Pedagogical Strategies to Support Literacy Development at Post-Primary Level

A Review of the Literature

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Summary

- The reviews cited in this report highlight five "anchor literacy constructs": vocabulary, comprehension, discussion, motivation and intervention. Reynolds (2020) highlights that these anchor constructs need to be expanded to include the additional constructs of text selection and text complexity, digital literacy, disciplinary literacy and the integration of reading with writing.

- The future approach to literacy garnered from the evolving understanding over the century points to the necessity of collaboration amongst a multiplicity of participants, disciplines and practices. Collaboration from international, national and local partners alongside multi-disciplinary knowledge and skills will allow for dialogue on a literacy reconceptualisation which focuses on the holistic and multicausal literacy needs of the student.

- Recognising and understanding the needs of post-primary students in terms of their literacy development is absolutely vital for the success of literacy programmes. Literacy attainment and achievement of post primary students needs to move beyond the text-based model that is concerned with simply decoding words and extracting information to a *situational* model. Thus, any intervention to support reading needs to focus "not only on decoding and understanding words and sentences but also on link making and the activation of students' life experiences and perspectives" (Paul & Clark, 2016, p. 117).

- In the Irish context, the review of the junior and senior cycle curriculum positions us well to embed literacy and numeracy across the curriculum; it is essential that teachers continue to receive high quality professional development that addresses the needs of their specific context so that literacy development keeps pace with curriculum reform.

Recommendations

Pillar 2: Teachers and CPD (Teacher Education)

- Teachers need to be afforded time and space to engage in professional conversations about how they understand literacy in their subject disciplines and across the curriculum (Hasni et al., 2016; Kalinowski et al., 2019; Scott et al., 2018).
- Teachers need to engage with bespoke professional learning opportunities that are developed with the needs of their local school community in mind (Dwyer, 2013; 2020; Leu et al., 2018; Tamborg et al., 2018).
- The task of developing students' literacy skills needs to be embedded at the earliest stages of a teacher's professional development i.e. at the pre-service level. This enables student teachers to make the connections between learning and practice, and to implement a deeper knowledge of content instruction and pedagogy within field based school placements (Rose, 2011, Murnane et al, 2012)
- Nurturing empathetic insight needs to be embedded in the context of professional development and identity so that teachers can fully integrate literacy across the curriculum (Rose, 2011, Murnane et al, 2012).
- More attention needs to be given to profiling student voice and teacher voice to capture *their* experiences of what is working and not working at the level of classroom practice. This is particularly the case when it comes to capturing the experience of students. (Skerritt et al., 2021).

Pillar 3: School leadership

- Literacy development needs to be led, coordinated and evaluated at the level of the local school community (Toste et al., 2020).

Pillar 4: Curriculum and the learning experience

- Literacy must not be allowed to lag behind curriculum reform. Almost all reviews presented in this report highlight the need to embed literacy in the curriculum as well as the need to ensure that the revision of subject specific curricula must be aligned with literacy development (Wendt, 2013).
- Ongoing CPD is recommended to assist with the integration of key skills, particularly literacy skills, into classroom planning and practice. The ongoing need for senior cycle

students to understand academic language, comprehension strategies and complex texts are just some of the recommendations offered in the literature (Reynolds, 2020, 2021, Scammaca et al., 2016).

Pillar 5: Students with additional learning needs

- We need to recognise that teaching *students,* not programmes, works. Following on from this literacy programmes need to be designed to meet the needs of local communities (Graham et al., 2018; Toste et al, 2020).
- Teachers need to give sustained attention to subject specific vocabulary/key words. Students need ample opportunities to use subject specific vocabulary in writing/speaking/presenting (Moje, 2015).
- We need to focus on repeated reading interventions that incorporate the opportunity for students to preview the text with a model of good reading (e.g., an adult reader or audiotape reading of the text). Students make more gains in reading rate than students who do not preview the text or preview the text silently or on their own (e.g., Skinner et al., 1997).
- Reading and writing must be seen as related activities (Graham et al, 2018). Studies have also demonstrated that interventions that worked at primary may not have the same impact at post-primary level (Rose, 2011). For example, repetitive reading of the same passage in order to increase fluency becomes tedious for adolescent readers who would derive more benefit from the opportunity to work in group tasks that give them a sense of success e.g., presenting and evaluating information that's derived from "texts" in the broadest sense and in a manner that combines reading and writing, speaking and listening.

Introduction

An initial search using literacy at post primary yielded over 142 results. Fluency and oracy yielded a small number of articles of a review nature. Once the search criteria excluded English as a second language, literacy and technology and students with special educational needs, the search yielded fewer results. Including the search terms "meta-analysis" or "systematic review" also reduced the yield to less than 20 studies, many of which included elements on technology, students with additional learning needs etc. Hence, for the sake of a more rounded review some of these have been included here.

An observation: The relative number of systematic reviews (in comparison to primary) reflects an ongoing issue with literacy as post-primary level i.e. many teachers consider themselves to be teachers of subjects rather than literacy per se. As Murnane et al. (2012) point out:

> […] for schools and teachers to assume that students possess the literacy skills needed to learn in the disciplines is a critical mistake. So is leaving to English teachers the task of building the skills of weak readers. Success in enabling students to acquire core knowledge in the disciplines requires teaching subject-specific literacy skills to many students" (p. 93).

The point is also made by Wendt who maintains that the disparity that exists between teaching the content and teaching literacy will mean that many second level students will be unable to access the curriculum (Wendt, 2013). In order to anchor this systematic review of the literature, the first section outlines the evolution of literacy interventions.

An Evolving Understanding of Literacy Interventions

The quest to understand literacy development has generated over one hundred years of research and whilst there has been much progress over that time in our understanding of neurology, genetics, psychology, education and sociology, there remains a myriad of challenges in trying to assist students struggling with literacy. Scammacca et al. (2016) offer a systematic review of the published literature from 1914 to 2014. Their goal was to highlight the lessons of the past to inform the present and future research by focussing on interventions for students between the ages of 9-21 years. Their findings suggest that the future of literacy lies in a multidisciplinary dialogue which responds to the multi-causal nature of literacy disabilities (Scammaca et al., 2016, p.779). The past has demonstrated the comorbidity of literacy and the manner in which interventions improved when insights and developments from diverse fields were embraced.

