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Enhancing vocabulary acquisition through Memrise in an English second-language class: Action research at a TVET college

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ABSTRACT

As the basis of a language, vocabulary is important because it promotes dialogue and the expression of individual ideas and opinions, has an impact on reading comprehension, and improves academic achievement. The purpose of this action research was to use the Memrise application to improve the vocabulary of English Level 2 second-language students (ESL) in the TVET (technical and vocational education and training) sector. The study of a first-year cohort of ESL students at Level 2 was selected through purposive sampling and the data were collected using pre- and post-testing, questionnaires and reflective journal entries documenting the teacher's self-reflection and observations on Memrise usage. Memrise was used in Author One's classroom during a six-week period. Using Guskey's (2002) model of teacher change, the research revealed improved, varying degrees of academic achievement among students following the implementation of the application. In addition, the study highlighted these students' preference for technology-enhanced learning experiences, such as the Memrise application, over traditional text-based approaches. This research not only challenged the teacher-researcher to embrace technology in order to engage in enhanced teaching practices, but also provided the student cohort with an engaging pathway towards vocabulary acquisition, a process that fostered mutual development.

KEYWORDS

Vocabulary; Memrise; English second language; teaching; action research; technical and vocational education and training (TVET)

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Introduction

An enriched understanding of the world and an enhanced future begin with learning the English language. This is because English is a globally used language, both socially and academically. It is also the language of learning and teaching (LoLT) at South African technical and vocational education and training (TVET) colleges. However, the Department of Higher Education and Training (DHET) (2013) established that the majority of the student population in these colleges have indigenous home languages. English is not only the LoLT, but it also serves as a universal language that is used in workplaces across the globe. It is important, therefore, for all students to have a good command of English if they are to improve their quality of life with supplemental job opportunities and strengthened skills. Accordingly, it is crucial that appropriate teaching strategies be employed which apply to both English home-language (HL) and English second-language (ESL) students.

The literature on teaching strategies in TVET asserts that instructors must innovate their teaching methods effectively (Bozkurt, 2019; Stander, Du Plooy & Scheckle, 2022; Nepembe & Simuja, 2023; Magagula & Awodiji, 2024). For this reason, this action-research study adopted the Memrise application as an innovative teaching strategy to enhance vocabulary acquisition among ESL students at Level 2 in the TVET sector. The research focus was decided upon in response to persistently low performance among second-language students in English Level 2 in this sector. The National Certificate: Vocational (or NC(V)) at National Qualifications Framework (NQF) Level 2 is equivalent to Grade 10 in South African secondary schools. Abadzi (2006) states that the inability to read is problematic because it restricts children's participation in formal education. Furthermore, 'it prevents them from successfully learning textbook content, participating in classroom discourse, or responding reliably to tests' (Abadzi, 2006:1). It was observed that the students in the TVET college that was the location for this study did not like to participate in classroom discussions or offer their opinions because of their lack of confidence in articulating themselves in English, which resulted largely from their meagre vocabulary that limited their ability to express their thoughts fluently.

Previous research (Buthelezi, 2018; Stander et al., 2022; Nepembe & Simuja, 2023) has indicated that the majority of TVET students come from poor backgrounds, are not self-motivated, do not work independently, and often do not have the family support to check whether they use language correctly. Predominantly, they speak isiZulu or isiXhosa as their home language, but the LoLT is English. The difficulty is that, on occasion, meaning is lost in the translation between languages. Stander et al. (2022) assert that there is a relationship between poor academic performance (AP) and learning in an additional language. Many students struggle to feel comfortable with English as a subject because they have not built up a store of words over the years and lack the fluency and confidence to communicate effectively using them.

Stander et al. (2002), cited in Buthelezi (2018), state that the TVET sector attracts academically weaker students who regard a TVET college education as their last hope, because many have failed at school or were removed from school because of bad behaviour, pregnancy or drug

abuse, and they then enter the system in an attempt to matriculate. However, there are numerous other challenges with English, specifically among Level 2 second-language students at the TVET college in this study. The lack of vocabulary in English inhibits students from fully participating in class activities and discussions, answering questions correctly, speaking fluently and confidently when socialising, and achieving academically in English and other subjects. Pertinent to this, Stander et al. (2022) found there to be a relationship between English-language proficiency (ELP) and AP. Therefore, ‘if one lacks command of English one may be, or feel, excluded and disempowered’ (Madileng, 2022:1).

In this article, we report on the action-research study that was conducted at a South African TVET college. Motala and Menon (2020) recommended that teaching and learning in higher education should create a well-educated student equipped with the knowledge, skills and attributes for a rapidly changing era. Based on the changing Digital Age, this action research used the Memrise application to improve the vocabulary of English Level 2 second-language students in the specific TVET college. In South Africa, there is a lack of research on Memrise being used in higher education institutions. Therefore, this study also sheds light on an innovative teaching and learning strategy in the context of the Fourth Industrial Revolution (4IR). The study is guided by two research questions:

RQ1: How can the Memrise application be used to improve the vocabulary of Level 2 English second-language students?

