



Exploring the Experiences of Teachers in Integrating Technology into Teaching English in Rural Primary Schools in South Africa

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ABSTRACT

The integration of technology in schools, specifically in teaching English First Additional Language (EFAL), has become vital in the education sector as a means of preparing learners and teachers for 21st-century classrooms. As the literature shows, the integration of technology allows learners to engage deeply with content and promotes authentic learning. The TPACK theory was used in this study to examine how South African primary school teachers in rural areas of Limpopo integrated technology into the teaching of EFAL in schools. The study-adopted an interpretive paradigm and followed a qualitative research approach. A case study research design was also used. Data was collected from five primary schools, following purposive sampling to select 11 participants. The researchers used semi-structured interviews to collect data from the participants. It was found that most teachers in Limpopo primary schools cannot use technology in the classroom. The study further revealed that the schools could not afford the cost of internet connectivity. Even though some participants demonstrated that they could use technology for teaching and learning, they could not integrate it for effective participation in the classroom. The study concluded that the use of technology for teaching EFAL promotes quality teaching and learning and could also improve authentic learning. It is therefore recommended that teachers and learners be trained on how to use technology as part of the teaching and learning process. Moreover, the study recommended that higher education institutions and other stakeholders strengthen technological support to schools, for the effective teaching of EFAL and other subjects. This study offers stakeholders of the education system with guidelines on how to use technology for teaching and learning.

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INTRODUCTION

Internationally, the introduction of technology into teaching and learning has resulted in major disparities when it comes to the allocation of resources between urban and rural schools.¹ South Africa is no exception when it comes to this. Rural and township schools normally experience a shortage of

¹ Khashane Stephen Malatji et al., "Integrating Technology into Teaching in Higher Education: A Response to the Fourth Industrial Revolution in a University of Technology," *Journal of Educational Studies* 21, no. 1 (2022): 107–25.

resources which has great implications on the integration of technology into teaching and learning. Archer with her Social Realist theory talks of implications that can come as a result of poor structure when it comes to the integration of technology into teaching and learning.² These issues are exacerbated by socio-economic factors that impact learners' learning opportunities. Despite these challenges, there is a growing recognition of the role that technology can play in enhancing educational outcomes. The use of technology in education has been identified as one way of enhancing the pedagogical proficiency of educators and it results in improved teaching and learning outcomes. Global trends emphasize the importance of digital literacy and the use of technology to engage learners, facilitate differentiated instruction, and provide access to diverse resources.³ In the context of teaching English, technology can support language acquisition through interactive tools, multimedia resources, and online platforms.

In the context of South Africa, the Department of Basic Education has introduced several policies with the view to promote the use of teaching for academic purposes which suggest some extensive monitoring to ensure that the gadgets are specifically used for educational purposes. Furthermore, the National Curriculum and Assessment Policy Statement (CAPS) calls for the integration of technology to enhance teaching and improve student learning and participation. However, the successful implementation of these policies in rural settings remains a challenge, often hindered by infrastructural and resource limitations.⁴

Teachers in rural primary schools encounter numerous obstacles when attempting to integrate technology into their English teaching practices.⁵ These challenges include

- **Structural challenges:** Most schools in the rural context are experiencing structural challenges such as computer labs, computers, reliable internet access and connectivity
- **Professional Development:** Teachers are the key stakeholders when it comes to the implementation of technology for teaching and learning. Therefore, they need ongoing training to keep them abreast with the new technological trends. The lack of teachers' technological competencies defeats the purpose of turning traditional classrooms into digital classrooms that suit 21st-century learners.
- **Cultural Attitudes:** There may be resistance to change among educators and communities, with traditional teaching methods deeply rooted in the local educational culture. Archer talks of culture that can either be negative or positive. A negative culture may delay progress and development within education,
- **Maintenance and Support:** Lack of support from the community has resulted in vandalism and schools find it difficult to keep on maintaining the infrastructure that is always tortured by the members of the community.

Despite these challenges, there are numerous examples of successful technology integration in rural settings. Teachers who have creatively utilized available resources or adapted technology to local contexts have reported increased learners' motivation and improved language skills. The use of mobile learning applications and online resources can provide learners with additional practice and exposure to English, which is particularly beneficial in areas like township and rural schools where English is a second language.