Literacy emerges in this historical review as needing a holistic approach to the student. The role of cognitive psychology, metacognition and the implications of psycho-social behaviour have given powerful insight into how student motivation, self-efficacy and the importance of teacher-student relationships enhance literacy interventions (p.783). The meta-analysis points to the emergence of an increased focus on reading comprehension as one of significance for teachers today. Teachers have an important role in helping students to learn strategies to make sense and meaning from the different, relevant texts. New interventions include strategies for acquiring and using vocabulary and background knowledge to aid comprehension (p.781). Scammaca et al. (2016) encourage researchers, teachers and policy makers to move their approaches beyond the accepted standardised interventions to also including individualised interventions for students who need extra help even when student gains are incremental.

The role of the US government in the history of literacy interventions was highlighted as shaping the nature of these responses over the century. They call on governments to continue to support the design and evaluation of interventions for students across the age span, who respond inadequately to current literacy interventions. This includes not only large-scale standardised testing but also a more student-centred focus which aims to improve the knowledge and skills of teachers so that they can use student data to understand their struggling students and implement more effective treatments (p.782). They highlight that the age span also includes the older adolescent and recommend longitudinal studies to determine "if treatment effects are maintained over time periods longer than a few months after the conclusion of an intervention" (p.785).

The scope of the review is broad and offers a clear narrative of the development of literacy concepts over time. However, the limitations lie in the omission of a discussion of the impact of digital technology on reading interventions or even standardised testing. The behaviourist theories of learning were offered in data from the 1960s but there was no indication of the influence of constructivism on such reading interventions over the last two decades.

These limitations are addressed in further and more recent meta-analyses. Research from Reynolds (2021a; 2021b; 2020) draws on The Institute of Education Sciences (IES) practice guide for improving adolescent literacy written by Kamil et al. (2008) as a foundational approach to evidence-based literacy instruction. This guide highlights five anchor literacy constructs: vocabulary, comprehension, discussion, motivation and intervention and is consistently used by teachers, instructors and policy makers. However, only one of the

thirty-four studies underpinning this guide was conducted in a general high school classroom and it excluded linguistic diversity, while nearly half (44%) were conducted in special education settings (Reynolds, 2021a, p. 38). Drawing from meta-analysis research over the last decade, Reynolds (2020) suggests that all these five anchor literacy constructs need to be expanded in their understanding and suggests the additional constructs of text selection and text complexity; digital literacy; disciplinary literacy and the integration of writing with reading (2021, p.41). In each of his articles, Reynolds highlights the ongoing knowledge gaps between new evidence-based literacy possibilities and outdated sources and calls for the setting up of centers which "would be well positioned to expand on the historical strengths of literacy research and incorporate current findings" (2020, p.411).

Recommendations/implications for practice

The future approach to literacy garnered from the evolving understanding over the century points to the necessity of collaboration amongst a multiplicity of participants, disciplines and practices. Collaboration from international, national and local partners alongside multi-disciplinary knowledge and skills will allow for dialogue on a literacy reconceptualisation which focuses on the holistic and multicausal literacy needs of the student. A qualitative research approach which moves alongside numbers and statistics, might inform the way forward to discover, across all ages, what our educational response might be to literacy development in the future. This research needs to inform the professional development of teachers. This leads us to an examination of the literacy skills required for 21st century learners.

Literacy Skills for the 21st Century

In positioning students for literacy success, Goldman (2012) identifies four key skills that 21st century learners require in terms of literacy:

1. Successful readers must learn how to move beyond what text says to what text means and they need to be able to derive this meaning from traditional texts and multi-modal texts

2. Effective readers must be able to apply reading and interpretation skills differently depending on subject matter; students must be able to use different knowledge, reading, and reasoning processes to interpret a poem, for example in comparison to how they might understand and interpret historical/scientific facts .

3. Effective readers must be able to navigate, interpret and evaluate multi-modal forms of information for reliability, accuracy, levels of impartiality and completeness. Indeed, Goldman argues, the world wide web has raised the bar on what it means to be literate.

4. In analysing, synthesising, and integrating disparate material, readers must be able to connect information across multiple sources and evaluate whether the different sources are consistent. In attending to this task, readers must adopt an active, critical, questioning stance while reading (Goldman, 2012, p. 91).

To assist with developing these skills, Reynolds (2021b) offers a taxonomy of scaffolding for late adolescence in reading complex texts and navigating academic-language. At this stage of adolescence, the problem might not be about decoding words, but rather understanding the meaning of words and understanding the syntactic and discourse constructions in which the words are employed. He draws on six skills outlined by Uccelli (2015)   called   the   Core Academic Language Skills (CORE) framework.

- Connecting ideas logically
- Tracking participants and themes
- Unpacking complex words
- Unpacking complex sentences
- Recognising academic register
- Organising argumentative texts.

This offers a unique contribution to students' reading comprehension. Reynolds links this framework to a further framework on choosing complex texts RRSSVP (ACT, Inc. 2006): relationships, richness, structure, style, vocabulary and purpose. The combination of the two frameworks produced a taxonomy of scaffolding to assist the teacher in relevant selection and approach and might act as a framework for professional development.

Given the integration of technology in everyday life, post primary level students need high levels of reading ability to access knowledge through print and electronic sources. Reynolds (2021), drawing on the study from Goodwinet al. (2019), suggests that there are profound differences between reading on screen and reading presented on paper. With this in mind, Reynolds (2021) proposes that interventions for adolescent students can be assisted by better computer-adaptive assessments which can target adolescents' precise literacy needs such as decoding, morphology or vocabulary (p. 41). Since the pedagogical strategies, approaches and methodologies to support digital literacy are considered extensively in another report, the focus will now move to instructional strategies designed to improve students' reading comprehension skills.

