





Exploring open education resources for teaching pre-reading in the intermediate phase



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Background: In South African primary schools, reading is central to curriculum delivery, with a structured three-step process: pre-reading, while-reading and post-reading. Many learners struggle with reading comprehension, which affects their academic performance. Research emphasises the importance of pre-reading for activating prior knowledge, expanding vocabulary and developing metacognitive skills. Open educational resources (OERs) support these processes by aligning with the 'four Rs' of openness: reuse, revise, remix, and redistribute.

Objective: This study investigates the adoption of an OER designed to support teachers and improve pre-reading instruction.

Method: Fourteen English home language and first additional language teachers participated in this qualitative multiple case study. The OER aimed to be beneficial and accessible. Data were collected through interviews and thematic analysis.

Results: The OER facilitated partial implementation of pre-reading activities. Teachers activated learners' background knowledge and focused on vocabulary development. However, language structures, conventions, inference, and literary knowledge were underused. Teachers reused and revised the OER for specific contexts, but did little remixing or redistributing. The OER's usefulness was contingent on its accessibility. Although it made reading lessons more engaging, it did not fully implement all pre-reading steps.

Conclusion: The success of an OER in improving teaching and learning depends on its design and accessibility. While background knowledge and vocabulary development were prioritised, more attention is needed for language structures, reasoning, and literacy knowledge.

Contribution: Teachers would benefit from professional development focusing on the optimal use of OERs, especially in remixing and redistributing them.

Keywords: pre-reading; reading process; reading comprehension; open education resources; OER lifecycle.

Introduction

Open education resources (OERs) developed for use in education aim to create high-quality educational experiences and to enable broad and equal access to knowledge resources. It is argued that OERs can make teachers' tacit knowledge visible and enable teachers to enhance their teaching practices, knowledge, and innovative strategies (Beaven 2021:198). Therefore, an important aim for the development of a pre-reading OER for Intermediate Phase (Grades 4–6) teachers was the reciprocal sharing of knowledge and practice with a view to addressing epistemic inequalities arising from South Africa's unequal past and present provision of education.

In this study, teachers' use of an OER to assist them in preparing learners for reading texts is investigated. The OER's purpose is informed by the 'four Rs', that is, reuse, revise, remix, redistribute (Hilton et al. 2010), meaning that the teachers could reuse the OER in its present form, revise it by adapting and modifying it to suit their context, remix it by combining it with their existing resources, and lastly, redistribute it by sharing it among their colleagues. According to the literature, active use of OERs remains low (Scott & Cherrez 2022) with very little evidence of their reuse, remixing or sharing (Beaven 2018; Blyth 2012).

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The development of a pre-reading OER in the Intermediate Phase was the result of the authors' participation in the OER Champions Initiative in South Africa, a programme aimed at promoting the creation and use of OERs in the field of digital humanities across the country.

We chose to focus on teachers' pre-reading strategies to enhance learners' reading comprehension skills, recognising the importance of equipping South African learners with the necessary literacy skills to succeed academically. This focus is especially relevant given the ongoing challenges in reading performance compared to international benchmarks (Mullis et al. 2023; Rule & Land 2017; Spaul 2016, 2017; Willenberg 2018). The focus of the OER is on promoting reading with comprehension.

In the South African primary school curriculum, reading is taught as a three-step process focusing on pre-reading, while-reading and post-reading. A review of the literature demonstrated the critical role of the pre-reading step in learning to comprehend texts. The OER's focus is on the pre-reading step, and its components are derived from the comprehension strand of Scarborough's 'Reading Rope' (Neuman & Dickinson 2003). Hollis Scarborough, creator of the famous 'Reading Rope', is a leading researcher of early language development and its connection to later literacy. She spoke of skilled reading as resembling the two 'strands' of a rope, namely language comprehension and word recognition. In reading the language comprehension and word recognition together the reader becomes accurate, fluent, and increasingly automatic with repetition and practice¹ (Neuman & Dickinson 2003). A qualitative, multiple case study was used to investigate the ways in which teachers used the OER in their practice. Engaged scholarship refers to initiatives and partnerships where knowledge and experience in areas of teaching and research are applied with partner schools to address shared issues to improve teaching and learning in the schools. The participants, who are primary school teachers, were purposefully sampled from five engaged scholarship partner primary schools where the partnership focuses on finding shared solutions to improve learning outcomes. A further motivation to work with schools is to align our learning material development, and teaching with the teachers' practice and the actual school environment. The South African curriculum expects the process approach to be used, as well as a variety of texts in teaching reading. The rationale for this study was to investigate how a resource such as the OER could facilitate curriculum implementation. The assumption was that the teachers we work with are competent and would be able to implement a new resource such as the OER and provide meaningful feedback on its efficacy. Investigations into the use of OERs have shown that the development of new strategies and innovative educational practices can facilitate wider and more equal access to learning content and knowledge (Beaven 2021:198). Thille (2008) points out that the design of OERs has primarily been driven by the creators, with insufficient input from the users. Furthermore, Thille cautions that context is

