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Emerging Frontiers in Learning Spaces, Pedagogies, and Technologies

Reciprocal Teaching in tech with struggling university readers: A reflexive analysis

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Reading comprehension is a skill that is crucial in everyday life, as it allows people to read critically and understand the various texts they encounter. Reading comprehension is not a skill that is actively taught or improved upon in most Western countries, despite its relative importance to everyday life. As a result, university readers struggle with comprehension skills, which can impact their employment prospects. The present study explores the initial implementation of a potential solution to this issue. This study will focus on Phase 1 of a larger project and will implement a qualitative methodology of reflexive journaling to reflect on the initial curriculum design, pedagogical practice, and technological challenges and evaluate the construction and implementation of an online learning platform designed to assist students in improving reading comprehension.

Keywords: reading comprehension, Reciprocal Teaching, qualitative, reflexivity

Introduction

Reading comprehension is necessary for success in tertiary education and everyday life (Espin & Deno, 1993). Despite this realisation, universities are struggling to get adult learners the requisite reading skills needed to succeed (Shafie & Nayan, 2011). To effectively look deeper into this issue, defining the group in question is important. The 'struggling adult reader' comprises a group that faces challenges with various skills that impact reading, ranging from basic reading skills like word recognition and understanding to higher levels such as inferencing (Lesgold & Welch-Ross, 2012; Tighe et al., 2023).

Reading comprehension involves a great deal of inferential reading and understanding for a reader to be successful, and this is an area of concern for struggling adult readers (Gauche & Pfeffer Flores, 2021). Inferencing is the formation of implicit and explicit associations with a text to other stimuli to construct a deep understanding of a text's meaning (Kintsch, 1988). Inferencing works in many ways within reading comprehension, which can be separated into distinct categories. These categories are explanatory (e.g., how and why actions occur), predictive (e.g., what this means for the future), associative (e.g., how this applies to other areas), text-based (connecting ideas within the text itself), and knowledge-based (connecting ideas with prior contextual or background knowledge) (Trabasso & Magliano, 1996). The ability to make these inferences is of great importance when it comes to success in reading comprehension, and struggling adult readers need assistance upskilling this aspect to enable them to read successfully. This paper aims to present the struggles and successes of developing a digital text interaction system between instructors and students, enabling struggling adult readers to utilise reciprocal reading to improve inferencing in texts.

Reciprocal Teaching

Many theories exist that assist struggling university readers with their inferential capabilities, one of which is Reciprocal Teaching (Palincsar & Brown, 1984). Reciprocal Teaching (RT) is a teaching strategy that involves a dialogue between teachers and students to improve comprehension and critical thinking skills by making the reading process active rather than passive. The goal of RT is to help students develop inferential reading capabilities, which is impossible for a person reading a passage solo. Sharing the experience and creating a dialogue allows the reader to see how inference works from various perspectives, thus developing their ability to make inferences.

RT involves instructing and modelling four distinct reading skills: predicting, clarifying, questioning, and summarising. Predicting is when the instructor asks questions guiding a reader to use contextual clues from

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the text to infer how the text might play out (Spörer et al., 2009). Clarifying is when instructors ask questions that ask a student to clarify their interpretation of a text, which increases a student's ability to develop inferences (Alfassi, 1998) (See Figure 1). Questioning is when the teacher asks a reader to construct questions they may be asked in a test situation and to construct questions that assist others in developing a deeper inferential knowledge of the text (Okkinga et al., 2018). Summarising is when an instructor asks students to review and infer a passage's key meaning and messages and concisely recount what was read (Hart & Speece, 1998) (See Figure 2). All these strategies are used to make the subconscious reading process conscious and present to help the reader evaluate the text whilst reading and to help guide the reader in what effective inferential reading is (Rosenshine & Meister, 1994).

RT in technology

The current model for helping struggling readers develop inference skills is to sign the student up for remedial reading classes. Because these classes are time-consuming, expensive, and can reduce motivation, this project aims to develop an online workspace where tutors and students use RT (Palinscar & Brown, 1984) to improve reading skills. In this field, there have already been many studies to validate the effectiveness of RT in classrooms and online spaces (Huang & Yang, 2015; Tseng & Yeh, 2018, Yang, 2010). However, very few have used RT strategies in an online setting.

Huang and Yang's (2015) study looked at how reading comprehension could be taught to English as a Second Language (ESL) learners using videoconferencing software to conduct weekly sessions in teaching, modelling, and practicing the four strategies of RT to a control group who received only direct instruction. Tseng and Yeh's (2018) study also looked at how reading comprehension could be taught to ESL learners, this time using an online annotation tool (Google Doc) to conduct weekly sessions in teaching, modelling and practicing the four strategies of RT. The results of this study indicated a significant improvement in reading comprehension. Both of these studies provide a brief yet substantial view of the implications of using digital technologies to assist university readers in reading comprehension. Despite this, not many online digital platforms can be found that are designed to help struggling readers in universities in Australia and New Zealand. Using an online platform to deliver the remedial content would be flexible enough for students to simultaneously attend classes and the remedial instruction. It also provides a way to eliminate remedial courses. With the gap now clearly identified, the current project, in which this paper makes up Phase 1, provides the information necessary to fill it.