The Impact of Instructional Strategies Designed to Support Students' Literacy Skills

    1. Combining reading and writing instruction

In 2017, Graham et al. investigated the effectiveness of teaching reading and writing as integrated activities. The focus of their study emerged from an international drive to enact a wide range of policies to enhance literacy levels across age groups with a particular emphasis on reading and writing. The authors note that while a large number of studies have focused on whether reading or writing interventions are effective in enhancing these key literacy skills, few, if any, studies have examined whether reading instruction enhances writing or vice versa. In their review, the authors report on literacy programmes that were balanced in terms of emphasis on reading and writing instruction. A study was not eligible for inclusion if more than 60% of instruction was devoted to either reading or writing. They focused on programmes where both reading and writing instruction received "relatively equal billing" (Graham et al., 2017, p.280).

    At the outset of their review the authors draw on a number of previous investigations to support their rationale for their focus on the integration of reading and writing. For example, Meyer et al., (2002) propose that "reading and writing instruction designed to increase students' knowledge about the functions and purposes of text should result in better reading and writing, as readers use such knowledge to help them understand an author's intent, whereas writers use such knowledge to guide their own writing and thinking about the expectations of the reader" (p.280).

    In providing the context for their review, the authors note that reading is generally more favoured than writing (Fitzgerald & Shanahan, 2000), and that it is also the case that curricula and materials for reading and writing are often developed by different groups of educators (Clifford, 1989).

    The purpose of Graham et al.'s meta-analysis was to test the basic assumption that performance or learning is enhanced when reading and writing are used together to achieve a desired goal. Accordingly, "reading and writing are tools that can be used together much as a carpenter might use a spirit level and sabre saw alternately when building something" (Shanahan, 2016, p. 195). Their meta-analysis focused on two questions in particular:

1. Do literacy programmes balancing reading and writing instruction improve students' reading and writing performance?
2. Is there a relation between features of the studies reviewed and effect sizes for reading and writing?

In light of their review of over thirty-seven studies that investigate the impact of programmes integrating reading and writing as constituent activities, the authors state that "programmes providing a balanced combination of reading and writing instruction should promote reading and writing growth, as such instruction can potentially increase and possibly deepen students' knowledge, understandings, and insights about how to read and write and how to use these two skills together to accomplish learning and other goals" (p.296).

The research summarized in this meta-analysis provides "reasons for optimisms about the impact of literacy programmes that balance reading and writing instruction on students' growth as readers". Eighteen out of every 20 studies produced a positive effect at post-test, resulting in "meaningful and significant improvements on composite measures of overall reading performance" (p.296).

The research also points to "reasons for optimism about the impact of literacy programmes balancing reading and writing instruction on students' growth as writers. Of the 37 true or quasi-experiments testing the impact of such programmes on writing development, 18 out of every 20 investigations produced a positive effect at post-test" (p.297).

Recommendations/implications for practice

While Graham et al.'s (2017) meta-analysis provides support for the assertion that literacy programmes balancing reading and writing instruction can enhance reading and writing performance, the authors also caution against the conclusion that it is a mistake to devote separate time to reading and writing. While reading and writing draw on shared knowledge and cognitive processes (Shanahan, 2016), they can also be learned separately. In concluding their meta-analysis, the Graham et al. note that "additional research is needed to determine how and under what conditions reading and writing instruction should be provided together and separately" (p.300). In terms of practice, teachers need to consider the time that is afforded to reading and writing as separate or integrated activities. As Graham et al. observed, the impact of reading and writing programmes that are balanced "may be greatest when reading and writing instruction are integrated together so instruction in each is purposefully designed to enhance both skills at the same time" (p. 282). It is also important to ask whether we value one activity, namely reading, above the other (Fitzgerald & Shanahan, 2000, p. 39).

Interestingly, in terms of future research, the authors suggest that there is an onus on all researchers investigating reading and writing programmes in school contexts to "do a better job" of providing information about participants involved in studies (p.300). In reflecting on their experience, the authors note that many of the studies had significant gaps in terms of

gender, race and socio-cultural background. In the authors' view, this information gap has a significant consequence not only for the studies they reviewed but for educational research more generally. The authors recommend that this kind of information gathering should be a priority in all future research.

2. Reading and Comprehension

Filderman et al. (2021) examined reading comprehension intervention in isolation in order to examine the relative effects of various approaches to comprehension instruction. Their meta-analysis investigate the effects of single component reading comprehension interventions on the reading comprehension outcomes of struggling readers in Grades 3 through 12 and the extent to which moderators, namely, participant (i.e., grade level), intervention (i.e., instructional approach and measure type), and study characteristics (i.e., average score across study quality ratings) moderate the effects. In the 64 studies included in this meta-analysis, struggling readers constituted a minimum of 50% of the sample or were disaggregated, and included students described by authors as having learning or reading disabilities, learning or reading difficulties, learning problems or disorders, or reading problems

Using the direct and inferential mediation (DIME) model of reading (Ahmed et al., 2016; Cromley et al., 2010; Cromley & Azevedo, 2007), the cognitive model (McKenna & Stahl, 2009), and prior research (Berkeley et al., 2010; Gajria et al., 2007; Gersten et al., 2001), Filderman et al. operationalised reading comprehension intervention as comprising four different instructional approaches: (a) strategy instruction, (b) background knowledge, (c) metacognitive approaches, and (d) instructional enhancements.

Findings demonstrate significant positive effects of reading comprehension intervention on comprehension outcomes. The findings also indicate that background knowledge and strategy instruction had significantly larger effects, instructional enhancements and standardized measurement had significantly lower effects, and grade level, metacognitive approaches, and study quality did not moderate effects.

This meta-analysis corroborates the benefit of comprehension strategy instruction identified in previous systematic reviews. In addition, it demonstrates the significant effect of comprehension intervention focused on building students' background knowledge. The authors note that their meta-analysis has implications for teachers, teacher educators and instructional coaches. They caution that while they investigated the effects of reading comprehension interventions provided in isolation, their meta-analysis should not be interpreted as support for providing comprehension instruction in isolation. They note that

most students who demonstrate comprehension difficulties continue to require explicit instruction in word-level decoding and fluency (Cirino et al., 2013; Clarke et al., 2010; Elwér et al., 2015). They also suggest that the findings from this meta-analysis may help to guide teachers in how to structure the comprehension portion of the multicomponent interventions they provide to struggling readers. They highlight that while their findings suggest that struggling readers benefit most from comprehension intervention focused on building background knowledge and the use of comprehension strategies, it is also important that teachers rely on the ability and knowledge of their students, the features of a text, and the instructional goals for the lesson to select an appropriate approach to comprehension intervention. Finally, they observe that the critical role that deep background knowledge plays in reading comprehension becomes increasingly important as students transition out of the primary grades and texts become increasingly complex.