Computer-based teaching and learning offer learners timely information and relevant resources.⁶ Learners were found to learn and engage more when technology was used as a learning

² M. Archer, *Realist Social Theory: The Morphogenetic Approach* (Cambridge University Press, 1995).

³ E M Kgwete and K S Malatji, "Problem-Solving as Teaching Strategy: Promoting Active Learning in a South African University of Technology," *Gender and Behaviour* 19, no. 2 (2021): 18027–34.

⁴ Malatji et al., "Integrating Technology into Teaching in Higher Education: A Response to the Fourth Industrial Revolution in a University of Technology."

⁵ Malatji et al., "Integrating Technology into Teaching in Higher Education: A Response to the Fourth Industrial Revolution in a University of Technology."

⁶ Irina Petrovna Gladilina et al., "Use of Information and Computer-Based Distance Learning Technologies during COVID-19 Active Restrictions," *International Journal of Advanced Computer Science and Applications* 13, no. 6 (2022), <https://doi.org/10.14569/IJACSA.2022.0130688>.

resource.⁷ Larsen-Freeman endorses the notion that technology offers educational tools and enhances the learning process for learners globally.⁸ With the use of technology, learners can access a variety of resources and can be motivated to learn a language easier and quicker. It is for this reason that the present study investigates the integration of technology in EFAL teaching in Limpopo province. The rationale for this study is motivated by the poor performance of the country in the Progress in International Reading Literacy Study (PIRLS), which showed that South African learners cannot read for comprehension. This was evident when PIRLS results in 2006 (87%), 2011 (82%), 2016 (78%), and 2021 (81%) indicated that Grade 4 learners cannot read for meaning when compared to other participating learners.⁹

Among other important factors, it was found that the poor use of technology in South African schools could be one of the reasons for learners' poor English performance.¹⁰ It is important that the teaching of EFAL in South Africa should be investigated, to propose improved approaches and innovative interventions. Although vigorously advocated as a panacea for poor educational outcomes, the integration of technology in teaching is still a mirage for most teachers in developing countries such as South Africa, particularly in rural schools, as they lack the basic technological resources needed for effective teaching.¹¹

By contrast, various researchers lament the fact that learners in South Africa cannot read due to poor teaching methods, and the lack of technology integration in teaching and learning.¹² The study of Ejikeme and Okpala confirms that even where educational technologies are provided, most teachers do not use technology optimally due to their illiteracy in this respect, and a lack of support to help them acquire the critical skills that will enable meaningful teaching.¹³

The use of educational technologies for instructional purposes is gaining currency around the world, because of their affordances in enhancing teaching and learning.¹⁴ In response to poor technology integration (or a lack thereof) for the teaching of EFAL in Limpopo, the researchers in this study initiated an engaged scholarship project dubbed Classroom Interaction Pedagogy (CIP) with five selected primary schools in one circuit in Limpopo. The project aimed to support and train EFAL teachers in grades 4–6 on how to integrate technology for effective teaching and learning.

To achieve high levels of technological literacy, and successful teaching and learning, teachers and learners should be exposed to the available technologies, understand their purpose, and be guided to practice using them in authentic instructional situations.¹⁵ Technology literacy is sometimes used synonymously with computer literacy to refer to a person's knowledge, skills, and ability to use computer programmes and related applications comfortably.¹⁶ For Hansen, technology literacy is "an individual's abilities to adopt, adapt, invent, and evaluate technology to positively affect his or her life, community, and environment."¹⁷ In an educational situation, technology literacy refers to a teacher's ability to use technology (i.e., any tool or electronic or mechanical device) effectively in a teaching

⁷ Binnur Genç İltter, "How Does Technology Affect Language Learning Process at an Early Age?," *Procedia - Social and Behavioral Sciences* 199 (August 2015): 311–16, <https://doi.org/10.1016/j.sbspro.2015.07.552>.

⁸ Diane Larsen-Freeman, *Techniques and Principles in Language Teaching* (Oxford University Press, 2000).

⁹ Bongwiwe Mtambo and Lindiwe Tshuma, "Intermediate Phase Learner Performance in English: A Quantitative Analysis," *Reading & Writing-Journal of the Reading Association of South Africa* 14, no. 1 (2023): 430.

