p>Aggregated results showed a generally large effect for PI ($d = 0.89$ and 0.80 for N-weighted within- and between-group contrasts, respectively).</p>	<p>High school & University</p>	<p>In terms of overall effects of PI, the (weighted) within-group results showed that the learners who received instructional treatments improved by 0.89 standard deviation units in comparison with their pretreatment performance; the between-group analyses demonstrated that learners in experimental groups outperformed those in control groups by 0.80 standard deviation units. Because the confidence intervals of the effect sizes do not cross zero, both can be said to be statistically reliable. Overall, there was evidence for the positive effect of pronunciation instruction to post-primary age students.</p> <p>A more nuanced interpretation of this result, however, would also consider the fact that age effects are generally much stronger in second vs. foreign language contexts, where exposure is limited almost exclusively to classroom instruction (Trofimovich et al. 2009; Mun oz 2011).</p>
<p>Ke, S., Miller, R. T., Zhang, D., & Koda, K. (2021). Crosslinguistic Sharing of Morphological Awareness in Biliteracy Development: A Systematic Review and Meta-Analysis of Correlation Coefficients. <i>Language Learning</i>, 71(1), 8–54.</p>	<p>34 studies</p>	<p>(a) the correlation between first language (L1) and second language (L2) MA was small ($r = .30$); (b) the interlingual correlations between L1 MA and L2 word decoding and between L1 MA and L2 reading comprehension were both small ($r = .35, .39$, respectively); (c) the intralingual correlations between L2</p>	<p>kindergarten to 18</p>	<p>Found that morphological awareness correlated significantly across 10 languages and 4 writing systems. Relations between MA in the L1 and word decoding and comprehension in the L2 were small and significant. L2 MA and L2 reading comprehension were affected by age.</p>

		MA and L2 word decoding and between L2 MA and L2 reading comprehension were both moderate ($r = .46, .52$, respectively)		
McAndrews, M. (2019). Short periods of instruction improve learners' phonological categories for L2 suprasegmental features. <i>System</i> , 82, 151–160.	17 studies	$d=94$	64 ESL learners university students	The results of this meta-analysis indicate that instruction has a large, positive impact on the development of learners' phonological categories for L2 suprasegmental features. On average, groups of study participants who received instruction for a target suprasegmental feature scored nearly one standard deviation ($d=0.94$) higher than control groups on tests of suprasegmental feature categorization. The large effect of instruction held for study participants who previously had less than one semester of instruction in the target language ($d=0.96$), as well as for those who had been studying for a longer time ($d=0.81$)
Saito, K., & Plonsky, L. (2019). Effects of second language pronunciation teaching revisited: A proposed measurement framework and meta-analysis. <i>Language Learning</i> , 69(3), 652–708.	77 studies			Pronunciation teaching is most effective when it targets specific features and when outcomes are measured using controlled tasks. Pronunciation teaching benefits learners' awareness, noticing and understanding of aspects of L2 pronunciation. Its effectiveness on global (automatic) L2 pronunciation remained unclear. Pronunciation teaching should include opportunities for communicative use with correct pronunciation forms (i.e., proceduralization), and with a view to acquiring fluent and accurate use

				of L2 pronunciation, which would be compatible with knowledge automatization (DeKeyser, 2017).
Soto, X., Olszewski, A., & Goldstein, H. (2019). A Systematic Review of Phonological Awareness Interventions for Latino Children in Early and Primary Grades. <i>Journal of Early Intervention</i> , 41(4), 340–365.	17 studies		Early years	Specific to Latino children and English but two alphabetic languages and has comparisons with other languages. The findings from this review indicate the urgency for future research focusing on the effects of phonological awareness interventions for Latino preschoolers who are DLL. Phonological awareness skills are highly interrelated across children’s two languages. These recommendations are aligned with the Revised Linguistic Interdependence Hypothesis (Verhoeven, 2007), which postulates that DLL children with strong phonological awareness skills in one language can apply these skills to their second language.
Assessment				
Sparks, R. L. (2016). Myths about foreign language learning and learning disabilities. <i>Foreign Language Annals</i> , 49(2), 252–270.	Not a systematic review.	N/A	High school and university	There is no empirical evidence to support a unique disability for foreign language (FL) learning. Advocates of a disability for FL learning have ignored the empirical evidence, which substantiates that there is, in fact, not a special relationship between FL learning and LDs, nor is there a unique disability for FL learning.
von Hagen, A., Kohnen, S., & Stadie, N. (2021). Foreign language	15 studies	Various standardized mean differences calculated	children/a dolescent s with	It is commonly believed that students with poor literacy skills show a lower target language attainment than their peers with typical literacy skills.

<p>attainment of children/adolescents with poor literacy skills: A systematic review and meta-analysis. <i>Educational Psychology Review</i>, 33(2), 459–488.</p>			<p>poor literacy skills</p>	<p>This review did not confirm those beliefs. Parents, teachers, and clinicians should keep in mind that an individual student with poor literacy skills might be just as successful as other students with typical literacy skills.</p> <p>All poor readers/spellers will struggle in learning a second language. Their L2 attainment should be closely monitored and support put in place when necessary.</p>
<p>Technology</p>				
<p>Acquah, E. O., & Katz, H. T. (2020). Digital game-based L2 learning outcomes for primary through high-school students: A systematic literature review. <i>Computers & Education</i>, 143.</p>	<p>26 articles</p>	<p>Effect sizes for separate studies presented along with % of overall positive outcomes for different indicators.</p>	<p>6-18 years old</p>	<p>Play and differentiation in Digital Game-based Language Learning (DGBLL) has been found to enhance language acquisition, affective/psychological state, contemporary competences, and participatory behaviour of primary through high school-age children. The authors state that consideration must be given to “player control, challenge (in one's ZPD), instant feedback, mystery, collaboration, goal orientation, clear rules, and when appropriate, competition”. Further research is needed on ways teachers can successfully and easily use DLGs as the success of GBBL lies in the integration of language learning goals with games. Six key game features were found to influence outcomes: ease-of-use, challenge, rewards and feedback, control or autonomy, goal-orientation, and interactivity. Rewards, cooperation, and goal-orientation resulted in positive affective and learning outcomes, while there were mixed outcomes for competition. The</p>