3. Enhancing Fluency and Comprehension

Wexler et al. (2008) synthesise research studies on the efficacy of fluency interventions in enhancing the fluency and comprehension outcomes of secondary struggling readers. Their synthesis includes 19 intervention studies published between 1980 and 2005 on students in grades 6–12 (ages 11–21). They define struggling readers as low achievers, students with unidentified reading difficulties, dyslexia and/or reading, learning, or speech language disabilities.

Wexler et al. report that overall, studies show positive effects for interventions that employed repeated reading with a previewing condition in which students preview text in a variety of ways. Studies demonstrate that fluency outcomes were consistently improved following interventions that included listening passage previewing such as listening to an audiotape or adult model of good reading before attempting to read a passage. Findings indicate that repeated reading interventions that incorporate the opportunity for students to preview the text with a model of good reading (e.g., an adult reader or audiotape reading of the text) or someone to provide corrective feedback, make more gains in rate then students who do not preview the text or preview the text silently or on their own (e.g. Skinner et al., 1997). Results were not as positive for interventions that incorporated repeated reading without a model.

Findings from this synthesis also show that improved reading rate does not always result in improved comprehension (e.g., Rashotte & Torgeson, 1985) and gains in fluency from a repeated reading intervention do not necessarily generalize to other reading tasks such as

passage comprehension and word attack skills (e.g., Conte & Humphreys, 1989). Some studies demonstrated that reading text repeatedly may improve reading rate, but participants did not demonstrate as much improvememnt in comprehension and word reading accuracy as those who read an equal amount of text non-repetitively (Rashotte and Torgeson, 1985; Homan et al., 1993). In addition, there is preliminary evidence that there may be no differential effects between repeated reading interventions and the same amount of non-repetitive reading with older struggling readers for increasing reading speed, word recognition, and comprehension. Repeated reading interventions may be less effective for older readers, as spending time reading the same text repeatedly may not only sacrifice student exposure to text structure, vocabulary, and different subject matter, but these interventions may also have an element of boredom to them, which may negatively affect motivation levels of secondary struggling readers

Recommendations/ implications for practice

Wexier et al. identify two instructional implications from the outcomes of their synthesis. Firstly, they recommend that to increase potential benefits of repeated reading interventions, practitioners might consider combining repeated reading practice with some research-based comprehension strategy instruction to improve not only reading rate, but also comprehension. Secondly, they suggest that because motivation at the secondary level for struggling readers is a necessary consideration, practitioners may want to consider how to provide reading opportunities within appropriate text to reduce boredom and increase interest. While fluency practice remains an important part of becoming a more proficient reader, practitioners may want to consider having students practice reading the same amount of text non-repetitively as they would in a repeated reading intervention (i.e., reading four different passages rather than one passage four times).

4. Effective reading programmes

Baye et al. (2019) synthesised research on reading outcomes of programmes designed for middle and high school students. Specifically, they focus on identifying programmes and programme types that are able to accelerate the reading achievement of secondary students. Their review is in response to developments in evidence-based reform, especially in the United States and United Kingdom where a move towards the use of evidence in education is intended to identify and disseminate proven programmes, to improve outcomes for students. The authors draw on the 2015 Every Student Succeeds Act (ESSA) in the United States to determine which secondary reading approaches would meet ESSA evidence standards,

focusing not only on individual programmes but also on categories of approaches. Their review focuses on rigorous, mostly randomized, quantitative research evaluating secondary reading programmes. It includes studies carried out between 1990 and 2018 that met rigorous inclusion criteria, derived from the ESSA evidence standards for ratings of strong and moderate. A total of 69 studies evaluating 51 different programmes met the criteria of the review.

The authors categorise each programme's evaluated studies according to the most important and distinctive components. They identify ten strategy type program categories as follows: tutoring, cooperative learning programmes, whole-school approaches, writing-focused approaches, content-focused approaches, vocabulary-focused approaches, strategy-focused instruction, personalisation approaches, group/personalisation rotation approaches, and intensive group approaches. In addition to these categories, the authors analysed two cross-cutting factors: extra daily periods for reading instruction and use of technology. The number of programmes and studies in each category vary greatly, making conclusions about those with the fewest studies less conclusive than those with larger numbers.

Findings indicate that categories of programmes using one-to-one and small-group tutoring, cooperative learning, whole-school approaches including organizational reforms such as teacher teams, and writing-focused approaches showed positive outcomes. Individual approaches in a few other categories also showed positive impacts. Categories in which these individual programmes appear include programmes emphasising social studies/science, structured strategies, and personalised and group/personalization rotation approaches for struggling readers. Programmes that provide a daily extra period of reading and those utilising technology were no more effective, on average, than programmes that did not provide these resources. The findings suggest that secondary readers benefit more from socially- and cognitively-engaging instruction than from additional reading periods or technology. One interesting commonality was that programmes with positive outcomes tended to emphasise student motivation, student-to-student and student-to-teacher relationships, and socioemotional learning (Guthrie, 2015). Positive examples include cooperative learning which focuses on relationships and socio-emotional learning, and tutoring, which provides immediate feedback and potentially close teacher–student relationships.

Recommendations/implications for practice

These findings have a number of implications for practice. Firstly, reading programmes using tutoring need to be sufficiently resourced to allow for one-to-one and small-group tutoring, which enable teachers to personalise instruction to students' individual needs and to build

personal relationships with students. Interestingly, cross-age peer tutoring and volunteer tutoring approaches were not associated with positive outcomes, suggesting that the fostering of strong teacher student relationships is core to the success of tutoring programmes. Secondly, cooperative learning reading programmes are an effective means of tapping into the social motivations that drive much of adolescent behaviour. It is important that a positive supportive environment be established that enables students to work together, encourage one another, explain ideas to one another, and generate opportunities to ask others for help. Thirdly, whole-school approaches should include organizational elements (such as teacher teams where teachers share responsibility for all aspects of student development) designed to enhance the socio-emotional development of young adolescents. Whole-school approaches lacking organizational elements designed to enhance socio-emotional development did not show positive outcomes, suggesting that reading programmes that adopt whole-school approaches are more effective when part of a broader initiative to support student development.