Reflexivity in research

In research, reflexivity allows the researcher to analyse their presumptions, biases, and actions and consequences on the research process (Mayes, 2001; Mortari, 2015). Reflexivity's pragmatic elements are valuable also, as they assist the researcher in constructing solutions to the challenges they face (Dewey, 1916; Mortari, 2015). This concept is coined by Schön (1983, p. 54) as "reflection-in-action", meaning that the researcher will use reflection to come to solutions for issues that arise in the moment, informing the solution to the challenge. Secondly, reflexivity assists the researcher in identifying what has occurred in the intervention evaluating their role and identifying how they can improve their practice in future (Dewey, 1916). This concept is coined by Schön (1987, p. 22) as "reflection-on-action". This is valuable in the intervention period of a given project as it enables increased clarity of the design while ensuring the intervention aligns with the proposed aims and hypotheses of the investigation (Olaghere, 2022).

Reflexivity must be integrated intentionally into the research design to be useful as an analytical tool (Gentles et al., 2014). Journaling from the researcher allows them to document their personal reflections, evaluate various aspects of the intervention that may require attention, assess the efficacy of these elements and make changes if necessary (Ortlipp, 2008). Interpreting journal documentation and self-assessment using a reflexive thematic analysis enables researchers to systematically identify and analyse their intervention and its efficacy.

This paper seeks to use reflexivity to reflect on the implementation of a pilot study and the successes and challenges of using technology, curriculum design and pedagogy from the researcher's perspective. Reflexivity

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was chosen as the particular method of reflection was pertinent to the goal of this paper and aligns itself well with the pragmatic nature of the intervention being proposed and assessed. It will allow the researcher to actively reflect on the initial stages of the project to open up opportunities to improve technological and pedagogical practices ensuring students garner adequate learning from the intervention.

Research Design

The research design in the larger project will use a mixed-methods methodology with a Sequential Exploratory Strategy (Creswell, 2009). The mixed-methods will consist of two components, the qualitative and the quantitative. Phase 1 of the project will consist of a qualitative reflective process from the pragmatic perspective (Mortari, 2015) conducted by the researcher (Author 1) focusing on the implementation of the intervention using reflexive journaling after Zoom sessions conducted and of Initial Teacher Education (ITE) student responses to a Google Doc relating to the four skills outlined in RT. The authors will analyse these reflections to provide a rigorous deduction of themes through triangulation (Denzin, 2012). This methodology was selected as the model works well in education research and can provide personal individual growth and experience.

Findings

An analysis of the reflections from the instructor during the intervention revealed three major themes: technological successes and challenges, curriculum design, and pedagogical practice.

Technological successes and challenges

In my reflections of the student engagement and experience, the use of technology in this intervention initially elicited some successes. The flexible nature of the Google Docs allowed students to access the material and learn at a time that suited them. This was beneficial for students who could not attend the videoconferencing sessions, as they did not miss out on any learning or skill practice.

My reflections also unearthed some problems with managing the technology with the initial implementation of the intervention that required improvement. One of the problems was how I would model the comments I expected students to write in the online annotation tool used for reading and practicing the four skills of RT (Palinscar & Brown, 1984). Students would struggle writing comments as they had no examples to refer to. I then implemented a series of video mini-lessons on how to use videoconferencing and the online annotation tool in tandem to model exemplar responses to each of the four strategies, which elicited better student engagement and less confusion (for examples of such, refer to Figure 1).

Another problem found during my reflections was ensuring student engagement with the online annotation tool. I knew that students might not engage with the week's reading, resulting in some students being unable to benefit from the reciprocal nature of the intervention, as their reading was not reinforced or questioned by the other students. I mitigated this by implementing a set criterion of tasks that each student needed to complete during the week, which would then be checked and kept in a log by the instructor. This check would give students extra motivation to interact with the platform.

Curriculum Design

My reflections assisted in developing a curriculum that enabled an instructor to guide students through the reciprocal reading process in an online setting was complex. I realised it is imperative to design a curriculum that both upskills and challenges the students. One part of developing a challenging curriculum was to ensure the early part of the curriculum centres around the reading process. This design was intentional to assist the reader in the skill first, then the application of the skill second. The design of this came from the instructor's prior experience in curriculum design and was reflected upon as follows:

“In teaching reading comprehension in the past, I have seen that the stress of answering comprehension questions can hinder the development of the skill. With this in mind, I believe that developing the

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curriculum to focus on reading first, that is focusing on the process using RT [Palincsar & Brown, 1987], will be more beneficial and applicable for the students.”

This allowed me to focus on teaching the reading process first, giving the students the needed skills and knowledge. Then, I provided opportunities for students to apply, practice and develop their own use of these skills online. Finally, students could test their skills by completing reading comprehension tests to see how their skills progressed.