¹⁰ Joy Olivier, Nicola Harris, and Meghan Borole, "Using Technology to Improve English Literacy: The Case of 'Reading Eggs' in South Africa 2012-2021," *INTERVENTIONS*, n.d., 169.

¹¹ Mtambo and Tshuma, "Intermediate Phase Learner Performance in English: A Quantitative Analysis."

¹² S Howie et al., "Changes and Development in Schooling and Classroom Conditions PIRLS 2006-PIRLS 2016 and Its Effect on Student Reading Performance," in *ECER Conference*, 2017; N. Spaul, "From Bad to Worse: New Study Shows 81% of Grade 4 Pupils in SA Can't Read in Any Language," *Dailymaverick*, 2023, <https://www.dailymaverick.co.za/article/2023-05-16-from-bad-to-worse-new-study-shows-81-of-grade-4-pupils-in-sa-cant-read-in-any-language/>.

¹³ Anthonia N. Ejikeme and Helen N. Okpala, "Promoting Children's Learning through Technology Literacy: Challenges to School Librarians in the 21st Century," *Education and Information Technologies* 22, no. 3 (May 1, 2017): 1163–77, <https://doi.org/10.1007/s10639-016-9481-1>.

¹⁴ Derya Kulavuz-Onal, "Technology in Instruction," *The TESOL Encyclopedia of English Language Teaching* 1 (2018): 1–12; Weijun Liang, "University Teachers' Technology Integration in Teaching English as a Foreign Language: Evidence from a Case Study in Mainland China," *SN Social Sciences* 1, no. 8 (August 27, 2021): 219, <https://doi.org/10.1007/s43545-021-00223-5>.

¹⁵ Randall S. Davies, "Understanding Technology Literacy: A Framework for Evaluating Educational Technology Integration," *TechTrends* 55, no. 5 (September 11, 2011): 45–52, <https://doi.org/10.1007/s11528-011-0527-3>.

¹⁶ Davies, "Understanding Technology Literacy: A Framework for Evaluating Educational Technology Integration."

¹⁷ Cory Hansen, "Integrating Technology in Early Childhood Literacy Education," in *Society for Information Technology & Teacher Education International Conference* (Association for the Advancement of Computing in Education (AACE), 2003), 3277–80.

context, to accomplish the set learning tasks.¹⁸ Technologically literate people can use technology to organise, communicate, research, and solve problems in different contexts.¹⁹ A teacher's ability to use technology in the classroom for instruction purposes is termed technological pedagogical content knowledge (TPACK).²⁰ In relation to the TPACK approach, this study sought to equip teachers with the TPACK approach of teaching English First Additional Language to intermediate-phase (grades 4–6) learners.

LITERATURE REVIEW

Globally, integrating technology into education has been recognised as a means of enhancing teaching and learning. Various challenges are faced by rural schools in South Africa which include a lack of resources, limited infrastructure, inadequate teacher training, and socioeconomic factors. The integration of technology in teaching EFAL in these contexts can be transformative, yet complex. This section will focus on teachers' perceptions, challenges, and strategies that can be used to include technology in teaching and learner EFAL in rural schools.

The Integration of Technology in Teaching English as First Additional language

The most challenging element in EFAL teaching in South Africa is the fact that many learners struggle with the shift from mother-tongue instruction in grades 1–3, to English as the Language of Learning and Teaching (LoLT) in Grade 4.²¹ The integration of technology in teaching English has had a considerable impact in other countries as specified by Gunuç and Babacan, who specify the need for all education stakeholders to support the integration process, for effective planning and cooperation.²² It is for this reason that the researchers collaborated with teachers, learners, principals, circuit managers, and the school governing bodies (SGBs) on the integration of technology in the teaching of EFAL. With the study being conducted in a rural village in Limpopo, it became evident that some stakeholders did not know how to use technological devices for educational purposes. Due to the high levels of technology illiteracy, the researchers took it upon themselves to provide training to learners and teachers for effective implementation.