Finally, Bay et al. report two unexpected outcomes: 1) the failure to find any impact of additional instructional time in reading; and 2) lack of impact of programmes emphasising technology. In relation to the provision of additional instruction time, they surmise that struggling readers may have been unhappy about having to take a remedial reading class (instead of art, music, or physical education, in most cases) and were not motivated to revisit material that they had difficulty with in elementary school. In terms of technology, they posit that teachers may not be comfortable with the specific technologies used. They note that among the few technology-focused programmes for secondary school that had positive impacts, all were older, well-established approaches that teachers may have found easier to implement. Two implications for practice arise from these unexpected outcomes. Firstly, removing students from class can be demoralising and demotivating for struggling readers and therefore this practice is best avoided. Secondly, it is imperative that adequate training and support are provided to teachers in the use of relevant digital technologies so that technology-focused programmes can be implemented successfully. A clear theme emerges from these reviews: if reading intervention programmes are to be successful, the student experience needs to be brought to the fore. The next section of this report considers this important theme.

5. Building Fluency: Keeping student experience to the fore

In her review of the literature that deals with the theme of building literacy at post-primary/secondary schools, Wendt (2013) notes that, while research indicates strategies to improve fluency at primary/elementary schools appear to have positive effects (Fang &

Schleppegrell, 2010), empirical evidence is lacking for the effectiveness of many of these techniques in the post-primary classroom (p.42).This is further exemplified in a recent meta-analysis by Steinle et al. (2022). In their study of reading fluency interventions, they found limited evidence to suggest that fluency interventions are effective in terms their impact on reading comprehension for struggling readers in grades 6-12. Interestingly, repeat reading techniques, where reading is modelled (usually by the teacher) and then repeated by the student until fluency has been reached have been found to have little impact in post-primary readers (e.g., Wexler et al.,2010). Even when fluency improves, comprehension and analysis may be absent. Wendt's review of the literature suggests that peer reading has some positive effects on reading fluency (McMaster et al.,2006; Wexler,et al.,2010). This involves partnering students with another teacher or student and assigning reading activities to peers. While this method appears to support reading progression and reading fluency, Wendt suggests that more research needs to be undertaken on the impact of peer reading on the multiple modalities of literacy (e.g. comparison, analysis, application etc) which in turn will enhance fluency.

Wendt cites Rose's three-tiered model (2011) as a way of improving not only fluency, but other aspects of literacy. In the first tier, students are encouraged to understand the basic "map" of the text, the purpose of the text and the general background of the text. This allows students to focus on the overall meaning of the text rather than getting "stuck" in unfamiliar or confusing terms. The second tier is more challenging; this phase involves closer analysis of the text so that students begin to see word patterns, relationships between words and word semantics. This phase involves an in-depth sharing of understanding about the text. The third tier is described by Rose as "sentence making, spelling and sentence writing" (p. 91); this phase involves the mixing and matching of phrases and sentences in order to enhance students' control of the language in the text. Rose describes the benefits of this three-tiered approach: "These activities provide practice in the foundation skills that all students need for reading with comprehension and writing fluently. But unlike standard literacy support activities, these skills are practised in the context of the curriculum texts that the class is studying, and can be integrated with the whole-class teaching programme rather than withdrawing struggling students to practise with low-level texts and decontextualised language features" (Rose, p.91). Students experience literacy development in the context of the curriculum rather than as a separate entity. Furthermore, by the time they engage with the third tier, students move from comprehension to expression.

Wendt's review then turns to "writing, dialogue, and other intervention strategies" (Wendt, p.45). She pays particular attention to Gallagher's and Ntelioglou's (2011) assertion that:

> [H]ow youth see themselves in the contexts in which they express their understandings, how they engage dialogically in the process of writing, how they imagine themselves into and create contextual sensitivity for worlds unfamiliar to them, and how they perform in a world can significantly shape their sense of mastery of language and communication.

In navigating these new worlds students find "new" ways of communicating; Wendt maintains that these new ways of communicating require us to focus on "social communication" in the classroom (p. 45). By focusing on the social aspect of literacy, students will experience language in a concrete and contextualised form rather than as an abstract concept removed from their everyday lives. Wendt notes that, while writing is certainly not a new literacy, it has changed in the face of technology. Students are adept at writing short, brief messages; this provides a useful platform for teachers to integrate this type of activity into literacy awareness and literacy development. It is also the case that students are more likely to enjoy and engage in collaborative work that focuses on shorter assignments (Sweeney, 2010). Furthermore, the opportunity to review, critique and provide peer feedback in an online (teacher moderated) environment may help to increase self-efficacy while decreasing "pressure and fear." (Wendt, p. 46).

In conclusion, Wendt notes the challenge faced by teachers to cover curriculum content in order to produce "high achieving students" has a serious and negative impact on teaching literacy. At its worst, the privileging of curriculum content over literacy will have a lasting and negative impact on students' literacy levels, particularly for students who are struggling with basic literacy skills. In her final remarks, Wendt notes: "[t]he literacy achievement of students is a shared responsibility, and the shifting of blame has done little good. Students depend on educators to teach literacy skills that are crucial for success in adulthood" (Wendt, p.46). The next section of this report examines the relationship between reading and motivation.