1. See Scarborough's reading rope (<https://dyslexiaida.org/scarboroughs-reading-rope>).

critical, as the creators need to consider whose knowledge is included and whether the OER is likely to contribute to effective pedagogical practice.

Literature review

Open educational resources

According to the United Nations Educational, Scientific and Cultural Organization (UNESCO 2012), OERs are:

any type of educational materials that are in the public domain or introduced with an open licence. The nature of these open materials means that anyone can legally and freely copy, use, adapt, and re-share them. OERs range from textbooks to curricula, syllabi, lecture notes, assignments, tests, projects, audio, video, and animation. (n.p.)

Ehlers and Conole (2010:2) assert that a key aspiration of OER developers is the improvement of educational experiences. Thille (2008) concurs that OERs should transform teaching and learning. The implementation and use of OERs enable teachers to learn new teaching strategies and develop their practice (Littlejohn & Hood 2017), and to expand their knowledge in educational innovation (Scott & Cherrez 2022:188).

As Iiyoshi and Kumar (2008:436) explain, most practical knowledge in pedagogy tends to remain implicit, because it is especially challenging to make it explicit. The use of an OER can help make tacit knowledge visible and accessible, not just to a teacher's colleagues but also to the teacher themselves, fostering opportunities for self-reflection on effective teaching practices. By making their teaching practices visible and demonstrating the potential of OERs, teachers can transition from being mere consumers of knowledge to becoming creators of knowledge and, further, to enabling others to become knowledge creators as well (Wiley 2017:28). Therefore, one aim of designing the OER used in this study was to address epistemic inequalities through the reciprocal sharing of knowledge and practice.

The life cycle of an OER has been conceptualised in several different ways. According to Blyth and Thoms (2021), Gurell (2008) characterised this cycle as find, compose, adapt, use, and share. However, Wiley and Hilton (2018) describe the OER lifecycle as the 'five Rs', namely: reuse, rework, remix, redistribute, and retain. We chose to use the four Rs, developed by Hilton et al. (2010) in this study. The four Rs are: (1) reuse, which means the OER is downloaded and ready for use; (2) revise, which means the teachers adapt and modify the OER to use in their own practice; (3) remix, which means the teachers combine the OER with the resources they have; and lastly (4) redistribute, which means the teachers share it with colleagues.

According to Iiyoshi and Kumar (2008), active and meaningful interaction with OERs is central to defining open educational practices. They propose that OERs can enhance teaching and learning quality through ongoing development, innovation, and the sharing of effective pedagogical practices among teachers.

Littlejohn and Hood (2017), as well as Scott and Cherrez (2022), argue that OERs enable teachers to grow in their practice, and develop their knowledge, expertise and reflective practices (cf. Weller et al. 2015). Camilleri, Ehlers and Pawlowski (2014:12) state that 'using OER in a way that improves learning experiences and [innovative] educational scenarios' is a key goal. In addition, Ehlers (2011:7) explains that when engaging with OER usage, reuse, sharing and creation must lead to improved teaching approaches, ensuring the achievement of better learning outcomes. However, the active use of OERs remains insignificant. According to Blyth (2012) and Beaven (2018), there is little evidence that OERs are reused, revised, remixed, or redistributed.

Teaching reading comprehension in the intermediate phase

Mullis et al. (2023) define reading literacy as,

... the ability to understand and use those written language forms required by society and/or valued by the individual. Readers can construct meaning from texts for a variety of purposes. They read to learn, to participate in communities of readers in school and everyday life, and for enjoyment. (n.p.)