				differentiation in DLGs can support intrinsic motivation and learner autonomy. DLGs can be implemented successfully in schools to improve language skills and the language learning experience.
Bibauw, S., François, T., & Desmet, P. (2019). Discussing with a computer to practice a foreign language: Research synthesis and conceptual framework of dialogue-based CALL. <i>Computer Assisted Language Learning</i> , 32, 1–51. https://doi.org/10.1080/09588221.2018.1535508	343 publications	N/A	Elementary to university	Dialogue-based CALL enables learners to have a conversation in a foreign language with a computer. Research found positive effects for this on motivation and L2 development. These systems have been used with more engagement by university students (more than to younger learners) and intrinsically motivated learners and have had a stronger impact on beginners and lower intermediate learners. Research indicates largely positive findings for the effects of Computer Assisted Language Learning (CALL) treatments on L2 learning outcomes
Bond, M. (2020). Facilitating student engagement through the flipped learning approach in K-12: A systematic review. <i>Computers & Education</i> , 151, 103819. https://doi.org/10.1016/j.compedu.2020.103819	107 articles, book chapters, dissertations, conference papers and grey literature were included for review,		K-12	Studies in this review found flipped learning to strongly support student engagement, with 93% of studies citing at least one dimension of behavioural, affective or cognitive engagement. 50% of studies reported facets of disengagement. Google Docs, Google Classroom and Edmodo which are collaborative technologies were particularly linked to engagement, with videos not created by teachers more likely to lead to disengagement. Further research is needed in this area.
Borona, S., Tambouris, E., & Tarabanis, K. (2018). The use of 3D multi-user virtual environments in	32 studies	N/A	Mostly 18-25 yr olds.	Virtual environments are immersive, and virtual worlds that could enhance second language learning, but more investigation is required.

<p>computer assisted second language learning: A systematic literature review. <i>International Journal of Learning Technology</i>, 13, 249. https://doi.org/10.1504/IJLT.2018.095963</p>				
<p>Burston, J. (2015). Twenty years of MALL project implementation: A meta-analysis of learning outcomes. <i>ReCALL</i>, 27(1), 4–20.</p>	<p>19 studies</p>	<p>Not included due to weakness in research methodology and different variables in suitable studies.</p>	<p>10 adult 9 school age</p>	<p>The learning outcomes of Mobile Assisted Language Learning (MALL) implementations were unquestionably positive in nearly 80% of the cases included here. The research included nineteen studies. Fifteen studies showed unequivocally positive results of MALL on reading, listening and speaking. Four studies focusing on vocabulary showed no significant differences. MALL has the potential to improve language learning by increasing time spent on language learning outside of school, by facilitating task-based learning and by promoting collaborative interaction in L2. Basic mobile phones (11/19) accounted for the majority of mobile devices used and vocabulary acquisition (11/19) was the single largest skill targeted.</p>

<p>Chen, Z., Chen, W., Jia, J., & An, H. (2020). The effects of using mobile devices on language learning: A meta-analysis. <i>Educational Technology Research and Development</i>, 68(4), 1769–1789.</p>	<p>80 experimental and quasi-experimental studies</p>	<p>A medium-to-high effect size of 0.722 was found for the overall effectiveness of using mobile devices for language learning. Moderator effect sizes reported in paper.</p>	<p>Elementary school, secondary school, postsecondary, and mixed.</p>	<p>Findings show that the use of mobile devices for language learning is more effective than conventional methods. Nine moderator variables were analysed. Educational level, implementation duration, device type, instructional approach, learning context and application type were not statistically significant moderators. Effect size increased with educational level perhaps because of informal learning with older students. Applications developed for educational purposes accounted for larger effect sizes. Students benefited more from using mobile devices to learn L2 rather than L1. Using mobile devices to learn English was more effective than learning other languages. More success has been achieved with the use of MALL to support speaking, listening, writing and vocabulary rather than reading. There is a need for more research on the efficacy for MALL for languages other than English as the target language was a significant moderator variable in this study.</p>
<p>Dehghanzadeh, H., Fardanesh, H., Hatami, J., Talaei, E., & Noroozi, O. (2019). Using gamification to support learning English as a second language: A systematic review. <i>Computer Assisted Language Learning</i>, 1–24. https://doi.org/10.1080/09588221.2019.1648298</p>	<p>22 publications</p>	<p>No overall effect size. Effect size presented separately for some of the studies.</p>	<p>High schools (10) Higher education (7), elementary schools (4)</p>	<p>Studies reported positive effects for gamification on learners' language learning experiences and learning outcomes. Positive learning experiences of gamified LESL environments included being enjoyable, engaging, motivating and fun. Specific elements of gamification were not linked to learning experiences/outcomes. Feedback was a commonly used element for gamifying LESL and vocabulary learning was the most commonly reported positive learning outcome. There is a need for more robust research and to link specific elements of gaming to language outcomes.</p>

<p>Fu, Q.-K. (2018). Impacts of Mobile Technologies, Systems and Resources on Language Learning: A Systematic Review of Selected Journal Publications from 2007-2016. <i>Knowledge Management & E-Learning, 10</i>(4), 375–388.</p>	<p>86 papers</p>	<p>Not stated</p>	<p>Not stated</p>	<p>Many benefits of using mobile devices or mobile learning systems/resources for language acquisition were reported in many studies, for example increasing opportunities for language learning and creating authentic learning environments. Challenges reported were lack of practice time and weaknesses in learning strategies. How best to embed teaching strategies into systems and resources should be considered. Connecting in-class and out-of-class learning should be considered, along with how to support students as they learn to use mobile technologies. The educational potential of social interactive free software such as Facebook and Twitter should be investigated.</p>
<p>Hao, T., Wang, Z., & Ardasheva, Y. (2021). Technology-assisted vocabulary learning for EFL learners: A Meta-Analysis. <i>Journal of Research on Educational Effectiveness, 14</i>(3), 645–667. https://doi.org/10.1080/19345747.2021.1917028</p>	<p>45 studies</p>	<p>Large effect size for L2 assisted vocabulary learning ($g = .84$)</p>	<p>Preschool to college</p>	<p>Learning L2 vocabulary with technology was more effective than learning L2 vocabulary without technology. Mobile devices were particularly effective to support outside of class learning. Various moderators: device type, game condition, setting, test format, and reported reliability affected test results.</p>
<p>Lin, J.-J., & Lin, H. (2019). Mobile-assisted ESL/EFL vocabulary learning: A systematic review and meta-analysis. <i>Computer</i></p>	<p>33 studies</p>	<p>An overall positive and large effect size ($ES^+ = 0.94$) was found for mobile L2 vocabulary learning</p>	<p>More than 50% of the studies recruited college-</p>	<p>This meta-analysis of 33 studies reported a large positive effect of mobile-assisted L2 word learning interventions yet this needs more investigation due to flaws in research designs. Research settings, treatment durations, and task-afforded autonomy were significant moderator variables. When mobile</p>