Reading and Motivation

Intrinsically related to our understanding of the experience of struggling readers is the relationship between reading and motivation. Motivation acts as a "powerful lever in enhancing reading proficiency and decreasing gaps between groups of students". PISA data consistently shows that engagement in reading is strongly correlated with reading performance and is a mediator of gender or socio-economic status", with the latter measured measured by

the PISA index of economic, social and cultural status [ESCS]; OECD, 2010[36]; OECD, 2002[37]). Significantly, in almost all PISA-participating countries and economies in 2018, girls reported spending more hours a week reading for enjoyment than boys. Girls spend about two hours more a week on average reading for pleasure than boys. Additionally, students from more advantaged socio-economic backgrounds also read, on average, more hours than students from less advantaged socio-economic backgrounds (OECD PISA, 20p.82). In terms of the Irish context, in 2018, significantly more males (56.1%) than females (39.4%) in Ireland reported that they did not read for enjoyment. Reading for enjoyment was significantly less frequent among students in DEIS schools (relative to students in non-DEIS schools) as well as among non-immigrant (native) students (relative to immigrant students) (McKeown et al., 2018; Shiel et al., 2022). While the statistical differences for male and female students and students in DEIS schools tend to be less evident in terms of the international report, these are important issues in an Irish context. In order to understand some of the issues reflected in these statistical differences, the next section of this review looks more closely at reading and motivation.

In their meta-analytical review of 132 articles with 185 independent samples and 1,154 reported effect sizes, Toste et al (2020) examined the relationship between reading and motivation. In their analysis and discussion of findings they highlight a complex and contentious issue: the conceptualisation of motivation. They note, "while there is scholarly agreement on various concepts that guide the study of motivation – intrinsic motivation supports human learning in a way that extrinsic motivation does not, for example – the field is plagued by inconsistency in the terminology used to describe motivation-related terms" (p.446). The authors in this review "opted for a conceptualisation that has theoretical grounding and would allow for coding of motivation constructs into meaningful categories" (p.423) in terms of goal orientation, beliefs and disposition. In employing these categories, the authors acknowledge the unlikelihood that these categories hold "equal relevance for students' reading performance" (p.423). Their review reported a statistically significant, moderate relation between motivation and reading, $r = .22$, $p = < .001$, derived from the combined results of132 articles and 185 independent samples (p. 442).

In their discussion/findings section, the Toste et al. pay particular attention to a key finding from their review of longitudinal studies. "While we argue that motivation may be a factor that serves as a determinant or regulator of performance over time, supported by the finding from our sub analysis of longitudinal studies, we caution interpretation of motivation as a general predictor of reading" (p.426).

As the authors note, the studies reviewed do not account for "student-level achievements" associated with reading e.g., background knowledge, processing speeds and/or executive function. This is a highly significant observation. Policy makers and educators often cite motivation as a key factor in reading success but, as these authors point out, "motivation constructs may play out differently for students" (p.443). This is not to undermine the role that motivation plays in reading development, but it is a reminder of the highly complex task in conceptualising motivation and the fundamental challenge in understanding the ability, aptitude and profile of the students whom we teach. Findings from the meta-analysis suggest that there is a critical need for future research to expand our understanding of how motivation is intertwined with early reading failure; we must also "explore mechanisms through which we might interrupt trajectories of declining motivation" (p.447). Furthermore, there is a need to continue to "investigate factors that moderate the relations between motivation and reading within a longitudinal framework" (p.448). This analysis of the connection between reading and motivation leads to an important question, how can we raise intrinsic motivation and increase reading for enjoyment or interest in reading for post primary students? The next section seeks to respond to this question.

How teachers and schools can facilitate students' reading motivation

Barber and Klauda (2020) suggest ways in which teachers and schools can support student motivation for reading. They begin by highlighting the role of teachers as 'powerful research-to-practice conduits', as, working together, teachers can learn from each other in terms of what motivates students and implement these ideas in the classroom. In addition, the authors make the point that school leaders and literacy specialists need to become knowledgeable about motivation theory and research so that they can create the types of literacy programmes that respond to the needs of individual schools. In practical terms, the allocation of time and funding for blocks of literacy must be set aside so that students can independently and collaboratively immerse in the extended reading, text-based discussion, and knowledge representation that characterise engaged reading (Taboada Barber et al., 2018; Wigfield et al., 2014).

In addition to these practical steps, Barber and Klauda (2020, p. 32) highlight the importance of "gaining knowledge of students' reading proclivities and interests" as a critical step in building motivation and engagement support into the classroom. This is key to self-efficacy and intrinsic motivation. Knowing which practices work best in supporting and

facilitating student motivation is the focus of the next section of this report. Facilitating motivation requires interventions that include student experience and perceptions.

In their meta-synthesis of twenty qualitative studies published between 2000 and 2020, Frankel et al. (2021) sought to examine the student experience of Reading Intervention Classes (RICS). Specifically, they examined studies which focused on year-long reading interventions that students engaged with alongside the traditional curriculum offering. In contrast to the many studies that focus primarily on assessment outcomes as determinants of quality, Frankel et al. aimed to develop a more holistic picture of students' direct experiences of and engagement with reading interventions and the factors that mediated those experiences.

In their analysis of the studies, they found several interconnected factors that mediated students' experiences of RICs. The reviewed studies reported that students did not identify or describe themselves in terms of their literacy levels, such as being weak or poor readers. The majority of students reported they voluntarily engaged with and enjoyed reading outside the classroom. In contrast, however, students described their histories as literacy learners more negatively. Many of the studies analysed by Frankel et al. reported that students experienced reading interventions as tedious, repetitive and with little choice for the learner. There was less frequent reporting of positive experiences of reading interventions, evidencing the contrast between students' positive experiences outside versus inside the literacy classroom.

It is unsurprising then that Frankel et al. found that, while students' literacy histories are varied, they are in many cases negative (Frankel, 2016; Ginsberg, 2020; Goering & Baker, 2010; Gomez et al., 2004; Greenleaf et al., 2001; Harmon et al., 2016; Houchen, 2013; Masterson, 2020; O'Brien et al., 2007; Sarroub & Pernicek, 2014; Skerrett, 2012; Wexler et al., 2015; Wissman et al., 2012). Student disenchantment with interventions and lack of agency were central themes within the literature. Additionally, Frankel et al. found within twelve of the studies that students felt unclear, unhappy and stigmatised by their selection for the reading intervention programme (Brooks & Rodela, 2018; Frankel, 2016; Ginsberg, 2020; Goering & Baker, 2010; Gomez et al., 2004; Harmon et al., 2016; Houchen, 2013; Learned, 2016; Masterson, 2020; O'Brien et al., 2007; Paterson &v Elliott, 2006; Skerrett, 2012).