The National Reading Panel (2000) defines reading as the 'convergence of five skills: phonemic awareness, phonics, fluency, vocabulary, and comprehension'. The RAND Reading Study Group (2002) moved away from the text as the defining factor in comprehension, arguing that comprehension is the product of the reader, the text, the activity, and the sociocultural context of the reader (Snow 2002). The 'Simple View of Reading' (SVR; Gough & Tunmer 1986) and 'Reading Rope' (Wegenhart 2015) are similar in defining reading by focusing on decoding and linguistic comprehension. Scarborough's rope (Neuman & Dickinson 2003) presents reading as a complex skill with interconnected competencies that work towards skilled reading. The two strands, namely word recognition and language comprehension, become more and more interconnected as the learners develop as skilled readers, which Scarborough defines as fluent execution and comprehension. It has been argued that Scarborough's Reading Rope is more accessible to teachers than the SVR, which does not provide enough guidance for teaching reading (Wegenhart 2015).

A study by Howie et al. (2012) investigated the reasons linked to poor reading performance among South African Grade 4 learners in the 2011 Progress in International Reading Literacy Study. Cekiso et al. (2022) states:

These factors [reported in the Progress in International Reading Literacy Study (PIRLS 2011)] include economically disadvantaged backgrounds of the majority of learners, resource shortages in schools, teacher absenteeism, teachers' failure to complete the curriculum, teachers without the minimum formal qualification, parents' low level of education, parents' lack of involvement with the school, and parents' lack of participation in their children's education. (p. a327)

South Africa's participation in the 2021 PIRLS assessment involved Grade 4 learners who were assessed across the 11 official languages. Grade 6 learners were assessed in English and Afrikaans. A total of 12 426 Grade 4 learners and 9317 Grade 6 learners were assessed. The PIRLS 2021 study (Mullis & Martin 2019) revealed very low performance levels in learners' ability to read for meaning as they turn 10 years old. South Africa, at 288 (4.4) score points, performed significantly below the PIRLS centre point of 500, a deterioration from the 2016 results. In PIRLS 2016, 78% of Grade 4 learners could not read at the Low International Benchmark. This percentage of learners who are unable to read at the lowest international benchmark increased in PIRLS 2021 to 81% (International Association for the Evaluation of Educational Achievement 2021).

A process approach to teaching reading has been adopted in the South African curriculum (Department of Basic Education [DBE] 2011). The process comprises three distinct steps, namely pre-reading, while-reading, and post-reading. The pre-reading phase is where the readers are encouraged to establish a purpose and plan for reading by orientating themselves to the text. This orientation can be done by activating prior (background) knowledge, looking at the source, author and publication date and any accompanying visual material, as well as making connections to what the reader already knows (DBE 2011). In the while-reading phase, the reader reads the text. When this reading is done in an additional language, the teacher may need to provide support by checking for understanding, providing contextual clues to assist the readers in finding meaning and encouraging the readers to use other strategies like phonics and other word attack skills. In the post-reading phase, the readers should reflect on the text and complete activities to confirm that they were able to comprehend what they have read. The reflection on the text can be done by engaging in discussion about the text, sharing one's opinions and thoughts about the author, as well as recalling what the text was about (DBE 2011).

Research on reading has shown that 'comprehension can be improved through explicit instruction, for example, by teaching strategies for vocabulary building, recognising text structure, activating prior knowledge, making inferences and predictions, and monitoring comprehension' (Almasi & Hart 2011:253). Pre-reading is regarded as a critical step, as it includes activation of background knowledge that informs reading comprehension, vocabulary building, the language structures and conventions used in the text, verbal reasoning, such as inferencing, and literacy knowledge, which includes aspects such as the structure of the text.

Learners are regularly involved in reading material that requires them to use their own experiences and pre-existing knowledge structures to bring meaningful understanding (Little & Box 2011). To this end, Widdowson (1983, as cited in Ajideh 2006) proposes that there are two levels of language:

A systemic and schematic level. The systemic level includes the phonological, morphological, and syntactic elements of language, while the schematic level of language refers to the prior or background knowledge. (p. 4)

Background knowledge refers to that which a person already has, and which needs to be activated to aid the comprehension of new text. Widdowson (1983), as cited in (Ajideh 2006), states that when individuals are given new reading material, they bring both their systemic and schematic knowledge to the new text. This theory was revised by Widdowson from a language perspective and is aligned with the view of learners needing their own experiences and prior knowledge of the texts they are confronted with to aid meaningful understanding.

Extensive research on the relationship between vocabulary knowledge and reading comprehension has indicated high correlation coefficients between vocabulary mastery and reading comprehension (Fitri & Rifaat 2021). Additionally, Wexler (2023) points out that written text has a larger number of words, which are often more sophisticated than words used in speech. To this end, if learners are able to read with comprehension, they will have access to the larger number of sophisticated words found in written texts and, as such, increase vocabulary knowledge.