Another aspect of the curriculum design that benefited students found in my reflections was the complexity of the passages and tests used. The curriculum started at a medium level of complexity and moved to a very high level, which required the students to use their critical reading ability at their highest level at the end of the curriculum. In my reflections, my reasoning was to “expose the readers to medium level of passages before the most complicated of passages to build their confidence and skill in reading to allow them to be more confident in their abilities.” This exposure to complex texts allowed me to further the students' critical reading in a way that broadened their knowledge of various passage types and writing styles.

Pedagogical practice

In my reflections on the development of a pedagogy that effectively taught Reciprocal Reading, they revealed the complexities of implementation in an online environment presented complexities. Some pedagogical considerations were made during the intervention that required alterations for the online setting. One such consideration found by reflection was students' engagement in the dialogue during the videoconferencing sessions. Students (especially new students) would frequently sit quietly and not engage in the intervention. This is shown in my reflections:

“New students seem to not want to engage with the texts. Perhaps this is due to unfamiliarity with the group setting, or maybe it is due to them not knowing what it is I am expecting them to do. Next time, I will

Figure 1: Online annotation tool (Google Doc) showing predicting and clarifying.

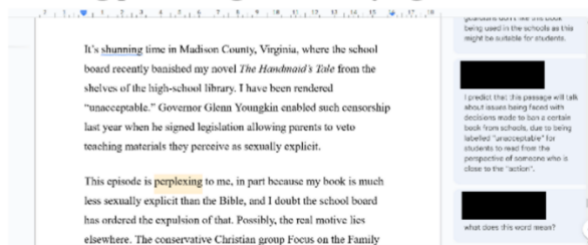
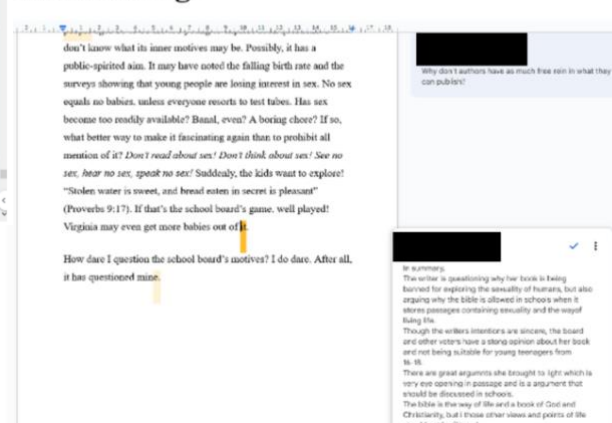


Figure 2: Online annotation tool (Google Doc) showing questioning and summarising.



model for them what it is I expect them to do with the comments section, giving them versions of what I would comment, and hopefully this will make some improvements.”

The remedy for this was to implement a gradual release of responsibility model (Pearson & Gallagher, 1983). In this model the instructor would lead the reading intensively over the first few weeks of the intervention, giving the students time to settle in and get to know the requirements of the intervention. After the first few meetings, I would slowly integrate people into the conversation by asking questions and getting students to share their ideas about the text. This eventually led to the fully-fledged dialogic component (Alexander, 2004) where students and I would converse over the text to fully comprehend it.

Conclusion

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This project's findings revealed three themes: curriculum design, pedagogical practice, and technological challenges. The success and significance of the intervention. The curriculum design theme revealed that developing a curriculum that both upsills and challenges students to improve their reading comprehension capability. This was achieved by designing the curriculum to teach and assist the reader first, then allowing the reader to apply the skill, and finally, students would test their skills. It was also achieved by implementing complex passages to build their confidence.

The pedagogical practice theme revealed that implementing a gradual release of responsibility model (Pearson & Gallagher, 1983) would provide the students with the comfort needed to settle into the intervention and encourage them to engage actively and positively with the intervention. This comfort and engagement from students were first encouraged during a period of instructor-led discussion, followed by slowly integrating students into discussion through questioning before a fully dialogic phase (Alexander, 2004) could begin.

The technological challenge's theme revealed that technology implemented without clear direction, expectations, or explanations would cause confusion in students and result in a lack of engagement. To rectify this, the instructor provided clear explanations and examples of required work through video mini-lessons students could rewatch at any time and provided clear expectations every week for students to do a set criterion of tasks that the instructor would keep in a log.

The findings also reveal the importance of reflexivity in developing the intervention; without these reflexive practices undertaken by the instructor taking place, none of the improvements made to the intervention would have been countered, meaning that some issues with the intervention mightn't have been resolved, resulting in some negative implications on the project as a whole. It proves that reflexivity impacts the overall effectiveness of an instructor and an intervention and shows that a wealth of understanding can be gained through the process that can be used to improve the effectiveness and success of the project in the long term. This paper provides a solid understanding of how reflexivity can be beneficial in developing interventions and provides an understanding of how to utilise it to effectively improve an intervention.

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