The experience of the reading intervention curriculum and approach was variable across the reviewed studies. Frankel et al. suggest that this varied experience is linked to students' perception of the reading intervention programme and the value they placed on the learning experience. Specifically, students had a more positive outlook if they deemed the programme to be relevant to their learning and needs. Positive learning experiences were found in those programmes that fostered and encouraged student autonomy and agency (Bippert, 2019;

Cantrell & Rintamaa, 2020; Frankel, 2016; Gomez et al., 2004; Greenleaf et al., 2001; Houchen, 2013; Masterson, 2022; O'Brien et al., 2007; Paterson & Elliott, 2006; Skerrett, 2012; Wissman et al., 2012). Additionally, those interventions that were described as being positive and productive had the common theme of good student-teacher relationships (Cantrell & Rintamaa, 2020; Cantrell et al., 2017; Frankel, 2016; Gomez et al., 2004; Harmon et al., 2016; Houchen, 2013; Masterson, 2022; O'Brien et al., 2007; Paterson & Elliott, 2006; Patterson et al., 2010; Skerrett, 2012; Wissman et al., 2012).

Recommendations/implications for practice

As one would expect, many of the interventions involved students working closely with one teacher or tutor. Students reported negative learning experiences when teachers focused on the mechanics of writing over student creativity or interest (Gomez et al., 2004; Frankel, 2016; Learned, 2016; Skerrett, 2012), demonstrating the importance of flexibility in terms of programmatic design and pedagogical approaches. In summary, the authors recommend that the understanding of 'effectiveness' in terms of literacy interventions should be broadened to include not only assessment or test scores, but also students' experiences and perspectives. Specifically, the authors argue that literacy interventions 'affirm students' literacy identities, histories, and capacities, and reposition youth as literacy knowers and

doers' (Frankel et. al, p.32).

Conclusion

Literacy attainment and achievement of post primary students needs to move beyond the text-based model that is concerned with simply decoding words and extracting information to a *situational* model. Thus any intervention to support reading needs to focus "not only on decoding and understanding words and sentences but also on link making and the activation of students' life experiences and perspectives" (Paul & Clark, 2016, p. 117).

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*Asterisk indicates article formed part of systematic review (see Appendix).

Appendix

Research Questions
1. What systematic reviews or meta-analyses have been conducted that are relevant to the area of literacy at post primary level?
2. What systematic reviews or meta-analyses have been conducted to demonstrate an evolving understanding of literacy ?
3. How can learners in post primary be supported in developing literacy skills that are relevant for 21st Century learners?
4. What "works" in terms of supporting post primary students' literacy development ?

Key Search Terms
LITERACY or "new literacies" or " multiliteracies" or "literacy development" or "reading and writing" (as a Subject Heading)

2. and post primary or high school or middle school or adolescent

3. AND meta-analysis OR systematic review OR best evidence (as a free text 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 ,WILEY
- 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.)

Post Primary Tabulation of findings including effect sizes

Title of Article and Authors, Year of Publication	Number of studies reviewed in article	Effect sizes (If available)	Aspects of writing: Foci of Article	Age range / Grade Level(s)	Findings (also refer to definitions of literacy/numeracy, as used in article/report)
Baye, A., Inns, A., Lake, C., & Slavin, R. E. (2019). A synthesis of quantitative research on reading programs for secondary students. *Reading Research Quarterly*, *54*(2), 133–166. https://doi.org/10.1002/rrq.229	69		The review synthesizes research on reading outcomes of programs designed for middle and high school students.	Middle/high school students	1. programs with positive outcomes tended to emphasize student motivation, student to-student and student-to-teacher relationships, and socioemotional learning 2. Learning to write well may help students gain insight into the structure of text, as they learn authors' tricks of the trade by being authors themselves 3. Further research on approaches for struggling learners and ELs is of particular importance. Understandings of how to use powerful digital technologies is especially needed:
Frankel, Katherine K., Maneka, Deanna Brooks, and Julie E. Learned. "A Meta-Synthesis of Qualitative Research on Reading Intervention Classes in Secondary Schools." Teachers College Record 123, no. 8 (August 2021): 31–58. https://doi.org/10.1177/0161468121104862	Meta-synthesis of 21 qualitative studies published between 2000 and 2020		To examine the student experience of year long Reading Intervention Classes (RICS	Secondary students (grades 6–12)	1. The understanding of 'effectiveness' in terms of literacy interventions should be broadened to include not only assessment or test scores, but also students' experiences and perspectives. 2. Literacy interventions (curriculum and pedagogy) should 'affirm students' literacy identities, histories, and capacities, and reposition youth as literacy knowers and doers' (Frankel et. al, p.32).

.			in the United States.		
Filderman MJ, Austin CR, Boucher AN, O'Donnell K, Swanson EA. A Meta-Analysis of the Effects of Reading Comprehension Interventions on the Reading Comprehension Outcomes of Struggling Readers in Third Through 12th Grades. *Exceptional Children*. 2022;88(2):163-184. doi:10.1177/00144029211050860	64		Investigates the relative effects of various approaches to comprehension intervention for struggling readers in Grades 3 through 12	Grades 3-12	Findings suggest that struggling readers benefit most from comprehension intervention focused on building background knowledge and the use of comprehension strategies But, it is important that teachers also rely on the ability and knowledge of their students, the features of a text, and the instructional goals for the lesson to select an appropriate approach to comprehension intervention
Graham, S., Liu, X., Aitken, A., Ng, C., Bartlett, B., Harris, K.R., & Holzapfel, J. (2018). Effectiveness of Literacy Programs Balancing Reading and Writing Instruction: A Meta-Analysis. *Reading Research Quarterly*, 53(3), 279– 304. https://doi.org/10.1002/rrq.194	47		This meta-analysis was designed to answer two questions for preschool through grade 12 students: 1.	Preschool to grade 12	The findings from this meta-analysis provide support for the assertion that literacy programs balancing reading and writing instruction can enhance reading and writing performance.