The theoretical framework of the four Rs and selections from the literature on teaching reading comprehension provided the framework for the conceptualisation and design of the OER used in this study.

Research methodology

Design of the open educational resource

The OER design was informed by Scarborough's Reading Rope, the reading process and the practical application of steps. In the Intermediate Phase of schooling, reading focuses on comprehension. The comprehension strand in Scarborough's Reading Rope has the following components:

- Background knowledge, which includes facts and concepts and draws on learners' prior knowledge.
- Wide vocabulary knowledge.
- Language structure knowledge, that includes semantic and syntactic knowledge.
- Verbal reasoning, such as the use of metaphors and the ability to draw inferences.
- Literacy knowledge, including knowledge of print concepts, genres, format and the text structure.

On the OER, each component has content attached to it. We used a Grade 4 passage (DBE 2019:10) as an example to illustrate the possible use of the OER. The passage is a story about *Why Maphula did not come to school*. It is written by Maphula's 11-year-old friend. Maphula did not go to school because a paraffin stove was knocked over, causing a fire, and the fire, brigade was called. There is a picture of the house on fire and the fire brigade. There is a 'Before you read' activity

predicting the text and skimming the page to see what it is about. The pronouns in the text are printed in red to draw attention to them. The OER content includes an explanation of how to use the OER. Each of the five pre-reading steps has content linked to it. The activating background knowledge step includes how to use the KW [KWL] chart – what I know, what I want to know, and what I have learned – a presentation on learning and the development of long-term memory, and an explanation of Scarborough's Reading Rope as well as the passage, *Why Maphula did not come to school*. The vocabulary step has teaching activities, while the language structures and conventions, verbal reasoning and literature knowledge steps contain the reading passage with annotations explaining how to use the text in the pre-reading phase. When deciding on the content, we took into consideration that the teachers' pedagogic and content knowledge might range from novice to expert. An effort was made to create a simple OER design with intuitive steps to access the content. McAndrew (2011) points out how available content increases the likelihood that the OER will be used. Furthermore, the 'methods and practices that enable learners, teachers and institutions to best engage with OER' (McAndrew 2011:1) were considered.

While making the OER available to our research participants, we were further aware that their reuse, revise, remix and redistribute strategies would be determined by their individual realities and lived experiences in the classroom. We were interested in their 'living examples of implementation' that may make it easier to introduce these ideas to other teachers (Black & Wiliam 1998:146).

Research questions

Having designed the OER, the research questions that guided the investigation of its use by teachers were as follows:

- Main question: How did the teachers use the OER in the implementation of the pre-reading step in the Intermediate Phase reading process?
- Research sub-questions:
 - How did the teachers reuse, adapt or revise, modify or remix and redistribute and/or share the OER?
 - How did the use of the OER influence the teachers' pre-reading teaching practice in the Intermediate Phase?

Research design

A qualitative, multiple case research design was chosen to investigate the teachers' practical implementation of the OER in their teaching of reading. The five schools were regarded as individual case study sites, as each has its own context.

Research participants

The participants in the study were 14 Grade 4–6 English home language and first additional language teachers, specifically chosen because they taught at schools involved in the researchers' engaged scholarship project. These teachers implemented the OER in their language lessons.

The five participating schools were in three provinces: Eastern Cape, KwaZulu-Natal, and Gauteng. In the Eastern Cape, the three schools were situated in rural areas and included one primary school and two combined schools, which served learners from Grade 1 through Grade 12. The school in KwaZulu-Natal was also a rural primary school. The school in Gauteng was an urban primary school.

The teaching experience of teachers varied, with nine having more than 5 years of experience and five having fewer than 5 years of experience. A summary of the sample, including details about participating schools, is provided in Table 1.

Data collection

Semi-structured interviews were conducted, with two teachers interviewed through Microsoft Teams due to their unavailability when the sites were visited. The semi-structured interviews allowed the researchers to ask follow-up questions that pertained to the participants' context. Furthermore, the questions enabled the researchers to probe the teachers' individual experiences of implementing the OER in their classrooms. The questions focused on how the teachers accessed the OER, how they reused it, whether they adapted it in any way and used it with their own resources, and whether they shared it with their colleagues. We also aimed to establish whether the OER had impacted their teaching practices.

Data analysis

Inductive thematic analysis is a method of qualitative data analysis that involves identifying patterns, themes, or categories within textual data without using any pre-existing theoretical framework or coding scheme (Saldaña 2013). This approach to data analysis allowed us to be open to emergent information, as we wanted to learn from the teachers about their use of the OER. Using ATLAS.ti, a computer-aided qualitative data analysis software (CAQDAS), the interviews were first coded using phrases to summarise the data.