RQ2: How did the implementation of the Memrise application improve the vocabulary of Level 2 English second-language students?

Importance of vocabulary

Vocabulary is the basis of all languages. Elmahdi and Hezam (2020) conducted their study in the Saudi Arabian context on the challenges facing methods of teaching English vocabulary to non-native students. They contend that it is wrong to define vocabulary as the words we teach in a foreign language. Instead, they define vocabulary as the total number of words that are needed to communicate ideas and express a speaker’s meaning (Elmahdi & Hezam, 2020:559). Taebenu and Katemba (2021), who conducted a study on vocabulary enhancement through Memrise and Google Classroom, also define vocabulary as ‘words that we should know [in order] to communicate effectively, words in expressive vocabulary for speaking and words in receptive vocabulary for listening’ (2021:231). Regarding someone who is learning English as a second language or a foreign language, it is imperative to have a good range of vocabularies for social interaction.

In this study, we recognised Taebenu and Katemba’s (2021) two kinds of vocabulary: receptive and productive. According to Taebenu and Katemba (2021), receptive vocabulary is that which the students recognise or encounter in reading text but do not use when speaking or writing. In contrast, productive vocabulary is defined as those words that students understand and can

pronounce correctly and use constructively in speaking and writing (Taebenu & Katemba 2021). These types of vocabulary, Taebenu and Katemba (2021) contend, are central to using language and are of critical importance to the typical language of learning. In relation to productive vocabulary, Madileng (2022), in her systematic analysis of the English NC(V) curriculum (DHET, 2013), identified limitations in the curriculum. She established that the English curriculum does not prescribe the set works for students, nor does it include the production of extended text such as discursive essays (2022:91). These limitations deprive students of the ability to develop their vocabulary, which is an essential attribute of, and contributor to, their academic success and beyond. In a study on effective vocabulary instruction, Sedita (2005) underscored the strong relationship between knowledge of vocabulary and reading comprehension.

According to Sedita (2005), if a student does not know the meanings of a sufficient number of the words in a text, comprehension is impossible. This means that students should be exposed to different words and build up a word bank from an early age; and that, when they do so, they are more able to comprehend, read and write – which all have an immense impact on their performance in academia (i.e. their AP). Therefore, if vocabulary is the foundation of all languages and has an impact on AP and the ability to socialise, then the South African government should prioritise vocabulary teaching and learning from a very young age. In the *Mail and Guardian* newspaper, Sommer (2023) laments the state of education in South Africa, stating that it is in decline owing to a number of factors. Some of these are a lack of, or a non-existent, infrastructure, teachers lacking knowledge of current teaching practices, and a shortage of teachers in schools. Schmitt (2000) argues that vocabulary plays an important role in students mastering English-language skills. If students master English, it has an impact on other things, such as articulating their thoughts both verbally and in writing.

There is a holistic value to learning vocabulary in all facets of life, from the early years of development through schooling and beyond. If students do not have a solid foundation of vocabulary, they are disadvantaged in the skills of listening, speaking, reading and writing, which are all essential to effective communication. The issue of low literacy levels is not limited to the TVET colleges, though, but is experienced throughout South Africa. Low literacy levels begin in schools for many reasons, ranging from a lack of resources to teachers lacking knowledge of how to teach vocabulary. This has a ripple effect, and when students arrive at tertiary institutions they struggle because of the many gaps in their vocabulary and their lack of proficiency in English. Howie et al. (2016) state:

South Africa's participation in [the] three cycles of Progress in International Reading Literacy Study (PIRLS) (2006, 2011 and 2016) shows consistently low reading comprehension levels in the fourth grade. The most recent data indicated that 78% of South African Grade 4 children cannot read for meaning or retrieve basic information from the text to answer simplistic questions, compared to 4% of students internationally (Howie et al., 2016:55).

According to Spaull and Pretorius (2019), similar reading skills that were required for print in the 20th century are required for digital formats in the 21st century.

Technology has changed lives and enabled people to access a world of opportunities and resources. Nuralisah and Kareviati (2020) assert that students' motivation for, and interest in, learning vocabulary can be improved when teachers use learning methods and strategies that the students prefer. Generally, technology in education has brought dull topics to life and made difficult concepts much easier and more fun to learn. Jagtap (2015) explains how the role of the educator has advanced as a result of technological advancements. Teachers have adapted to these changes in their pedagogical teaching, enabling students to become more independent as a result. Although the Memrise application, through research studies (Kent & Sherman, 2013; Fadhilawati, 2016; Nuralisah & Kareviati, 2020), has been shown to lead to positive academic improvements, it is not without its negative aspects, specifically among TVET students in South Africa. For instance, research conducted in Columbia (Nurani, 2023) and Indonesia (Fadhilawati, 2016) using the Memrise application in universities as a teaching tool showed positive outcomes in vocabulary acquisition, but the application remains inaccessible without data or a Wi-Fi connection (Fadhilawati, 2016). We elaborate on Memrise in the methodology section.