<p><i>Assisted Language Learning</i>, 32(8), 878–919.</p>		<p>A total of 33 eligible studies included in this meta-analysis with the random effects model generated a weighted mean effect size of 1.005 (95% CI =0.787 to 1.223)</p>	<p>level learners as participants ($N = 19$), followed by middle (secondary) school ($N = 5$) and elementary school learners ($N = 5$).</p>	<p>technologies were used both inside and outside of class, this was more effective than when used within formal/informal settings alone. Learners with more autonomy showed greater effect sizes, yet language proficiency should be considered in relation to autonomous learning. In this analysis medium intervention time generated greater performance than shorter or longer intervention time. L2 vocabulary learning app studies with large effect sizes had particular features such as: (i) interactive and authentic learning (ii) an adaptive system of mobile applications, and (iii) storylines, rewards and missions. Mobile technologies can be considered effective supplementary tools to support L2 word retention. Both implicit and explicit learning should be considered and how best to motivate students to learn outside of class.</p>
<p>Peng, H., Jager, S., & Lowie, W. (2020). Narrative review and meta-analysis of MALL research on L2 skills. <i>ReCALL</i>. 33(3), 278-295. https://doi.org/10.1017/S0958344020000221</p>	<p>17 studies</p>	<p>Results yielded a large effect size ($d = .94$) for mobile technology applications on language learning. Learners exposed to mobile-mediated learning substantially outperformed those receiving other treatments like traditional classroom-based instructions ($d = .95$, $p < .01$).</p>	<p>Secondary 3, Elementary 5 College 7 Not stated 2</p>	<p>This meta-analysis showed a large effect for mobile technologies in language learning. MALL benefitted the four global language skills, i.e., listening, reading, speaking and writing. Type of activities, modality of delivery, and duration of treatment may be significant moderator variables. Teachers should consider how best to integrate MALL with language learning to exploit its learning potential. Shorter term interventions were more effective here. It is suggested that teachers could diversify MALL practices and take advantage of the ‘technology-novelty effect’ to engage learners.</p>

		For the four specific skills, mobile technologies benefited writing ($d = 1.33$, $p = .05$); and listening ($d = .99$, $p < .05$) the most, exerting a large effect respectively. They are followed by reading ($d = .52$, $p < .05$) and speaking ($d = .46$, $p < .05$), where only small-to-medium effects were found.		
Persson, V., & Nouri, J. (2018). A systematic review of second language learning with mobile technologies. <i>International Journal of Emerging Technologies in Learning</i> , 13(2), 188–210. .	54 articles	Not reported	20 papers (38%) formal higher education ; primary school (14 studies, 27% of selected papers), particularly in a formal context	Mobile Assisted Second Language Learning (MASLL) showed a positive effect of MASLL on L2 learning in terms of improvement in language proficiency or learning motivation or both. MASLL was most often implemented to improve vocabulary and general skills development, its impact on reading, writing, listening and oral skills has been investigated less.

			(22%); kindergarten/preschool (2%), secondary school (12%) or mixed groups (6%)	
Pinto, R. D., Peixoto, B., Melo, M., Cabral, L., & Bessa, M. (2021). Foreign language learning gamification using virtual reality—A systematic review of empirical research. <i>Education Sciences</i> , 11(5). https://doi.org/10.3390/educsci11050222	32 studies (16 articles & 16 conference proceedings)	Not available	Primary education (28.1%); lower secondary or second basic education stage (15.6%); (28.1%) did not inform the stage; (28.8%) covered other	75% of studies showed that virtual reality could be used as a gamification tool to learn a foreign language. Due to the lack of targeted investigation, it is recommended that technologies are used to support second language learning rather than entirely replacing traditional approaches.

			stages.	
Plonsky, L., & Ziegler, N. (2016). The CALL-SLA Interface: Insights from a second-order synthesis. <i>Language Learning & Technology</i> , 20(2), 17–37.	14 quantitative meta-analyses	Statistical results indicate a small relative effect ($ES = .512$) for the use of technology in L2 learning, suggesting that learners participating in CALL contexts may have better learning outcomes than those in traditional educational contexts. Absolute effects also provide strong evidence for the efficacy of CALL ($ES = .84$). Results demonstrate positive benefits for CALL glossing ($ES = .60$) and CMC ($ES = .33$) relative to non-CALL contexts.	Mixed	Research shows a largely positive effect ($ES = .84$) of CALL on L2 learning outcomes which may surpass benefits of Face-to-Face learning ($ES = .51$) A small to medium relative effect glossing ($ES = .60$) was found for CALL and a small relative effect ($ES = .33$) was found for computer mediated communication (CMC). More research is needed to further assess the effectiveness of CALL.
Segaran, M. K., & Hasim, Z. (2021). Self-regulated learning through ePortfolio: A meta-analysis. <i>Malaysian Journal of Learning and Instruction</i> , 18(1), 131–156.	9 studies	N/A	Elementary to PG	This research analysed how self-regulated learning (SRL) contributes to positive academic outcomes with ePortfolio as a medium. It was found that all nine studies included in this review emphasised different research methods and reported significant changes in students' academic outcomes. Three themes in SRL were discovered, namely metacognition, collaboration and motivation based on the

				<p>interpretation of the authors. Research has been consistent in showing that successful SRL learners are able to learn effectively when they can comprehend what they should do with a task and when they should do it, while also understanding how to do it and why they need to do it. Such systematic thinking (metacognition) helps learners to understand how language works and allows them to shape their learning through strategic manoeuvres.</p>
<p>Sung, Y.-T., Chang, K.-E., & Yang, J.-M. (2015). How effective are mobile devices for language learning? A meta-analysis. <i>Educational Research Review, 16</i>, 68–84. https://doi.org/10.1016/j.edurev.2015.09.001</p>	<p>44 peer-reviewed journal articles and doctoral dissertations</p>	<p>Mobile-device-assisted language instruction has produced a meaningful improvement with an overall mean effect size of 0.55.</p>	<p>Kindergarten (1), elementary school (18), middle school (9), high school (3), college (12), adults (1) and mixed (3)</p>	<p>MALL showed a positive effect on L2 learning and effect sizes differed according to moderator variables. The following conclusions were drawn: 1. MALL was beneficial for both adults and school children. 2. Handheld devices had larger effect sizes than laptops. 3. Learning-oriented software and general-purpose software showed similar positive effects. 4. The functionalities of mobile devices in multiple learning settings showed larger effect sizes than the more restricted settings in classrooms or outdoors. 5. Integrating mobiles with multiple teaching/learning strategies produced better effects/learning achievement than with one style of teaching/learning only e.g., lectures, or inquiry-oriented or cooperative learning. 6. Midterm interventions (1-6 months) produced better outcomes than very-short-term (1 week) and long-term (>6 months) interventions. 7. MALL produced better effects/learning achievement for vocabulary or mixed language skills than for single skills such as listening and reading. 8. MALL was more effective on L2 rather than L1 learning. More research is needed on how teachers can successfully implement MALL and on the</p>