			Do literacy programs balancing reading and writing instruction improve students' reading and writing performance ? 2. Is there a relation between features of the studies reviewed and ESs for reading and writing?		
Paul, S-AS and Clarke, PJ orcid.org/0000-0002-2541-7051 (2016) A Systematic Review of Reading Interventions for Secondary School students. International Journal of Educational			1.How effective are reading interventions in improving reading outcomes for secondary	Secondary	Interventions which focus on improving reading skills via CAI appear to have no benefit. No studies have investigated the impact of tutor-led one-to one support in word recognition or decoding using an RCT design. Interventions focussing specifically on reading comprehension skills produce gains in these abilities, but effect sizes are small.

Research, 79. pp. 116-127. ISSN 0883-0355 https://doi.org/10.1016/j.ijer.2016.05.01			school students aged 11 – 18 years? 2. What features of reading interventions are associated with improved outcomes for secondary school students aged 11 – 18 years?		
Reynolds, Dan, 2021, Updating Practice Recommendations: Taking Stock of 12 years of Adolescent Literacy Research, Journal of Adolescent & Adult Literacy, Vol65, No.1, pp37-46. https://doi.org/10.1002/jaal.1176	Surveyed primary research & summary documents published in the last decades		The purpose was to discuss the implications of new research in order to assist literacy leaders in constructing up-to-date literacy initiatives as well as to	Adolescence	1. The need to move beyond the 2008 IES Practice Guide. 2. An updated Guide must also revise its inclusion criteria to specifically welcome studies of racially and linguistically diverse students, and ensure that students with disabilities are represented both in mainstream classes and dedicated special education settings. 3. Organizations of researchers and practitioners alike must streamline the research-to-practice pipeline and update practice recommendations so we can deliver the excellent adolescent literacy instruction all our students deserve.

			help teachers navigate themes in the new research as they craft instruction.		
Reynolds, Dan, 2020, Of Research Reviews and Practice Guides: Translating Rapidly Growing research on Adolescent Literacy Into Updated Practice Recommendations, Reading Research Quarterly, Vol.56, No.3, pp401-414 https://doi.org/10.1002/rrq.314	The IES Practice Guide 2008		An investigation into how the 69 article synthesis made by Baye, Inns, Lake and Slavin's 2019 article in Research Quarterly compares with the 2008 U.S. Institute of Education Sciences practice guide for adolescence.	Adolescence	1. The constant need to update our understanding of what it means by literacy, reading, writing and even adolescence. 2. Differentiating the different ages of adolescence. 3. Literacy research has expanded beyond the IES guide. 4. Explains the instructional implications of this expansion by presenting an example unit of what this change would look like for a teacher.
Reynolds, Dan, "Scaffolding the Academic Language of Complex Text: An Intervention for Late Secondary Students," *Journal of Research in Reading* 44, no. 3 (2021): 508–28,			To address the absence of intervention research about late	Late high school students	1. A scaffolding complex texts intervention approach can increase reading achievement in late high school students. 2. Scaffolding drawing students' attention to structure and syntax predicted increased comprehension. 3. Scaffolding asking students to reread the text predicted decreased comprehension.

https://doi.org/10.1111/1467-9817.12353			secondary students by testing a scaffolding-based instructional approach hypothesised to support students comprehending complex texts		
Scammaca, Nancy, Roberts, Garrett, Cho, Eunsoo, William, Kelly, Roberts, Greg, Vaughn, Sharon, Carroll, Megan, 2016, A Century of progress: Reading Interventions for Students in Grades 4-12, 1914-2014 https://doi.org/10.3102/0034654316652942	137 intervention studies over the century		To systematically review the published literature in a way that highlights the lessons of the past to inform present and future research and practice. A decade-by-decade approach was taken.	Age 9 - 21	1. Increased rigor in research design 2. Shift towards standardized tests and measures 3. Change in the nature of the comparison groups 4. Comprehension instruction in reading intervention appears likely to continue into the next century of reading intervention research. 5. Developments on the near horizon include potential advances in neuroscience, genetics, psychology, education, and other fields that may reveal more about the underpinnings of reading disability. 6. An eclectic approach from all fields will be important.

Reference	# Studies		Purpose	Grade Level	Findings
Steinle, P. K., Stevens, E., & Vaughn, S. (2022). Fluency Interventions for Struggling Readers in Grades 6 to 12: A Research Synthesis. *Journal of Learning Disabilities*, *55*(1), 3–21. https://doi.org/10.1177/0022219421991249	17 studies (4 group design studies, 13 single case study design)	n/a	To examine which fluency interventions lead to positive outcomes in reading fluency and comprehension for struggling grade 6-12 readers.	Grades 6 - 12	1. Found limited evidence to suggest that fluency interventions are effective in terms of having a positive effect on reading comprehension. 2. Further research is need to identify the best practices for improving fluency of struggling readers in grades 6 -12.
Wexler, J., Vaughn, S., Edmonds, M., & Reutebuch, C. K. (2008). A synthesis of fluency interventions for secondary struggling readers. *Reading and Writing: An Interdisciplinary Journal*, *21*(4), 317–347. doi: 10.1007/s11145-007-9085-7	19		This synthesis seeks to provide a comprehensive examination of the effects of fluency interventions on the fluency and comprehension outcomes for secondary struggling readers.	Secondary	1. One of the most common findings was that repeated reading interventions for secondary struggling readers improved reading rate, but had no direct effect on comprehension ability 2. Reading the same text repeatedly limits one's exposure to a variety of text structure, vocabulary, and subject matter. Therefore, spending time reading the same text repeatedly may not only sacrifice student exposure to text structure, vocabulary, and different subject matter, but these interventions may also have an element of boredom to them. 3. Because motivation at the secondary level for struggling readers is a necessary consideration, practitioners may want to consider how to provide reading opportunities within appropriate text to reduce boredom and increase interest.

Toste JR, Didion L, Peng P, Filderman MJ, McClelland AM. A Meta-Analytic Review of the Relations Between Motivation and Reading Achievement for K–12 Students. *Review of Educational Research*. 2020;90(3):420-456. doi:10.3102/0034654320919352	132 articles 185 independent samples		The purpose of this meta-analytic review was to investigate the relation between motivation and reading achievement among students in kindergarten through 12th grade.	Kindergarten to 12th grade	