TABLE 1: Participants' socio-demographic information.

Participant number	School	Years of experience	Gender
7	E	> 5	Female
8	E	> 5	Female
9	E	< 5	Female
10	E	> 5	Male
11	E	> 5	Male
13	A	> 5	Female
14	A	> 5	Female
15	D	> 5	Female
16	D	> 5	Female
17	A	< 5	Female
18	B	> 5	Female
19	C	< 5	Female
20	A	> 5	Female
21	C	> 5	Female

Open coding was used so that the data could be compared while allowing for emergent themes. The first coding cycle was followed by a second cycle, in which the codes were categorised based on thematic similarity (Saldaña 2003). Lastly, a third coding cycle produced five themes that led to the analyses and interpretation of the data.

These five themes emerged from the data: level of accessibility of the OER, implementation of the OER made teachers' practice visible, implementation of the pre-reading steps, impact of the OER in the classroom, and lastly the OER as a resource and the implementation of the four Rs.

Ethical considerations

Ethical clearance to conduct research in the engaged scholarship project was obtained from UNISA's College of Education Ethics Review Committee on 04 March 2021. The ethics clearance number is 2021/03/04/90001761/05/AM. The school principals gave their permission for the research to be conducted at their schools. The teachers signed consent forms agreeing to be interviewed and understood that they could withdraw their participation at any stage of the study.

Presentation of findings

We created the OER in two formats; the first was a paper format with content in the form of embedded PDF and Word documents. The second format was electronically accessible as a massive online open course on the UNISA MOOC platform. The teachers accessed the paper format OER via email on their phones and most printed it out as they were not able to open the links on their phones. The paper format OER was distributed to the teachers with an explanation that we invited them to implement it using the reading passage and activities as an example. Teachers could use their own reading texts and were not instructed to implement the pre-reading activities in a certain order but could choose, according to their context, how the OER was implemented.

Theme 1: Accessibility of the open educational resource

Firstly, we wanted to determine if the teachers could access the resource and download the content. Secondly, we were interested in whether the teachers were able to understand the OER's pre-reading steps and resources as the expectation was that the OER could be used with any reading text and reading lesson. As an open resource, the OER should be easily accessible. However, we found that accessibility was a significant obstacle for some teachers. The OER was emailed to the teachers, who mostly receive emails on their mobile phones. Most could not open the document on their phones, but it was accessible on their laptops. There was no difference between the efforts of teachers in a rural setting and the teachers in an urban setting. Their responses are presented verbatim.

I had to. I tried on my phone but I could not, and then I went on to my email on the laptop and then it was pretty easy to get it.' (18:1 4)²

Once the teachers had accessed the OER, they found it was easy to use and that they only had to try and understand it:

'Once I had access to it, it was easy for me to literally open, read through'. (Ja. 8:3 9)

'Yes, the understanding was, it was just the opening that was a problem, but understanding and ja, working through it, that is it not difficult. It was relatively easy.' (13:7 34)

The teachers felt that once they understood the content, they could implement it in their lessons:

'It was great, what I actually did, I put it on, and I made notes in my planner and it was self-explanatory, it wasn't things that I thought, what are they talking about, it was easy for me to understand, so I could use it in my class.' (8:10 33)

Theme 2: Teachers' practice was made visible

The teachers indicated that they were familiar with the reading process as well as some of the pre-reading steps. They further indicated that they had been doing it in their classrooms: 'We were doing [it] in the past and we were familiar'. However, teachers' tacit knowledge was made visible as they commented that the implementation of the OER made them aware of their teaching practice. While the steps may have different names or categories, the principles were the same.

'So we didn't categorise it as that as far as I know basically, but everything that was mentioned in pre-reading and post-reading and all of that, it is skills that we were using because I remember the first time I started teaching English I remember explaining the book to the kids first before I read it to them, and then we will stop at certain points as well, to explain what is going on in the story. For example, if there is a word or a situation that they don't understand, so I feel like that kind of awareness goes hand in hand.' (11:4 14–17)

The teachers further felt that while they had tacit knowledge of the pre-reading process, the OER made the implementation of the pre-reading 'intentional'.

'I think I was relatively familiar, just because I feel like it is something that you always practice, when somebody points it out to you and says, this is what you are actually doing.' (7:5 19)

Teachers commented that in their previous practice, pre-reading was a rather perfunctory step, whereas with the OER, the pre-reading took on a more detailed implementation.