				effectiveness of MALL for languages other than English.
Tsai, Y.-L., & Tsai, C.-C. (2018). Digital game-based second-language vocabulary learning and conditions of research designs: A meta-analysis study. <i>Computers & Education, 125</i> , 345–357.	26 published studies	A large overall effect size ($d=0.986$, CI [0.590–1.382], $p=0.000$) for Condition 1, indicating that DGBL significantly outperformed alternative activities on students' L2 vocabulary gains. The results for Condition 2 ($d=0.445$, CI [0.218–0.672], $p=0.000$) indicate that the added-or-changed features had an overall potential to significantly increase the effectiveness of digital games by a medium effect size compared to digital games in their base versions. Conditions 3: significant medium-to-large overall effect size ($d=0.733$, CI [0.376–1.091], $p=0.000$) is reported, indicating that digital games were	Primary: preschool & elementary; Middle: junior 7 seniors school; High-school, University	This study found that Digital Game-Based learning (DGBL) was superior to traditional instruction on L2 vocabulary outcomes by a large effect size. Four conditions were investigated. Condition 1: (10 studies - experimental groups playing digital games versus control groups receiving alternative activities), this showed a large overall effect size; Condition 2: (10 studies -experimental groups playing digital games with a feature added or changed versus control groups playing base-version games) this showed a medium effect size: Condition 3:(2 studies- experimental groups playing digital games and control/comparison groups receiving identical content via conventional means), this showed medium to large effect size and Condition 4 (4 studies - all participants playing the same digital games but being grouped by a non-game related variable), findings were non-significant. There was a large effect size for university students ($d=1.241$, $df=3$, $p < 0.001$) as well as for preschool and elementary students ($d=1.128$, $df=3$, junior and senior high school students ($d=0.310$, $df=1$, $p < 0.05$). Moderator analysis was conducted to examine how eight potential moderator variables (game design, educational level, L2 proficiency level, linguistic distance, intervention setting, assessment type, game source and intervention length) influenced the effect sizes in Conditions 1 and 2. DGBL may be particularly suitable when university students, with beyond-

		more effective for L2 vocabulary learning compared to other means with an equivalent content. The p value (d=0.503, CI [-0.840–1.846], p=0.463) shows a non-significant overall effect size for Condition 4.		beginning L2 proficiency, play task-oriented digital games. Educators should consider the quality and learning goals of games before use.
Vitta, J. P., & Al-Hoorie, A. H. (2020). The flipped classroom in second language learning: A meta-analysis. <i>Language Teaching Research</i> . https://doi.org/10.1177/1362168820981403	56	Results showed that flipped classrooms outperformed traditional classrooms, $g = 0.99$, 95% CI (0.81, 1.17), $z = 10.90$, $p < .001$. Applying the Trim and Fill method for publication bias made it shrink to $g = 0.58$, 95% CI (0.37, 0.78).	Secondary 10 University 48	Flipped learning was found to be effective for L2 learning overall, although younger learners and languages other than English are underrepresented. Results in this analysis showed that flipped learning outperformed traditional classrooms. Higher proficiency yielded higher effect sizes.
Zhang, R., Zou, D., Xie, H., Au, O. T. S., & Wang, F. L. (2020). A systematic review of research on e-book-based language learning.	52 studies		“Pre-school”, “Primary”, “Secondary”, “Tertiary”	Although the present review has found the overall positive influence of e-books on language learning, the specific aspects of language knowledge that the EBLL improved are not sufficiently discussed.

<i>Knowledge Management & E-Learning: An International Journal</i> , 12(1), 106–128. https://doi.org/10.34105/j.kmel.2020.12.006			or higher education”, “The mixed”	
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EAL

Review	No. of studies	Effect size (If available)	Age range	Findings
Oral Language				
Bryfonski, L. & McKay, T. (2019). TBLT Implementation and Evaluation: A Meta-Analysis. <i>Language Teaching Research</i> , 23(5), 603-632 https://doi.org/10.1177/1362168817744389	52	overall positive and strong effect (d = 0.93) for TBLT implementation on a variety of learning outcomes.	Primary-adult	-program-wide implementation of Task based language learning (TBLT) is more effective for promoting second language learning than other, traditional or non-task-based pedagogies. -TBLT programs were positively received by learners and teachers -TBLT is an effective pedagogy in a variety of contexts for learners at different levels, institutions and countries
Chen, Z., Chen, W., Jia, J. & An, H. (2020). The Effects of Using Mobile Devices on Language Learning: A Meta-Analysis, <i>Educational Technology Research and Development</i> , 68(4), 1769-1789.	85	Post-secondary educational settings, yielded a large effect (g = 0.843, p < .001). A medium effect size was found for kindergarten/ preschool children (g = 0.493, p < .001), elementary school students	Primary-university	-potential to enhance language learning, such as improving the interactivity and mobility of the learning experience and engaging learners in situated learning, augmented reality and game-based learning (Godwin-Jones <u>2016</u> , <u>2017</u> ; Naismith et al. <u>2004</u> ; Reinders and Pegrum <u>2017</u>). -language learning through mobile devices is more effective than the conventional instructional approach. -self-directed learning is the major type of learning approaches in MALL studies. -Adults had the largest effect size and young children had the smallest effect size