Conceptual framework

It is widely acknowledged that it is important for teachers to engage in continuing professional development in order to remain at the cutting edge of their profession. A number of external professional development initiatives are available for South African teachers; these include short courses, workshops and university qualifications. However, there is an acknowledged need for research-backed teacher enquiry as a type of professional development. This entails educators assuming accountability for their own learning, contextualising it in their classrooms, and aligning it with their teaching practice. For this reason, this action research, serving as a transformative professional development model, targeted the enhancement of teaching practice. In line with the two research questions, this study employed Guskey's (2002) model of teacher change as depicted in Figure 1. The model shows that the three major goals of the professional development of teachers are changes in a teacher's classroom practices, changes in learning outcomes for the students, and changes in the beliefs and attitudes of the teacher.

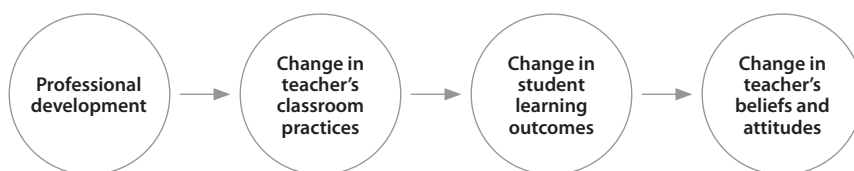


FIGURE 1: Model of teacher change

Source: adopted from Guskey, 2002

Guskey (2002) identifies three major goals of professional development programmes, which are: change in the classroom practices of teachers, change in their attitudes and beliefs, and change in the learning outcomes of students. The first construct of the model recognises that change is challenging for teachers but is potentially progressive. Teachers are sometimes hesitant to change (Guskey, 2002) because of their fear of the unknown and not knowing whether something will work or not. Many teachers therefore remain rigid in their teaching practices, which makes them view change as very risky, uncomfortable and unnecessary, as they associate it with added workloads, which might not even pay off or ultimately advance students' performance. The second construct that is key to the model is the tangibility of proof or evidence of students' progress. Feedback is essential to gauge whether something is successful or not. Therefore, it is after obtaining feedback or evidence, especially positive feedback, that teachers' attitudes and beliefs may shift.

The final construct is for top management to provide continuous follow-up, support and pressure. Supporting teachers through the successes or failures that accompany change is essential and the correct amount of pressure pushes teachers to try something new. This study concurs with Guskey's (2002) model of teacher change in relation to Memrise being implemented in the classroom as part of teaching practice. According to the data generated from the questionnaires, self-reflection and testing conducted, the positive learning outcomes of students, or the improvement in their vocabulary, had an impact on Author One's beliefs and attitudes to technological development and the use of Memrise.

Research context

This action-research study was conducted in a TVET college located in the uMgungundlovu district of KwaZulu-Natal. In South Africa, the education system is directed by two separate government ministries and departments: the Department of Basic Education (DBE), which oversees education in primary and secondary schools, and the DHET, which oversees tertiary and vocational education. Vocational education began in the form of further education and training (FET) colleges, which were renamed TVET colleges. In these colleges, the aim is to integrate theory, practical training and work-based experience. One of the programmes offered at TVET colleges is the National Certificate (Vocational) (NC(V)), which comprises Levels 2, 3 and 4 of the NQF, the equivalent of matriculation, comprising Grades 10, 11 and 12. An NC(V) programme consists of seven subjects, three of which are fundamental: Life Orientation, English First Additional Language (FAL) and Mathematics/Mathematical Literacy – all of which are compulsory and lay the foundation for the other four vocational subjects.

Methodology

The present study adopted a qualitative approach, and an action-research design was used. Given that action research is employed to enhance teaching practice as a component of a transformative process (Koshy, Koshy & Waterman, 2011), this study is positioned within the critical paradigm. Cohen, Manion and Morrison (2018) explain that the critical paradigm recognises the ideological and political contexts of educational research, contexts that strive to

emancipate individuals. This action-research study is therefore emancipatory due to changing conditions which might hamper desired improvement in classroom practices. We, the authors, argue that conducting this action research is a 'transformative professional development' (Kennedy, 2014:689) activity which 'is liberated from the imposed activities of the school management team or Department of Basic Education officials' (Mathura & Zulu, 2021:3).

Author One reflected on her teaching practice and designed an intervention that aimed to change and transform her teaching practice in the TVET context. Christiansen & Bertram (2014:27) posit that the critical paradigm perceives reality as being shaped by social, political, cultural, economic and various other dynamics. In this study, the students' language proficiency is foregrounded by their social and cultural backgrounds. In addition, the students' proficiency in their home language is influenced by their socialisation and upbringing. Author One conducted action research as a transformational tool (Christiansen & Bertram, 2014) with the support and guidance of Author Two in order to acquire knowledge about teaching English and to enhance her own professional development. Action research is explained by Kemmis and Taggart (1992) as including stages that should be implemented: planning, action, observing and reflecting. The research was conducted to enhance the English vocabulary of ESL students. It was also conducted to improve Author One's teaching practices in her English classrooms.