'I think I have done it a lot more intentional with all of them together more than just, just like one or two.' (17:14 27–29)

Teachers were asked how different it was from the usual process.

'I don't think I would have gone into so much detail with it. You know just read it and then moved on, you know, read it and do a comprehension and that's it. It's a little bit of understand, you know, bit of explaining of this is this in English and those means this in it.' (18:11 27–28)

²As per ethical guidelines, the anonymity of respondents and schools is protected by giving only codes (school:respondent number).

Teachers were asked: 'And how has it affected your own practice? How did it make you more aware of what you are doing in class?'

'I think it made us to be able to allow children, who would think, there is a lot that we can learn from them because KW [KWL] charts there is a space where that what I know, so obviously it makes you aware, oh okay my kids they know as much, like me if I did not use it, I wouldn't have known this is what exactly.' (19:22 85–86)

Theme 3: Implementation of the pre-reading steps

The teachers implemented the pre-reading steps in ways that suited their class and lesson. Activation of background knowledge was the most consistently implemented strategy used by the teachers, as it was regarded as the most important element in the pre-reading step.

'[It's] not just about, okay, let's read something now, it is about getting their opinions, getting their insights, getting them motivated, finding out what their knowledge is, and what their skills are and what they know about this, so that you actually can address these questions if they don't understand something. So it is sort of vital importance for me.' (16:7 23)

'Out of the five steps here, I would definitely say background knowledge.' (11:16 53)

The teachers also explained their usual practice would have been to read the passage and ask learners about words they do not understand. The background knowledge step raised the teachers' awareness about the activation of background knowledge and made their tacit knowledge visible.

'So what I did, I asked to do it more intentionally, I thought to myself, what I usually do, I will give them a passage, then read it, then we find words that we don't understand and then we look it up. So what I did this time, is I gave them the word[s], they looked them up and then while we were reading, and I also do dictation, every day, a five minute dictation from the thing that I read, before it was just grammar.' (17:11 23–25)

'Well, I just looked at your examples, or your steps and then I basically implemented them with my own, how I always do that, when I go into the class, identifying various cards of what they are going to do, of the reading test. Finding out what they like about it, getting them to predict certain things, finding, basically implementing what you've got with a combination of my own knowledge.' (16:12 33)

Apart from the activation of background knowledge, the teachers used the language structure, step 3, and information and inference, which is part of verbal reasoning step 4:

'Out of the five steps here, I would definitely say background knowledge, and also language structure.' (11:16 53)

With regard to step 2, vocabulary, some teachers found the vocabulary examples were too advanced for their learners:

'Maybe adapted a bit more for the younger readers and the vocabulary was quite high grade which would be fun for senior phase.' (14:24 41)

'So the background knowledge, the vocab is also very important, also in the beginning of the term we have a list, a terminology list, so all the difficult words that we are going to go through in that term, we put the words down with their meaning.' (10:11 54–55)

One of the vocabulary activities was an interactive PowerPoint presentation called the 'spinning wheel', where pictures related to descriptions of words in the example text. The teachers and learners found it very interesting and useful. The spinning wheel and the vocabulary activity called flags were helpful to the teachers. Some also indicated that it was useful because they did not have time to create such activities themselves.

'I think for me we've got wonderful ideas as teachers and we don't have time to implement it. Technology and all these things it is a, you know resources are fantastic and those kind of things are fun for the kids and they work for the kids, unless we've got access [to] a resource like that, we don't always find the time to create it on our own and that is the biggest help, because yes it is wonderful in theory but to actually get all of these things done, I don't have time to create something like that, all these different topics it is just not a possibility.' (13:19 61–62)

Theme 4: Impact in the classroom

An interesting and unexpected finding was that the teachers noticed a change in the learners' response to the activation of background knowledge. The learners became excited, and for the teachers, it was a fun experience:

'So that for me I think maybe as they go, but definitely the background knowledge, I think they relate more and they get so excited when they actually remember something. So for me, ja it would be the background knowledge.' (9:17 61)

'Yes, I feel like [I] have enjoyed teaching a bit more because it is not as complexed [*sic*] for the kids to understand when you like kind of break it down, by the steps that you have given us. So I don't know, for me personally it is has become more of a fun experience.' (11:22 67)

Furthermore, the learners were able to engage in the reading process:

'For me the most vital is the background knowledge, especially for the intersen [*inter-senior*] is that engaging of the learners and then, it actually gets them excited, because it is the whole, it is part of the process that actually really engages them ... and I think that is what it just came down [*to*] is that I always find that if you do pre-reading effectively, your kids, your learners are more engaged.' (16:6 23)

When asked: 'So now what could you see?' they replied:

'The results, what can I see? It is definitely, it has engaged the children a lot.' (17:21 48–53)

'It has given them ownership over their work, they know what that means.' (17:21 48–53)

When asked: 'How did it change your teaching practice?' they replied:

'It made it a lot easier. I feel like I didn't have to go back and forth so much, because taking that time to spend on explaining these concepts and going to back to background knowledge and focusing on your vocab before you start teaching, it definitely makes it easier because then the kids have a better understanding.' (11:15 50–51)

The teachers were asked: 'How did the OER change your teaching?'

'I think it definitely made it more child inclusive where it was more teacher based where I was teaching. Now they're more involved.' (18:14 30–31)

Teachers also noted that the pre-reading process created an inclusive classroom:

'I was really thinking about kind of try and see who has got this knowledge and who can bring this and making it more of an inclusive situation where it is a proper discussion and making sure that we kind of touch on as much of that background info or that pre- reading as possible.' (13:16 58)

The teachers were asked: 'How different was it from your usual practice?'

'I feel like the kids are a lot more confident with English, like in terms of their marks, like opposed to the groups that I taught last year. Like I just, I feel like they are a bit more, what is the word, more competent in dealing with like English as a structure and a foundation, and I think like following these principles, it definitely did help because like I said, they now understand, they have the knowledge, the background information, there are obviously one or two kids that you know, they are still a bit slow in terms of that.' (11:14 48–49)

Theme 5: Open education resource as a resource and the four Rs

The openness of an OER means that users should be able to engage with the four Rs of the OER: reuse, revise, remix, and redistribute. As reflected in the application of the pre-reading steps, especially the activation of the learners' prior knowledge, the teachers **reused** the OER as is. The steps were implemented without the teachers making any changes to the resources.

The teachers were asked: 'And how did you adapt it to make it useful?'

'I have not yet adapted that much. So I can't say I have adapted this or I have adapted that.' (20:21 61–64)

The teachers were asked: 'So you implemented it as is?'

'As is, yes.' (20:21 61–64)

The most pertinent adaptation that some teachers made was to revise the level of vocabulary difficulty to make the text more accessible to the learners. The teachers were asked: 'Which aspects did you find most useful?'

'So the background knowledge, the vocab is also very important, also in the beginning of the term we have a list, a terminology list, so all the difficult words that we are going to go through in that term, we put the words down with their meaning.' (10:11 54–55)

Most teachers remixed the OER, using it in combination with their own resources or in other subjects teach, not just language teaching. Several questions were asked about this: 'How did you use it in combination with your own resources?'

'I would, I have used all the concepts that were taught from the OER in my own with my own resources, and I would also use the wheel and adapt that to my own resources.' (14:20 34–35)

'How did you implement the OER in your reading lesson?'

'So we've been doing poetry this term, so it wasn't really so much in my reading list.' (18:8 23–24)

'How did you integrate the OER into your teaching?'

'So it was more in my in my poetry, so it would be like a comprehension in my comprehension, so it was the, but it's specifically because I've been doing poetry. It was nice too, because you break it up more with a poem than you would usually with the other reader.' (18:10 25–26)

'How did you implement the OER in your reading time?'

'So what we've actually, and I actually use it in my History lesson.' (8:11 36–37)

'How did you share it with colleagues, if at all?'

'So with Grade 4s, we all teach English, to our own class, and Maths to our own class but History I do it. In terms of like the English prep, Wendy did the poem, I took those skills of using like, breaking it down, what is a poem, where does it come from, and then my History lesson was later on. So I first started with English and then we paste it.' (8:22 66–69)

'Did you combine it with any other resource or practice?'

'I also teach Natural Science.' (9:19 66–67)

The redistribution of the OER was, however, limited. The teachers shared it in their own language departments but not with other colleagues in their schools or other schools.

Findings and discussion

The study aimed to design and distribute an OER that could contribute to the improvement of primary school teachers' activation of the pre-reading step in their classrooms, and then to investigate teachers' use of it. We developed the OER as a teaching resource with the intention that teachers would use it and suggest possible improvements. We were aware that, as Thille (2008) points out, the OERs were created without input from the teachers and, thus, needed their feedback on its efficacy to make the necessary improvements. We were mindful that the OER should be accessible, meaning that the content should be easily understood, but also that the teachers should not struggle to read or download it. Some teachers did struggle with downloading on their phones but found the OER easier to access on their laptops. Once they could do this, they found it useful. The teachers who could not open the OER did not reach out to the researchers to

remedy the situation. Therefore, if access is not a simple process, teachers may not explore ways to access an OER. As the teachers explained, once they were able to access the OER, they found they could relate to the content.