To investigate and address the importance of integrating technology in the teaching and learning of English, the researchers deemed this to include listening, speaking, reading, and writing. A study by Gunuc confirms that the integration of technology in a classroom increases participation, makes the lesson more fun and interesting, makes language use more effective, and renders learners more interested in learning a foreign language.²³ As Ranganath et al. state, the new role of English teachers who seek to bring ICTs into the teaching of their subject requires them to make EFAL learning authentic, exciting, thought-provoking, and enjoyable, rather than demanding.²⁴

Lack of Infrastructure

Technological resources should be stored in a security-secured environment. However, in most rural schools of Limpopo province, there is inadequate infrastructure, no electricity, no internet connectivity, and there are no computers for teachers to plan the lessons. Nkula and Krauss showed an imbalance between rural and urban schools in most rural areas. They indicated that in most urban schools there is the availability of infrastructure and the integration of technology is simple while some rural schools have no electricity.²⁵

¹⁸ Davies, "Understanding Technology Literacy: A Framework for Evaluating Educational Technology Integration."

¹⁹ Michael B Eisenberg and Doug Johnson, "Learning and Teaching Information Technology--Computer Skills in Context. ERIC Digest.," 2002.

²⁰ Matthew Koehler and Punya Mishra, "What Is Technological Pedagogical Content Knowledge (TPACK)?," *Contemporary Issues in Technology and Teacher Education* 9, no. 1 (2009): 60–70.

²¹ Elizabeth J. Pretorius and Nic Spaul, "Exploring Relationships between Oral Reading Fluency and Reading Comprehension amongst English Second Language Readers in South Africa," *Reading and Writing* 29, no. 7 (September 22, 2016): 1449–71, <https://doi.org/10.1007/s11145-016-9645-9>.

²² Selim Gunuç and Nuri Babacan, "Technology Integration in English Language Teaching and Learning," *Positioning English for Specific Purposes in an English Language Teaching Context* 1 (2018).

²³ S Gunuc, "Student Engagement at Universities," *Ankara: Nobel*, 2016.

²⁴ V C Ranganath, D Rayappa, and K Priscilla, "New Roles of English Teacher with ICT in Teaching and Learning of English," 2017.

²⁵ K. Nkula and K. Krauss, "Bridging the Digital Divide: Challenges in Rural South African Schools," *Computers & Education*, 2019.

Limited Teacher Training and Professional Development

Studies show that some teachers do not have the necessary skills to use technology for teaching. Mugume and Nalumansi found that teachers who received professional development in digital literacy were more confident and effective in integrating technology into their teaching.²⁶ West and Malatji suggested that student teachers at the university should be trained in the integration of technology in teaching before they graduate.²⁷

Socioeconomic Factors

Most South African schools are faced with various socioeconomic factors that affect teaching and learning. Many schools are in deep rural communities and are faced with poverty, unemployment, and lack of access to basic services, which can affect both the availability and sustainability of technological resources in schools. Mpungose found that some students lack access to technology at home, limiting their ability to practice digital literacy skills outside of school hours.²⁸

Parental Involvement

West and Malatji point out that parental intervention plays a vital role in improving learners' participation in the classroom. If parents and teachers can collaborate and suggest possible strategies on how they can enhance technology in teaching and learning.²⁹ Mpungose suggests that community centers can provide after-school access to computers and the Internet, and parents can be involved in supporting technology use at home.³⁰

THEORETICAL FRAMEWORK

Technology integration has become increasingly important in the modern educational environment, for improving teaching and learning experiences. Mishra and Koehler's TPACK framework provides a thorough foundation for understanding how teachers use technology to improve their pedagogies.³¹ The TPACK theory was used in this study to examine how South African primary school teachers in rural areas of Limpopo integrated technology into the teaching of EFAL in schools.

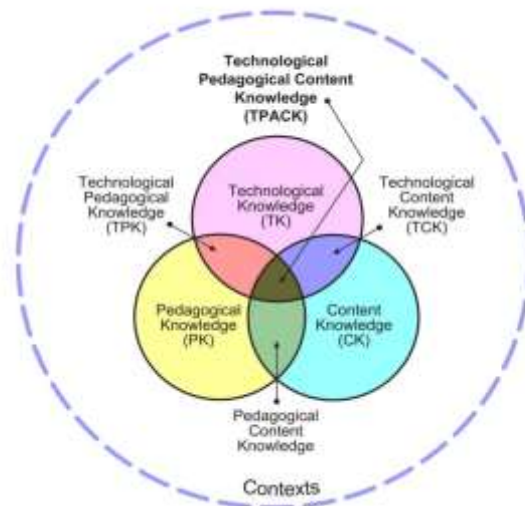


Figure 1: TPACK Framework³²

²⁶ T. Mugume and J. Nalumansi, "Professional Development and Digital Literacy in Sub-Saharan Africa: A Case Study," *International Journal of Educational Technology*, 2021.