		($g = 0.603$, $p < .001$) and secondary school students ($g = 0.653$, $p < .001$) engaging in MALL.		
Kang, E., Sok, S. & Han, Z. (2019). Thirty-Five Years of ISLA on Form-Focused Instruction: A Meta-Analysis. <i>Language Teaching Research</i> , 23(4), 428-453.	54	Overall aggregated large effect size, $g = 1.06$, 95 % CI = 0.84–1.29.	k-adult	<ul style="list-style-type: none"> -explicit ($g = 1.11$) and implicit ($g = 1.38$) instruction were found to have a large effect on L2 learning in immediate posttests -implicit instruction ($g = 1.76$) appeared to have a significantly more durable impact on learning, according to delayed outcome measures, than explicit instruction ($g = 0.77$). -the efficacy of computer-based L2 interaction is not significantly different from face-to-face instruction
Miller, P. & Pan, W. (2012). Recasts in the L2 classroom: A meta-analytic review. <i>International Journal of Educational Research</i> , 56(1), 48-59.	17	average weighted effect size of 0.38. (modestly significant effect)	Primary-adult	<ul style="list-style-type: none"> -recasts may raise language learners' level of awareness of grammar. -it might have an influence on output, but not on the developmental system. -through recasts EAL learners are exposed to the L2 and are also provided with many opportunities to interact in the L2 and to correct mistakes and errors. -recasts may enhance instruction, but learner's progress must be monitored to ensure that they notice their errors -Recasts should be used in conjunction with other instructional techniques (see, for example, Brandi, 2007, Omaggio Hadley, 2000).
Persson, V. & Nouri, J. (2018). A systematic review of second language learning with mobile technologies, <i>International Journal</i>	54		Primary-university	<ul style="list-style-type: none"> -L2 learners can improve their vocabulary by the use of different educational applications such as context-aware games that allow play and learning in a real environment.

<i>of Emerging Technologies in Learning</i> , 13(2), 188-210.				<ul style="list-style-type: none"> -MALL supports ubiquitous learning as it provides access to learning material outside the classroom -use of task-based activities supported by mobile devices e.g., podcast for listening skills. -MALL allows for the creation of personalized material -share this material with other students by using mobile applications, blogs, and social networks, which increases the collaboration between peers and teachers.
Thompson, C. G., & von Gillern, S. (2020). Video-game based instruction for vocabulary acquisition with English language learners: A Bayesian meta-analysis. <i>Educational Research Review</i> , 30(2020) 1003322.	19	moderately large effect	Primary-adult	-video gaming enhances English vocabulary acquisition when integrated into educational contexts
Uchihara, T., Webb, S. & Yanagisawa, A. (2019). The effects of repetition on incidental vocabulary learning: A meta-analysis of correlational studies. <i>Language Learning</i> , 69(3), 559-599.	26	($r = .34$)	All	-Results showed that there was a medium effect ($r = .34$) of repetition on incidental vocabulary learning.
Wang, C. Lan, Y. Tseng, W. Lin, Yen-Ting R. & Gupta, Kao C. (2020). On the effects of 3D virtual worlds in language learning: A meta-analysis	13	Significant overall linguistic gains ($d = .832$) and affective gains ($d = .531$)	Primary, secondary and college	-knowledge was transmitted to learners during culturally immersed events. -Interaction also reflected situated learning, in terms of collaboration (Chen, 2013) and authenticity (Mohsen, 2016). high engagement through interactions with the objects or contexts,

<p><i>Computer Assisted Language Learning</i>, 33(8), 891-915.</p>		<p>The VR type platform designed for games obtained a large effect size ($d = .992$) but the social type of 3DVWs obtained a moderate effect size ($d = .507$).</p>		<p>-3DVWs with educational games yielded more positive outcomes than did the social type of 3DVWS Except for speaking ($d = .195$), the other five language skills showed quite large effect sizes. As for writing, it corresponded to a moderate achievement ($d = .617$).</p> <p>-task-based instruction, game, and the teacher-based approach used in 3DVWs show signs of good learning activities and these approaches led to great linguistic gains.</p>
<p>Webb, S., Yanagisawa, A., & Uchihara, T. (2020). How Effective Are Intentional Vocabulary-Learning Activities? A Meta-Analysis. <i>Modern Language Journal</i>, 104(4), 715-738.</p>	<p>22</p>	<p>average learning gains were 60.1% and 58.5% on meaning-recall and form-recall immediate posttests. These gains dropped to 39.4% and 25.1% on delayed meaning- and form-recall tests, respectively.</p>	<p>Primary-adult</p>	<p>-In the direct teaching of vocabulary, flashcards were found to be most effective (77.0%), followed by word lists (73.2%), writing (54.8%), and fill-in-the-blanks (43.1%).</p> <p>-intentional vocabulary learning is quite effective when measured by immediate post-tests</p> <p>-delayed posttests indicate that the direct learning of vocabulary is not fully retained as posttests revealed a much smaller gain as only 9.4% and 25.1% of target words were learned on meaning-recall and form-recall delayed posttests, respectively.</p> <p>- Explicit word learning needs to be complimented with repeated encounters with the target vocabulary (Webb & Nation, 2017).</p>
<p>Reading</p>				
<p>August, D., McCardle, P., & Shanahan, T., (2013). Developing Literacy in English Language Learners: Findings from a Review of the Experimental Research, <i>School</i></p>				<p>-EAL pupils benefit from explicit instruction in phonological awareness, phonics, vocabulary, oral reading fluency, reading comprehension, and writing. Some adaptations may be required for EAL instruction compared to native speakers of English.</p> <p>-Instruction in phonics and phonological awareness if particularly effective for EAL pupils when it is</p>

<p><i>Psychology Review</i>, 43(4), 490-498.</p>			<p>combined with increased exposure to English texts and when instruction is tailored to EAL pupil's needs (e.g. spending more time on sounds that do not exist in their home language) (Giambo & McKinney, 2004).</p> <ul style="list-style-type: none"> -Grouping of students according to their instructional needs, mastery learning with frequent teacher modeling, opportunities for practice, and review of learning has been found to be particularly effective with EAL pupils (Gunn, Biglan, Smolkowski, & Ary, 2000; Kamps et al., 2007; Lovett et al., 2008). -effective fluency instruction incorporates efforts to ensure that EAL pupils understand what they are reading, explicit decoding or a more comprehensive programme that incorporates the explicit teaching of decoding and comprehension. -Fluency increased when students were taught in small groups or one-on-one settings with tutors. -effective approaches to teaching vocabulary included directly teaching individual words, immersing students in language-rich environments, and teaching word learning strategies -effective approaches to reading comprehension instruction included emphasized meaning and language development, including enriched book environments within the school day, enhanced discussion emphases, intensive word meaning study, building background knowledge by previewing key, providing brief story introductions prior to reading, questioning throughout reading to enhance comprehension and showing students video clips related to the text prior to reading.
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				<ul style="list-style-type: none"> -evidence that EAL pupils' writing can be improved by explicit instruction on how to revise -collaborative writing is generally more effective when combined with explicit teacher instruction. -teaching writing strategies to EAL pupils has been found to increase achievement.
Choi, E. Oh, K., Yoon, Sung M. & Hong, S. (2012). A literature review of implementing response to intervention for English language learners. <i>Journal of Special Education Apprenticeship, 1</i> (2)	26		Elementary and secondary	<ul style="list-style-type: none"> -include cultural competencies into reading interventions for EAL pupils. -intervention should be provided in English and in their native language to maximise outcomes.
Fitton, L., McIlraith, A. & Wood, C. (2018). Shared book reading interventions with English learners: A Meta-Analysis. <i>Review of Educational Research, 88</i> (5), 712-751.	54			<ul style="list-style-type: none"> -Results revealed an overall significant, positive effect of shared reading on English learners' outcome -These results support shared book reading as an early educational activity for young English learners.
Goodwin, A., & Ahn, S. (2013). A meta-analysis of morphological interventions in English: Effects on literacy outcomes for school-age children. <i>Scientific Studies of Reading, 17</i> (4), 257-285.	30	<p>moderate overall effect of morphological instruction ($d = 0.32$), There were significant and moderate intervention effects on morphological knowledge ($d = 0.44$), phonological awareness ($d = 0.48$),</p>	Pre k -12	<ul style="list-style-type: none"> -largest effects were for decoding, phonological awareness, and morphological knowledge - moderate effects for vocabulary and spelling -lack of overall effect on fluency and reading comprehension - various types of morphological instruction support literacy achievement.