The teachers reused the OER by implementing it in its original form. The OER not only succeeded in making the teachers' knowledge visible, but enabled them to develop their practice (Littlejohn & Hood 2017). The teachers were aware of the pre-reading step and familiar with the process approach to teaching reading, but their practice had not been explicitly intentional. This shifted with the introduction of the OER, as the teachers engaged to varying extents with the five pre-reading steps and the activities incorporated within the OER.

In agreement with literature (Widdowson 1983, as cited in Ajideh 2006:4), the teachers found the first step (activation of background knowledge) the most useful of the five steps. There were unintentional consequences, as the teachers found that the conscious implementation of this step engaged the learners in new ways. The importance of background knowledge in reading comprehension was thus demonstrated, and the teachers regarded this as a 'vital step' in teaching reading.

While the activities were useful and the PowerPoint presentation in the form of a spinning wheel as an interactive vocabulary game was enjoyed by teachers and learners, some teachers found the vocabulary beyond the learners' capacity. We did not anticipate this, as we used a prescribed workbook and text appropriate to the Intermediate Phase as our example. The fact that the vocabulary game was not at the learners' level indicates that taking the teachers' context into account is critical (Thille 2008). The teachers, however, adapted the vocabulary to their learners' level. The OER's activities were appreciated, and teachers remarked that they did not have time to develop learning materials and that the OER filled the gap.

The study was conducted in primary schools, where the teachers are not teaching language only but teach a range of subjects. The teachers did not limit the use of the pre-reading steps to language teaching but remixed the OER by using it with their own resources and in other subjects. This was the case in particular with the step on background knowledge. This underscores the value the teachers attached to the step.

While teachers in schools found OER easy to understand and a useful resource that impacted in their teaching and learners' engagement in lessons, they did not redistribute it. The positive practice was shared with colleagues within their department or school, though at a minimal level.

To summarise the findings, the teachers had tacit knowledge of the pre-reading process, and the OER made their practice visible and explicit. The teachers had no trouble implementing

the steps and found the impact that the background knowledge made in the lessons most striking. The teachers used OER as it was received in their teaching, and not only in language teaching. They were able to adapt OER in their teaching and learning practice, and add it in their own resources.

Recommendations

A recommendation resulting from the study is that the distribution of OERs to other teachers needs to be enabled and supported. Further research will need to be conducted to establish how the use of OER's step 3 (language structure), step 4 (verbal reasoning), and step 5 (literacy knowledge) can be optimised in the process of teachers' use of pre-reading strategies. We assumed that all five steps would be used, but this was not the case in our study.

Conclusion

We set out to develop a pre-reading OER that the teachers could use in their classrooms to understand how the participants interacted (or chose not to interact) with the stages of the OER process and how the OER was used in the pre-reading phase of lessons. Our findings indicate that accessibility is key and that the teachers had tacit knowledge of teaching strategies pertaining to pre-reading, which became more nuanced and explicit. The teachers reused, revised and remixed aspects of the OER. The teachers supported the findings from the literature review, which emphasised the importance of prior knowledge to ensure successful reading comprehension. The aspect of the study that was most beneficial was that, in the words of Seymour Papert: 'We learn best when we are actively engaged in constructing something that has personal meaning to [us] – be it a poem, a robot, a sandcastle, or a computer program' (as cited in Wiley 2017:29). Developing the OER allowed us to critically engage with our own knowledge and practice in our modules on teaching reading. Investigating teachers' use of the OER has resulted in further knowledge development in this evolving field of study.

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Competing interests

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Authors' contributions

M.B., D.P.Z., D.A.S. and K.C.M.-W. contributed to the visualisation, conceptualisation and development of resources for the research. M.B. advised on the methodology, investigation, formal analysis, software,

ATLAS.ti, data curation and validation. M.B. was also involved in the writing from original draft to review and editing and was responsible for the supervision and administration of the research. D.P.Z. contributed to the methodology and investigation as well as the writing of the original draft and the review and editing. D.A.S. and K.C.M.-W. contributed to the writing of the original draft and the review and editing.

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Data availability

The authors confirm that the data supporting the findings of this study are available within the article and its references.

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