In this action research, Memrise was used as a teaching strategy. The Memrise application, when used in classes, has been shown to be an effective technological strategy for increasing the interest of students in acquiring vocabulary. Fadhilawati (2016:36) defines Memrise as 'an online learning community where we can learn almost anything, especially language, mostly for free. It is the right mix of science, fun, and community'. Fadhilawati (2016) established that, instead of using a dictionary with words and meanings, the Memrise application has brought those words and meanings to life with colour, interaction, memes, progress reports, activities and goal-setting. The scientific community has made significant progress in enhancing our understanding of the benefits of Memrise for vocabulary acquisition (Kent & Sherman, 2013; Fadhilawati, 2016; Nuralisah & Kareviati, 2020). However, although we have substantial information about Memrise and the benefits of increased vocabulary among students as highlighted in research studies such as those of Fadhilawati (2016), less is known about educators' perceptions of the ways in which technology can enhance traditional methods of teaching vocabulary and can be fostered among students.

Figure 2 showcases examples of the various categories of learning activity available when using the Memrise application.

The screenshot illustrates students engaging with the learning category of memory training, where they complete tasks aimed at enhancing memory retention and learning efficiency. The *Memrise* application has a variety of features, including audio, visual and media (Taebenu & Katemba 2021). It was implemented in the scheduled English lessons as part of the TVET timetable and as four stages spanning a duration of six weeks, as detailed in the following sections:

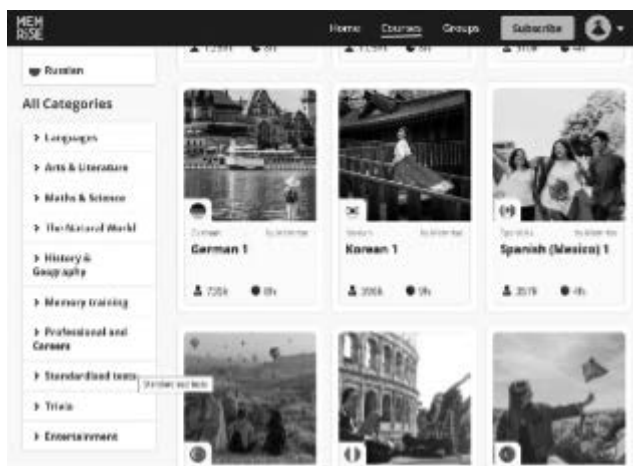


FIGURE 2: Examples of categories of learning activity for Memrise

Source: <https://www.memrise.com>

Week 1: Planning stage

The planning stage of the action research involves outlining ideas and activities from their inception to the end of the study (Mistar & Zuhairini, 2010). In the first week, Author One started to draw up a plan of action. The activities that were prepared included: designing lesson plans; a short-story comprehension exercise with tasks; and setting pre- and post-tests and a questionnaire. The tests took the form of a comprehension exercise titled 'Make Way for Generation Z', by Rea Khoabane; it was worth 30 marks. The questionnaire contained both open- and closed-ended questions. The Memrise application was downloaded on each computer and the computer laboratory was booked for the relevant dates. In addition, the criteria were set in such a way that the same students were given a comprehension exercise before and after the use of the Memrise application to deduce any significant change in their vocabulary use, either positively or negatively.

Weeks 2–5: Implementation of Memrise

Implementation requires the researcher to act and execute the plan formulated in the previous stage. Author One gave the students the short story; it was read aloud by Author One to all the students present in the class. The students were then divided into groups of six and one student then read the short story aloud a second time; students then highlighted and wrote down all the 'difficult' words on a sheet of paper. They then used dictionaries to find the meanings of all the words written down from the short story. Later, in Week 3 (14–18 August 2023), Author One allocated students time to learn the words and the meanings on their list during class time and encouraged them to continue learning them at

home. Author One had conducted the pre-test in Week 2, based on the short story and the words the students had highlighted.

The implementation of the Memrise application commenced in Week 4 (21–25 August 2023). First, Author One took the students to the computer laboratory and introduced them to the application, showing them how to work with it. Next, the students familiarised themselves with general and specific words related to the post-test short-story comprehension. They then learnt the words and their meaning through various games, quiz activities and repetition tasks. They were encouraged to download the application on their cell phones and continue learning the general and specific words at home. The activities the students were exposed to are explained in more detail in the findings section of this article.

Week 6: Observations

During the observation phase, the researcher monitored the effects of the action research in its context (Nugroho, Nurkamto & Sulistyowati, 2012). In Stage 3, Author One observed the students' vocabulary use to identify whether any improvements had occurred and noted her reflections in her journal. According to Koshy et al. (2011), during observation, an educator must explain the procedure for data collection, the instruments used to gather data, and how they are used. During observation, Author One noted down evidence in her journal to record and determine the realisation of the strategy in relation to solving the research problem. Two varieties of data-collection method were used: first, conducting tests to ascertain the students' improvement in the implementation of Memrise; and, second, the completion and analysis of questionnaires to understand the students' responses to the use of Memrise as a learning tool in English Level 2. Author One then administered the post-test on the short-story comprehension to the students.

Week 6: Reflection continued

The function of reflection is to determine the strengths and weaknesses of the research and whether it has been successful (Nugroho et al., 2012). Author One reflected on the cycle over the period of six weeks.