²⁷ Joyce West and Makwalet Johanna Malatji, "Technology Integration in Higher Education: The Use of Website Design Pedagogy to Promote Quality Teaching and Learning," *Electronic Journal of E-Learning* 19, no. 6 (December 30, 2021): pp629-641, <https://doi.org/10.34190/ejel.19.6.2557>.

²⁸ C. Mpungose, "Digital Divide in Rural South African Schools: An Empirical Study," *South African Journal of Education*, 2020.

²⁹ West and Malatji, "Technology Integration in Higher Education: The Use of Website Design Pedagogy to Promote Quality Teaching and Learning."

³⁰ Mpungose, "Digital Divide in Rural South African Schools: An Empirical Study."

³¹ Koehler and Mishra, "What Is Technological Pedagogical Content Knowledge (TPACK)?"

³² Punya Mishra and Matthew J Koehler, "Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge," *Teachers College Record* 108, no. 6 (2006): 1017-54; Koehler and Mishra, "What Is Technological Pedagogical Content Knowledge (TPACK)?"

The TPACK Framework

The three theoretical lenses – technological knowledge (TK), pedagogical knowledge (PK) and content knowledge (CK) – are combined to form the theoretical framework known as TPACK. As the framework developers Rathore and Sonawat indicate a thorough comprehension and seamless integration of various knowledge domains are necessary for the efficient integration of technology in teaching.³³

EFAL Teachers' Experiences in Rural South African Primary Schools

Technological Knowledge (TK)

Technological knowledge encompasses knowledge of the digital tools available, how they are used, and which ones are most appropriate for the lesson.³⁴ As Renzulli et al. highlight, in a lesson, learners may need to label a diagram and present it to their fellow learners, thus the ability to fill in the blanks with an answer key, find images from the internet, create slides, etc., is important.³⁵

Most South African rural primary schools face challenges related to inadequate technological infrastructure, limited access to devices, a lack of electricity, theft, and a lack of technical support.³⁶ The study of Tigere and Netshitangani reports that teachers have little knowledge of the use of diverse technologies for educational purposes.³⁷ Researchers also suggest that there should be an integration of technology in institutions of higher learning when training student teachers.³⁸ The introduction of training student teachers on the integration of technology in learning will equip the students with the skills to teach in the 21st classroom. Due to limited experience and training, teachers may find it difficult to comprehend and efficiently use technology in their classrooms. In many instances, outdated or malfunctioning equipment can hinder the successful integration of technology in schools.

Pedagogical Knowledge (PK)

Teachers in rural South African primary schools may face difficulties in aligning technology with appropriate pedagogical practices. The study by Rizki et al. found that teachers can already operate digital devices such as cell phones.³⁹ The effective incorporation of technology into teaching English requires the ability to design engaging lessons, create interactive learning opportunities, and cater to diverse learning styles. However, it might be a challenge for teachers to adapt traditional teaching methods and integrate technology effectively. West and Malatji suggest that teachers should be trained on how to do so.⁴⁰

Content Knowledge (CK)

For the effective integration of technology, teachers need to comprehend the specific linguistic, grammatical, and literacy elements of the subject, if they are to design technology-infused activities that enhance English learning. Not all devices will be conducive for learners, thus teachers should select appropriate digital resources and align them with the stated curriculum objectives.

According to the TPACK theory, integrating technology into teaching necessitates a harmonious combination of technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK).⁴¹ Enabling teachers to use technology effectively for improved English language

³³ Manju Kanwar Rathore and Reeta Sonawat, "Integration of Technology in Education and Its Impact on Learning of Students," *International Journal of Applied Home Science* 2, no. 7–8 (2015): 235–46.

³⁴ Joseph S Renzulli, Marcia Gentry, and Sally M Reis, "A Time and a Place for Authentic Learning 20," in *Reflections on Gifted Education* (Routledge, 2021), 285–93.

³⁵ Renzulli, Gentry, and Reis, "A Time and a Place for Authentic Learning 20."