		vocabulary ($d = 0.34$), decoding ($d = 0.59$), and spelling ($d = 0.30$) but not on reading comprehension or fluency.		
Hall, C., Roberts, G., Cho, E., McCulley, L., Carroll, M. & Vaughn, S. (2017). Reading instruction for English learners in the middle grades: A meta-analysis. <i>Educational Psychology Review</i> , 29(4), 763-794.	11	46 individual effect sizes and yielded a mean effect size of $g = 0.35$. For all comprehension measures, effects were larger for instruction that included both vocabulary and comprehension ($g = 0.39$) than for instruction that focused on vocabulary alone ($g = 0.08$).	Grade 4-8	-comprehension should be taught with vocabulary to increase effect size -effective intervention should include support for the student's first/home language, opportunities to respond in a variety of ways (pairs, groups, whole class, through writing), opportunities to read independently, use of high-interest texts or initial audio or video clip to anchor instruction to enhance motivation, intensive vocabulary instruction that involves multiple exposure to words in different and morphological and cross-linguistic aspects of word meaning and comprehension strategy instruction
Jeon, E. (2020). The effectiveness of ER on reading proficiency: A meta-analysis, <i>Reading in a Foreign Language</i> , 28(2), 246–265.	49	Small to medium effect was found in both study designs: experimental-versus control contrasts and pre-	Pre-school to adult	-higher effect was found in the adults than in the children and adolescents' group. -English as a foreign language (EFL) settings showed a higher effect than English as a second language (ESL) settings -computer reader stories had a higher effect than paper books.

		to-post-test contrasts.		<p>-ER as a part of curriculum showed the highest mean effect among ER types.</p> <p>-overall effectiveness of an ER approach compared to an intensive or traditional reading approach.</p>
Jouhar, M.R.; Rupley, W.H. (2021). The reading–writing connection based on independent reading and writing: A systematic review. <i>Reading and Writing Quarterly</i> , 37(2), 136-156.	13		grade one to college, native speakers and EAL pupils	<p>-independent reading enhances the overall quality of narrative and descriptive writing and increases output, mechanics, spelling accuracy, content, grammatical accuracy, and text organization.</p> <p>-independent reading failed to enhance vocabulary ratio, length of sentences, and sentence structure</p> <p>-independent writing improves literal reading comprehension for beginning, low-performing, and at-risk students (including EALs), and improves literal and inferential reading comprehension for normally achieving students.</p>
Lawson-Adams, J. & Dickinson, D.K. (2020). Building lexical representations with nonverbal supports, <i>Reading Research Quarterly</i> , 56(3), 603–622. doi:10.1002/rrq.326.	40		preschool to grade 2 (ELL and native speakers of English)	<p>-gestures, pictures, and sounds can help support word learning as it provides students with multimodal access to vocabulary learning (Rowe et al., 2013; Tellier, 2008), particularly relevant to the learning of academic vocabulary, (Townsend, Filippini, Collins, & Biancarosa, 2012).</p> <p>-studies featuring songs were particularly effective at encouraging student engagement (Madsen, 1991; Schunk, 1999).</p> <p>-engaging young children in discussions about words enhanced their word knowledge (Beck & McKeown, 2007)</p>
Ludwig, C., Guo, K. & Georgiou, G. (2019). Are reading interventions for English language learners effective? A meta-analysis, <i>Journal of Learning Disabilities</i> , 52(3), 220-231.	26	large effect on reading accuracy ($d = 1.221$) and reading fluency ($d = 0.802$), moderate effect on	Primary (mainly k and grade 1)	<p>-for real-word reading accuracy, intervention groups composed of more than five students were less effective than groups composed of two to five students</p> <p>-longer intervention sessions were less effective than shorter ones.</p>

		reading comprehension ($d = 0.499$).		-reading interventions should not be delayed until EAL pupils have reached a particular level of oral English proficiency.
Melby-Lervåg, M. & Lervåg, A. (2014). Reading comprehension and its underlying components in second-language learners: A meta-analysis of studies comparing first- and second-language learners. <i>Psychological Bulletin</i> , 140(2), 409-433.	82	576 effect sizes were calculated for reading comprehension and underlying components. second-language learners display a medium-sized deficit in reading comprehension compared to first language learners (pooled effect size $d = -0.62$), a large deficit in language comprehension (pooled effect size $d = -1.12$), but only small differences in phonological awareness (pooled effect size $d = -0.08$) and decoding (pooled effect size $d = -0.12$).	Elementary and secondary	-unless specific decoding problems are detected, interventions that aim to enhance reading comprehension problems among second-language learners should focus on language comprehension skills.