Based on the purpose of conducting the action research, purposive sampling was used to select the participants. Purposive sampling involves the researcher making deliberate choices about which individuals, groups or objects to include in the study (Christiansen & Bertram, 2014:60). The TVET students were chosen because Author One teaches them English and they possess the characteristics that were needed. The study purposely examined the use of Memrise by second-language students in an English class because it was not known whether any improvement among them would be demonstrated. However, ultimately, it aimed at examining any improvements in educational practices which might benefit lecturers, students and the broader community in the TVET sector.

TABLE 1: Biographical information of participants

Participants	Gender	Age	Years N(CV)	Progression in Grade 9
Group A	11 females	18–22	1	None
Group B	12 females and 1 male	18–22	1	None
Group C	14 females and 3 males	18–22	1	None

Before conducting the study, the authors adhered to ethical protocols. We applied for permission from the DHET and the University of KwaZulu-Natal (UKZN) to conduct the study. Relevant gatekeepers' permission for the study to be undertaken in one TVET college was obtained from the principal. The TVET students consented to participate in the study. The ethical principles that should be present in all research studies are autonomy, non-maleficence and beneficence (Durrheim & Wassenaar, 2002, as cited in Christiansen & Beretram, 2014:66). To uphold and respect the autonomy of the participants, consent forms were distributed to 40 Level 2 English (FAL) second-language students. The participants engaged freely and voluntarily and were able to withdraw from the study at any time. Pseudonyms were used for all the students to preserve their anonymity, and all the information gathered was treated with the utmost confidentiality. No harm was caused to any student during the research process and therefore it aligned with the non-maleficence requirement. The beneficence of this study was to Author One as a participant in the study and to Author One's exposure to new teaching practices, to the students who were exposed to new technology during their English lessons, and to the larger TVET community.

In order to maintain confidentiality, the names of the students were not used. Table 1 shows the participants' profiles for gender, age, years doing the N(CV) programme, and if they had progressed in Grade 9. The sample comprised all of the students who were taught English by the lecturer (Author One), making a total of 40 students: 37 females and three males aged between 18–22 years old, along with Author One as a participant. All the participants were studying English Level 2 at the time and Author One was also a participant in this study as she was actively implementing an innovative teaching strategy in her English classes.

The primary data sources were questionnaires, which contained open- and closed-ended questions, pre- and post-vocabulary testing and observations, and self-reflection in Author One's journal. The quantitative data were generated from pre- and post-testing to ascertain and track any improvement in the vocabulary among Level 2 ESL students through the use of Memrise. The study included questionnaires that were distributed among the group of 40 students at the TVET college. The questionnaire was used to generate participants' biographical data through closed-ended questions and open questions were used to understand the students' experiences of Memrise. This study was unique in that it used pre- and post-testing. Self-reflections were completed by Author One to identify criteria that could determine the effectiveness of implementing Memrise rather than traditional teaching methods for the improvement of Level 2 English vocabulary acquisition.

According to Creswell (2014), the combination of quantitative and qualitative data generation suggests mixed methods, but the authors argue that this action research remained a qualitative approach because the questionnaires were not employed in order to cross-check or confirm the findings of the qualitative data; they were used mainly to reach many participants using open-ended questions seeking qualitative data. The data were also obtained from the existing working documents, manuals and policies that were considered for the review. The approach of pre- and post-testing was intended to determine whether Memrise contributed positively to the academic, individual and social gains of the students; and it made it possible to examine student and lecturer views regarding the overall experience of using digital technology.

This study adopted a deductive approach to data analysis. According to Clarke and Braun (2013:3), the researcher brings to the data 'a series of concepts, ideas or topics they use to code and interpret the data'. To present the data, Guskey's (2002) model of predetermined teacher-change themes was used, and the data-analysis process was guided by this model. According to Clarke and Braun (2013:2), '[t]hematic analysis is a method for systematically identifying, organising, and offering insight into, patterns of meaning (themes) across a dataset.'

Trustworthiness

Guba and Lincoln, 1985 (as cited in Christiansen & Bertram, 2014) explain the trustworthiness of research findings by using the concepts of credibility (Do the findings reflect the reality and lived experiences of the participants?), transferability (To what extent can the research be transferred to another context?), dependability and confirmability. These are the strategies for enhancing trustworthiness. In this study, we adopted triangulation in an attempt to confirm the credibility of the research findings. According to Cohen et al. (2018), triangulation requires the use of different data-generation methods or data types to establish common patterns. Observations were made, otherwise known as 'reflexive self-analysis', through Author One's weekly journal entries by using thick description. These entries provided sufficient detail to enable the reader to judge whether the findings can be transferred to another context. Confirmability was enhanced by an audit trail presenting every step of the data analysis to show transparency and to provide a rationale for the decisions made. Dependability was enhanced by the use of rich data so that, when the research is repeated, the findings will be consistent.