³⁶ Michael Togara Tigere and Tshilidzi Netshitangani, "School Management Teams' Perceptions of ICT Integration in Township and Rural Secondary Schools of KwaZulu-Natal, South Africa: Infrastructure Challenges," *Gender and Behaviour* 20, no. 3 (2022): 20022–41.

³⁷ Tigere and Netshitangani, "School Management Teams' Perceptions of ICT Integration in Township and Rural Secondary Schools of KwaZulu-Natal, South Africa: Infrastructure Challenges."

³⁸ West and Malatji, "Technology Integration in Higher Education: The Use of Website Design Pedagogy to Promote Quality Teaching and Learning."

³⁹ Mohammad Tri Rizki, Kustiono Kustiono, and Yuli Utanto, "Parent Assistance in the Use of Gadgets for Early Childhood Learning Process," *Innovative Journal of Curriculum and Educational Technology* 10, no. 2 (2021): 132–39.

⁴⁰ West and Malatji, "Technology Integration in Higher Education: The Use of Website Design Pedagogy to Promote Quality Teaching and Learning."

⁴¹ Koehler and Mishra, "What Is Technological Pedagogical Content Knowledge (TPACK)?"

instruction in rural primary schools requires them to address issues such as limited technical access, sufficient training, and the ability to coordinate digital resources with the curriculum. The Department of Basic Education (DBE) can create the conditions for rural primary schools to offer learners an effective and technologically enhanced education, by working together with policymakers, educators, and other stakeholders.

METHODOLOGY

The study followed a qualitative research approach with an interpretivist paradigm which sought to understand a subjective human experience or a phenomenon of interest, through the minds and eyes of the study participants.⁴² This approach sought to understand and articulate the research participants' thoughts, and how they construct and interpret a phenomenon, or attribute meaning to a context. In this sense, the researchers sought to understand the viewpoints of the participants, rather than their own by allowing them to share their knowledge of, and experiences with, technology integration in teaching English in selected rural primary schools in the Limpopo province of South Africa. A case study design was used, as it enabled the researchers to conduct a contextual analysis of the research problem and study the subjects in their natural settings, to arrive at a detailed, in-depth, and holistic understanding of the case. In this context, the study explored teachers' experiences in rural primary schools, by interviewing them to gain a first-hand, in-depth understanding of how they integrated technology into their English lessons. Participants were sampled from five primary schools in the Mogodumo Circuit of Limpopo province. Eleven participants were conveniently selected from 42 teachers who attended a workshop on technology integration in May 2021. The selection was convenient, since only teachers who had participated in the previous training workshops in 2020, were chosen to provide information about their understanding, knowledge, experiences, and perspectives on technology integration in teaching EFAL in their schools. Semi-structured interviews were used to collect data from 11 teachers in schools A, B, C, D and E. The interview questions about the integration of technology in teaching EFAL were open-ended.

Table 1: Biographical information of participants

Gender	Age group	School code	Participant code
F	30–40	A	TA1
F	40–50	A	TA2
M	40–50	B	TB3
M	30–40	B	TB4
M	20–30	C	TC5
F	30–40	C	TC1
F	40–50	C	TC2
F	40–50	D	TD3
F	40–50	D	TD4
M	40–50	E	TE5
M	30–40	E	TE6
Total participants: 11			

PRESENTATION OF FINDINGS AND DISCUSSION

From the analysis of the data, the following five themes were identified: digital devices used for teaching; the use of Microsoft PowerPoint for lesson presentations; the use of email accounts; activities taught using technology; and virtual teaching modes. Each theme is briefly discussed below.

⁴² Egon G Guba and Yvonna S Lincoln, *Fourth Generation Evaluation* (Sage, 1989); Charles Kivunja and Ahmed Bawa Kuyini, "Understanding and Applying Research Paradigms in Educational Contexts," *International Journal of Higher Education* 6, no. 5 (September 5, 2017): 26, <https://doi.org/10.5430/ijhe.v6n5p26>.