<p>Mitchell, C. (2018). Shared book reading interventions with English learners: A meta-analysis. <i>Education Week</i>, 38(1), 5-5.</p>	<p>54</p>	<p>The overall combined effect size, obtained using robust variance estimation with $r = .70$ for all within-group comparisons, for the impact of shared book reading on EALs' outcomes was positive and moderate: Hedge's $g = 0.28$ ($p < .001$, 95% CI = 0.18 to 0.38). The τ^2 values obtained as measures of variation in effect sizes ranged from .099 to .100 for $\rho = .00$ to $\rho = 1.00$. Effect sizes ranged from $g = -1.05$ to $g = 5.55$, with significant, large heterogeneity: $Q_E(53) = 253.78$, $p < .001$, $I^2 =$</p>	<p>0-12 approximate average age of participants across the studies was 6.33 years</p>	<p>Results revealed an overall significant, positive effect of shared reading on English learners' outcomes.</p>
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		79.12.obtained per study.		
Nakanishi, T. (2015). A meta-analysis of Extensive Reading Research. <i>TESOL Quarterly</i> , 49(1), 6-37.		medium effect sizes on group contrasts ($d = 0.46$) and pre-post contrasts ($d = 0.71$)	Primary-university	<ul style="list-style-type: none"> -extensive reading improves students' reading proficiency. -extensive reading could be one of the effective instructional components of a programme designed to improve reading proficiency. -extensive reading instruction improved student reading performance significantly – there was a medium effect size for both group contrasts ($d = 0.46$) and pre-post contrasts ($d = 0.71$).
Oxley, E., & de Cat, C. (2021). A systematic review of language and literacy interventions in children and adolescents with English as an additional language (EAL). <i>Language Learning Journal</i> , 49(3), 265-287.	26		Primary and secondary	<ul style="list-style-type: none"> -explicit vocabulary instruction and targeted oral language practice yield language gains for EAL learners -larger intervention gains in learners with the lowest initial pre-test scores. -Shared reading interventions show positive effects when combined with the pre-teaching of vocabulary, embedded definitions into the text, or post-reading reinforcement activities.
Snyder, E. Witmer, S. E., & Schmitt, H. (2017). English language learners and reading instruction: A review of the literature. <i>Preventing School Failure: Alternative Education for Children and Youth</i> ; 61(2), 136-145.	10		k-12	<ul style="list-style-type: none"> -interventions that include multiple reading components are most effective for phonemic awareness, phonics, fluency, and comprehension enhancement. -comprehension outcomes tend to be better when other basic reading skills (phonics, phonemic awareness, fluency, and vocabulary) are taught in addition to comprehension skills. -The exception to the benefits of multi-componential instruction is vocabulary, as all of the identified studies showing large vocabulary gains focused solely on vocabulary skills during the intervention.

<p>Silverman, R., Johnson, E. Keane, K., & Khanna, S. (2020). Beyond decoding: A meta-analysis of the effects of language comprehension interventions on K–5 students' language and literacy outcomes. <i>Reading Research Quarterly</i>, 55(S1), S207-S233.</p>	43	<p>large and statistically significant effects for vocabulary ($g=0.85$, $p < .01$), modest effects for listening comprehension ($g=0.10$, $p<.01$) and reading comprehension ($g= 0.19$, $p <.01$); positive and statistically significant effects were found on morphology ($g=1.14$, $p<.01$) and academic language ($g=0.08$, $p=.04$)</p>	elementary	<ul style="list-style-type: none"> -positive effects on vocabulary, listening comprehension, and reading comprehension but not on standardized measures of these outcomes. - multicomponent interventions and those that infuse technology had positive effects for EAL pupils.
Writing				
<p>Biber, D., Nekrasova, T., & Horn, B. (2011). The effectiveness of feedback for L1-English and L2-writing development: A meta-analysis, <i>TOEFL iBT™ Research Report. TOEFL iBT-14. ETS RR-11-05.</i></p>	306		Primary-adult	<ul style="list-style-type: none"> -feedback was found to result in gains in writing development. -written feedback is more effective than oral feedback for writing development -peer feedback is more effective than teacher feedback for L2-English students -commenting is more effective than error location -focus on form and content seems to be more effective than an exclusive focus on form.

<p>Lu, X.& Kim, S. (2021). A systematic review of collaborative writing implementation in k-12 second language classrooms. <i>Teflin Journal</i>, 32(1), 50-71.</p>	12		K-12	<p>-collaborative writing among L2 writers promotes interactions leading to their L2 development (Alghasab et al., 2019; Chu et al., 2017; Swain & Lapkin, 1998). -collaborative writing outcomes on the improvement of writing quality, quantity, and the development of writing skills.</p>
<p>Smith, B. E., Pacheco, M. B. & Khorosheva, M. (2021). Emergent bilingual students and digital multimodal composition: A systematic review of research in secondary classrooms. <i>Reading Research Quarterly</i> 2021, 56(1), 33-52.</p>	70		secondary	<p>-digital multimodal composing supports emergent bilingual students' identity expression - multimodal composition offers emergent bilinguals opportunities to expand their existing linguistic repertoires and to share their knowledge with an audience</p>
General Approaches				
<p>Adesope, O., Lavin, T., Thompson, T., & Ungerleider, C. (2011). Pedagogical strategies for teaching literacy to ESL immigrant students: A meta-analysis. <i>British Journal of Educational Psychology</i>, 81(4), 629-653.</p>	26	<p>Mean effect sizes vary from small to large, depending on instructional interventions and outcome constructs. Mean effect sizes vary from small to large, depending on instructional interventions and outcome constructs.</p>	k-6	<p>-Collaborative reading interventions, where children engage in oral interaction and cooperatively negotiate meaning of texts with their peers, produced larger effects than systematic phonics instruction and multimedia-assisted reading interventions.</p>

<p>Alsowat, H. (2020). Evidence-Based Practices of English Language Teaching: A Meta-Analysis of Meta-Analyses <i>English Language Teaching</i>, 13(11), 75-93.</p>	90		k-adult	<p>-language learning strategies had medium impact on language outcomes in general and generated the largest impact on speaking (d=0.90) -technology-based language learning had medium impact on language outcomes in general and generated the largest impact on vocabulary (d=0.98) -explicit instruction had medium impact on language outcomes in general and generated the largest impact on grammar (d=1.26) - mobile-based language learning had small impact on language outcomes in general and generated the largest impact on listening (d=0.73) -setting and educational level significantly moderated the impact of teaching practices on language outcomes.</p>
<p>Ardasheva, Y., Wang, Z., Adesope, O., & Valentine, Jeffrey C. (2017). Exploring Effectiveness and Moderators of Language Learning Strategy Instruction on Second Language and Self-Regulated Learning Outcomes. <i>Review of Educational Research</i>, 87(3), 544-582.</p>	53	<p>overall effects of SI were large, 0.78 and 0.87, for language and self-regulated learning, respectively.</p>	<p>Primary and secondary , university</p>	<p>-context (e.g., educational level, script differences), treatment (e.g., delivery agent), and methodology (e.g., pretest) characteristics were found to impact on strategy instruction effectiveness. -Strategy instruction is a useful instructional tool for second/foreign language classrooms.</p>
<p>Bowman-Perrott, L., deMarín, S., Mahadevan, L., & Etchells, M. (2016). Assessing the Academic, Social, and Language Production Outcomes of English Language Learners Engaged in Peer Tutoring: A Systematic Review. <i>Education & Treatment of Children</i>, 39(3), 359-388.</p>	17	<p>Individually recorded for each study across measures</p>	k-12	<p>-Findings suggest that EAL pupils benefit from peer tutoring academically, socially, and linguistically.</p>