Findings of the study

In this section, we use the constructs of Guskey's (2002) model of teacher change to present the findings of this study: professional development, change in teachers' classroom practices, change in student learning outcomes and change in teachers' beliefs and attitudes. An absence of knowledge of vocabulary among students and traditional vocabulary teaching methods were both evident during the pre-testing.

Theme 1: Professional development

Professional development is the first theme of Guskey’s (2002) model, and it shows that the outcomes of professional development are change in teachers’ classroom practices, change in student learning outcomes, and change in teachers’ attitudes and beliefs. In this study, professional development was enriched by implementing a new technology, Memrise, aimed at enhancing comprehension in teaching and learning practices in the classroom. Teachers’ attitudes and beliefs were improved due to the noticeable progress made by ESL students. This innovative approach was novel for both the students and Author One, and it fostered growth through the action-research process. This aligns with the overarching goal of action research, which is to empower teachers to become agents of their own transformative change.

Theme 2: Change in teachers’ classroom practices

Guskey’s (2002) second theme is change in teachers’ classroom practices. This change may occur when teachers try to incorporate something new into their teaching practices or add technology to enhance their lessons. A change in classroom practices would possibly mean the future inclusion of these practices as part of the enacted curriculum. Author One initially employed traditional methods of teaching English comprehension, as outlined in ‘Make Way for Generation Z’ (Khoabane & Du Plessis, 2023), and conducted a pre-test. Subsequently, the impact of this approach was compared with the post-test results following the implementation of Memrise. The performance of the students is detailed in Table 2. Figure 3 shows a screenshot of a journal reflection on Author One’s activities during the planning for the implementation of Memrise.

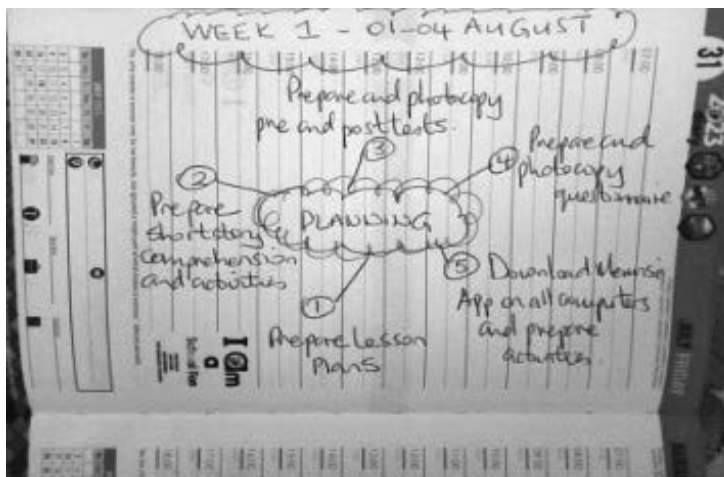


FIGURE 3: Author One’s journal reflection on activities during the planning phase

As the initial step of implementing Memrise, Author One introduced the application to students and engaged them in academic-English learning through memory games with specific tasks they had to complete. Screenshots illustrating Memrise activities are depicted in Figures 4, 5 and 6.

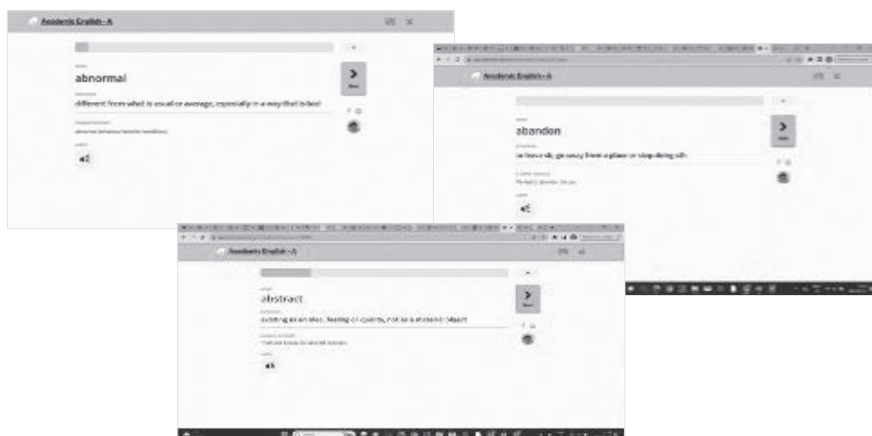


FIGURE 4: Academic-English activity completed using Memrise

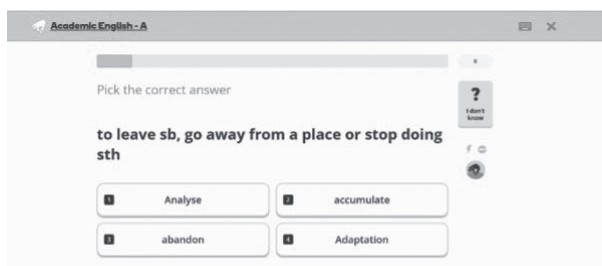


FIGURE 5: Academic-English activity completed using Memrise

Figures 4 and 5 above illustrate the academic-English learning process, where students are presented with word definitions followed by quiz questions prompting them to apply their newly acquired knowledge.

Figure 6 shows one category of learning English using the Memrise application. There are around 380 different categories that students need to encounter in order to grasp English grammar and language more fully. The screenshots illustrate students engaging with the section titled English Grammar – Pronouns, where they completed quiz questions aimed at enhancing memory retention and learning efficiency.



FIGURE 6: Learning about pronouns followed by a quiz using Memrise

Theme 3: Change in student learning outcomes

The third theme was change in student learning outcomes. According to Guskey (2002), these are the learning outcomes of students – which can be anything from a class test, student attendance to formal assessment – where the validity of teaching can be measured. Data from the questionnaires revealed that 90% of the students expressed dissatisfaction with comprehension activities when Author One used traditional teaching methods without technology, primarily citing a dislike of reading. This sentiment was exacerbated by a tendency to lose interest quickly, which could be attributed to the perceived lengthiness of comprehension passages. The lack of engagement appeared to contribute to the poor performance of some students in the pre-test.

The following extract illustrates the students' perceptions of their performance in the pre-test:

Student 2: I'm not sure what ... the important ideas [are].

Student 24: I don't like reading.

Student 34: I lose interest fast.

Student 37: I miss ... some stuff in the story.

Student 40: I don't know how [to] tie up the main ideas.

The findings from the questionnaires revealed that the students liked Memrise due to its technological aspect, enjoyable nature, vibrant visuals and other factors. However, the observation notes suggest that a few students did not enjoy using the Memrise application during English lessons, particularly those students who obtained marks below 50%. They

seem to have experienced challenges in learning with technology and content. The student responses in the questionnaire indicate their preferences regarding the four aspects of English: orals, creative work, comprehension and language. The data from the questionnaires suggest that all the students enjoyed orals the most. This was also evident in the observation notes on the Memrise lessons, namely that more students were actively involved in the discussion. The findings from the comparison between the pre-tests and the post-tests revealed a predominantly positive improvement in vocabulary learning, with more favourable outcomes than negative ones. Table 2 illustrates the comparison of the pre- and post-test results.

TABLE 2: Comparison of pre- and post-test results

STUDENTS	PRE-TEST	POST-TEST
1	54	58
2	50	56
3	44	70
4	72	76
5	58	70
6	60	74
7	92	86
8	74	78
9	66	68
10	36	62
11	62	52
12	28	52
13	80	80
14	64	74
15	86	80
16	84	90
17	58	66
18	64	76
19	82	88
20	50	80
21	50	64
22	42	56
23	95	96
24	30	45
25	44	48
26	68	62
27	80	74
28	74	72

STUDENTS	PRE-TEST	POST-TEST
29	78	93
30	54	54
31	78	72
32	46	42
33	42	48
34	82	80
35	68	54
36	68	68
37	34	64
38	82	84
39	68	88
40	42	82
Average	62.23	69.55

Table 2 indicates that the average percentage of the post-test for this cohort increased from 62.2% to 69.5%, implying an overall improvement in performance following the implementation of Memrise. While the average percentage demonstrates an increase, it is noteworthy that the performance of 26 students improved. However, there were more severe reductions in scores between pre-test and post-test. There are students such as Students 24 and 25 who achieved marks below 50%. Surprisingly, Student 32 scored 46% in the pre-test and 42% in the post-test and Student 34 scored 82% in the pre-test and 80% in the post-test. The decline in students' performance in the post-test occurred with both high and low achievers and this raises a concern about the intervention strategy.

Theme 4: Change in teachers' beliefs and attitudes

A change in teachers' attitudes and beliefs is the fourth theme. It indicates that, once teachers are provided with proof or see an improvement in student outcomes for themselves, their attitudes and beliefs change due to the change in, or introduction of, new teaching practices or technology in the classroom. The observations revealed that the students enjoy learning through technology; they also socialised much more and interacted with Author One, the teacher, to a much greater extent because of the relaxed environment. They did not enjoy having to find words from a dictionary and many students gave one person in their group the dictionary to find the words and then they all wrote these down.

This action research has inspired us to continuously try new things and reflect on what works and what does not work, but, ultimately, to try things out because the classroom is not just a space for the teacher, but also for the students. At the beginning of this study, Author One was very hesitant about introducing technology during English lessons due to time constraints and personal hesitation that arose from a belief that technology is time-

consuming to learn and distracts students from the content of syllabi that needs to be covered. However, since obtaining the positive results derived from the pre- and post-test, questionnaires, observations and self-reflection, Author One's attitude towards, and beliefs about, technology have changed. In this study, the authors realised that technology is there to make teachers' lives easier, to enhance and add variety to lessons, and to adjust and stay abreast of teaching in the 21st century; it is not there to take over teachers' jobs, but to help to improve or refine them.