<p>Cole, M. W. (2013). Rompiendo el Silencio: Meta-Analysis of the Effectiveness of Peer-Mediated Learning at Improving Language Outcomes for ELLs, <i>Bilingual Research Journal</i>, 36(2), 146-166. DOI: 10.1080/15235882.2013.814609</p>	32	<p>peer mediation is highly effective at promoting both oral ($g = .578, p = .000$) and written language ($g = .486, p = .000$).</p>	Elementary and secondary	<ul style="list-style-type: none"> -peer-mediation was more effective the more that students' home language was used for instruction -EAL pupils performed better in unsegregated environments that provided both language support services and the opportunity to interact with native-English-speaking peers. -Interventions had higher effect sizes when EAL pupils participated in interventions that utilized their native language than those using only English.
<p>Davoudi, M., & Sadeghi, N. A. (2015). A systematic review of research on questioning as a high-level cognitive strategy. <i>English Language Teaching</i>, 8(10), 76-90.</p>	40		Elementary to adult	<ul style="list-style-type: none"> -questioning is effective in developing critical thinking, writing ability, reading comprehension, subject matter learning, metacognitive skills, and scaffolding learning process. -Self-questioning enhances reading comprehension, effective strategies include: Questioning the Author, Socratic Method and reciprocal teaching.
<p>Dixon, L. Quentin; Z., Jing; Shin, J., Wu, S., Su, J., Burgess-Brigham, R., Gezer, M. Snow, C. (2012). What we know about second language acquisition: A synthesis from four perspectives, <i>Review of Educational Research</i>, 82(1), 5-60.</p>	71		Elementary and secondary	<ul style="list-style-type: none"> -language acquisition can be enhanced through robust home literacy practices, opportunities to use the target language informally, well-implemented specially-designed L2 educational programmes, and when sufficient time is given to L2 literacy instruction -L2 learners with little L2 exposure require explicit instruction to master grammar -L2 learners with first language (L1) skills are more successful - L2 learners require 3-7 years to reach L2 proficiency (younger learners may take longer but may have superior proficiency)
<p>Macaro, E., Handley, Z., & Walter, C. (2012). A systematic review of CALL in English as a Second Language: Focus on primary and</p>	47		Primary and secondary	<ul style="list-style-type: none"> -technology has a direct beneficial impact on linguistic outcomes is slight and inconclusive -impact indirectly and positively on learner attitudes and behaviours -may promote collaboration.

secondary Education, <i>Language Teaching</i> , 45(1), 1-43.				
Melby-Lervag, M., & Lervag, A. (2011). Cross-Linguistic Transfer of Oral Language, Decoding, Phonological Awareness and Reading Comprehension: A Meta-Analysis of the Correlational Evidence <i>Journal of Research in Reading</i> , 34(1), 114-135.	47	small meta-correlation between first (L1) and second (L2) oral language and a moderate to large correlation between L1 and L2 phonological awareness and decoding.	age of the samples ranged from 4:1 to 13:6 years	-small meta-correlation between first (L1) and second (L2) oral language and a moderate to large correlation between L1 and L2 phonological awareness and decoding.
Parmaxi, A. (2020). Virtual reality in language learning: a systematic review and implications for research and practice, <i>Interactive Learning Environments</i> , https://doi.org/10.1080/10494820.2020.1765392	26		All	<ul style="list-style-type: none"> -VR enhances student learning and the development of twenty-first century skills (e.g. collaboration, communication, problem solving, critical thinking) -VR provides access to places and situations not accessible in a traditional classroom - VR provides authenticity in the assessment of target language, it fosters interaction, enhances vocabulary acquisition, motivation, task engagement, vocabulary acquisition and promotion of cultural learning and decreases foreign language anxiety levels. –develops communicative competence and learner autonomy. -there are cases where the use of VR has not brought any significant increase in student learning -challenges include unstable technical difficulties (Chen, 2016a) and lack of multimodal resources (Tan et al., 2016). It is also a time-consuming and complex tool in its alignment with pedagogical goals (Kozlova & Priven, 2015)

Peng, H., Jager, S., & Lowie, W. (2020). Narrative review and meta-analysis of MALL research on L2 skills. <i>ReCALL</i> 33(3), 278-295.	17	17 studies with 22 effect sizes, generally large	k-adult	-large effect for mobile technologies in language learning, identified three variables (i.e., type of activities, modality of delivery, and duration of treatment) that might influence the effectiveness of mobile technologies, -redundancy effect and a novelty effect in MALL practice.
Pyle, D., Pyle, N., Lignugaris/Kraft, B., Duran, L., & Akers, J. (2017). Academic effects of peer-mediated interventions with English Language Learners. <i>Review of Educational Research</i> , 87(1), 103-133.	14	small to large effect sizes	k-12	-peer-mediated interventions for EAL pupils can have with medium to large effects on measures of phonemic awareness, vocabulary, and comprehension in comparison to teacher-mediated approaches.
Plonsky, L. (2011). The Effectiveness of Second Language Strategy Instruction: A Meta-Analysis <i>Language Learning</i> , 61(4), 993-1038.	61	small to medium overall effect of SI ($d = 0.49$).	Primary-adult	-the effectiveness of strategy instruction is dependent on whether it is level appropriate and based on pre-treatment measures of strategy use -instruction on both cognitive and metacognitive strategies is beneficial -strategy instruction is most effective when a ‘less-is-more approach’ is adopted -larger effects for longer treatments
Piazza, S., Rao, S., & Protacio, M. (2015). converging recommendations for culturally responsive literacy practices: students with learning disabilities, English language learners, and socioculturally diverse learners. <i>International Journal of Multicultural Education</i> , 17(3), 1-20.			Primary-adult	-culturally responsive practices in five key areas: dialogue, collaboration, visual representation, explicit instruction, and inquiry. -incorporate students’ cultural knowledge and lived experiences in instruction.