Discussion of findings and recommendations

The adoption of innovative teaching strategies aimed to facilitate students' acquisition of vocabulary, which, according to the findings, proved to be largely beneficial for both the educators and the students involved in the study. A comparison between the pre- and post-tests suggests an appreciable increase in the academic results of a number of the students. The findings indicate that most of the students preferred the use of a technological application because it was enjoyable and gave rise to immediate progress. It was also something new and colourful and there was a ranking system that motivated them to use the application more and perform well in the tests. After one cycle of action, the result of the research showed that learning and reviewing vocabulary through Memrise could improve the students' achievement in vocabulary acquisition from a mean score of 62.2 (pre-test) to that of 69.5 (post-test). Moreover, the students responded positively to the strategy applied, as reflected in the results of the questionnaire they responded to.

The findings concur with similar research conducted (Fadhilawati, 2016) by the Faculty of Agriculture and Animal Husbandry at the Islamic University of Balitar. The implications of these findings suggest that the implementation of Memrise led to an overall improvement in vocabulary learning among the students. However, the presence of students whose performance did not improve, or even declined, highlights the need for further investigation into individual learning needs and the potential challenges of implementing educational technologies such as Memrise. In addition, it underscores the importance of ongoing monitoring and adaptation of teaching strategies to ensure that all students benefit from the use of technologies.

The implementation of the Memrise application over traditional teaching practices was overwhelming at first. It was difficult to create vocabulary lists and class groups and to decide on ways to monitor the students' work. In addition, during the lessons, it was not easy to tell whether the students understood the vocabulary lists or not. As time progressed, though, the authors became familiar with the application and could also assist those students who were not computer-literate. In line with those of Nepembe and Simuja (2023), the findings of this study indicate the need for teacher training that is centred on designing lesson plans which integrate technology, pedagogy and content knowledge. Altun and Khurshid Ahmad (2021) highlight the fact that embracing technology is one of the important ways of progressing the teaching-learning process in schools and universities, especially for English-language

teaching. The Memrise application provided a multitude of various activities for students to explore and learn from, which was interesting for many of them; and its strategy was used to improve the vocabulary of English Level 2 students. The use of technology during lessons also enabled Author One to adapt her pedagogical teaching practices and foster a more independent working environment among her students.

Limitations of the study

Applying Memrise as a teaching–learning mechanism had several limitations. One limitation of the study was the unstable, or sometimes non-existent, Wi-Fi connection. This rendered accessing the Memrise application impossible, because an online application of necessity requires the use of Wi-Fi. An additional constraint was that it was a once-off research intervention where students used technology that was novel to them, with some students struggling to master it. There were also time constraints in trying to complete the curriculum while at the same time attempting to expose the students to the Memrise application or use it to enhance their vocabulary. A technical difficulty we faced was the use of the general category of Memrise, which asks for the insertion of two languages – one the users understand (questions based in this language) and the target language to be learnt (the new language being learnt). The application does not have isiZulu as an option for the known language, which is a problem since the majority of the students in the TVET sector that Author One teaches are isiZulu speakers. Another problematic aspect was that we were forced to use either US (United States) English or UK (United Kingdom) English, as there was no option for South African English. Nevertheless, we used general UK English because the pronunciation of words is closely linked to the pronunciations common in South Africa. There were also close ties between South Africa, Britain and the British colonies during the 19th and 20th centuries, which helped with pronunciation. Furthermore, there was a lack of computers with the Memrise application installed on them, a lack of availability of computer laboratories, and also little contact time for students to use Memrise. Despite these limitations and obstacles, the students still managed to meet their goals, in the process learning the identified new vocabulary and applying it to comprehension skills.

This was a once-off research intervention where students used technology that was novel to them, so the positive outcomes could also be attributed to some extent to the non-traditional teaching methods. One might wonder, though, whether students would remain as enthusiastic if this technology were to be used regularly for vocabulary acquisition.

These limitations suggest a need for intervention from TVET stakeholders to provide additional resources and enable another action-research cycle. In a future action-research cycle, students should be allocated data to access the Memrise application on their cell phones, which would enable them to continue their vocabulary enhancement at home and stay motivated outside of classroom time. In addition, installing the application in a general computer laboratory would enable students to continue learning during their free time. It

would also be beneficial if the application could interpret words from isiZulu to English and offer the option of South African English.

Conclusion

The purpose of the study was to investigate whether using the Memrise application could help to improve the vocabulary of students in English Level 2 classes in the TVET sector. Memrise has been found to be a valuable tool for enhancing students' vocabulary, equipping them with the increased language, literacy, comprehension and fluency skills necessary for proficiency in expressing themselves orally and verbally in English. The study highlighted numerous advantages of using Memrise: academic improvement, boosting student confidence, more noticeable participation in classroom activities, and a keener interest in learning English, especially when using the application. The problems arising from inaccessible Wi-Fi and computer laboratories, time constraints, this being a once-off study, and limited language and country representation on the application, had a minimal effect on the outcomes – which were largely positive. Overall, Memrise advanced the English vocabulary of students in addition to contributing to Author One's professional development, specifically changes in her classroom practices. The study also indicated that technology is something which all educational stakeholders should consider embracing in an ever-changing Digital Age. Future research could explore the effectiveness of incorporating Memrise into classroom activities more intrinsically and regularly in order to enhance English-grammar instruction and English-language fluency among second-language students.

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