Presentation of Themes

The study's main theme and its sub-themes are discussed below. Although direct statements are commonly used, the researchers summarised the data and presented it under the findings.

a. Digital devices used for teaching

Most participants reported having had positive experiences with using digital devices, particularly projectors, laptops, whiteboards and smartphones. These enabled them to show learners images that they obtained from the internet and YouTube. According to them, these enhanced teaching and learning as they fascinated learners, cultivated their interest in learning, and improved participation, as also emphasised by Brantley-Dias and Ertmer in their study using the TPACK model.⁴³ The participants reported that in some schools, principals and parents cooperated and supported teachers when they requested learners to bring cell phones to school for certain lessons. However, several participants were not in favour of learners bringing cell phones to school, as these disrupt lessons. Some participants admitted that cell phones enable teachers to send learners schoolwork to do at home, via WhatsApp. Most of the participating teachers identified a lack of technological equipment, resources, and knowledge of using those technologies as key obstacles to technology integration, in confirmation of the findings of a study by Gaotlhobogwe.⁴⁴ When asked to mention what devices they used for teaching, TA1 stated:

I have been using a projector, laptop, and whiteboard. I prefer them because they work hand in hand, they make the lessons very lively and interesting to learners and help teachers to impart knowledge effectively.

A teacher participant from School B registered her preference as follows:

I prefer the smartphone because I can use it at home during my spare time, with my own data bundle. It is easy to use because I am familiar with it, and I can show learners videos. (TB3)

One teacher from School A had this to say:

These gadgets are very useful and effective since they facilitate teaching and make learning fun and interesting for learners. Since I started using them in class, I have observed that pictures, animations, and video clips arouse the learners' interest to learn and know more about a topic presented, and they sustain their motivation throughout the lesson. (TB4)

Confirming the importance of integrating technology into teaching, one teacher stated:

When my lesson plan requires, I connect my laptop to the projector, and it is easy because we can connect and go to YouTube. Oh, learners love it. They love the fact that they can see what you are teaching and relate to what they see on the screen. Without a doubt, the use of technology increases the learners' interest, understanding, and participation in class. (TB2)

Harking back to the use of cell phones for teaching, Teacher 3 from School D shared:

My learners sometimes bring cell phones to school whenever the principal permits us because cell phones are not allowed here. When I need them to come with cell phones, I ask their parents as well. In that way, when I work on the laptop, my learners use their cell phones to do a task I have given. We also have a WhatsApp group where I send learners some work to do when they are at home, and they send it back to me for comments. In a way, this increases interaction between learners and me beyond the school day and encourages parents to participate in their children's education. (TD7)

⁴³ Laurie Brantley-Dias and Peggy A. Ertmer, "Goldilocks and TPACK," *Journal of Research on Technology in Education* 46, no. 2 (December 2013): 103–28, <https://doi.org/10.1080/15391523.2013.10782615>.

⁴⁴ Michael Gaotlhobogwe, "The Impact of Lack of Resources on Declining Students' Enrolments in Design and Technology in Botswana Junior Secondary Schools," *Design and Technology Education: An International Journal* 17, no. 1 (2012): 10–17.

Expressing frustration with a lack of equipment, one teacher participant remarked:

I can prepare a lesson, but the problem is that there are no gadgets to use at school. Though I have my computer, I cannot use it to record what I have written and to project pictures for learners. It is frustrating because I cannot even operate my cell phone. (TE10)

Contrary to most participants, TC5 and TB4 noted that the use of cell phones for teaching and learning disrupted classroom activities:

I will never allow my learners to bring cell phones to my class. The school must provide us with laptops so that we can control what learners have access to. There was a case where one of my learners brought a phone to school simply to show other learners how to rob a bank. I really don't like the use of cell phones for teaching and learning.

In the above quotations, teachers enunciated the benefits of integrating technology into their lessons, which included the fact that it motivated learners to learn, since it is interactive, inviting, and whetted their curiosity to discover new things. Technology also exposed learners to vast knowledge using different platforms.⁴⁵ Technological devices allowed teachers to work during their spare time to search for interesting videos which would enable learners to see pictures and increase their class participation. Some schools allowed learners to bring cell phones to school for learning, which in turn, enabled them to do homework through WhatsApp group activities. However, not all participants agreed to the use of cell phones, as learners have access to applications that are unsuited for their age. This is confirmed by Ali et al., who state that cell phones are a distraction to both the user and the person sitting next to him/her in class.⁴⁶ Thus, teachers should be able to apply the TPACK model, especially the TPC lens, to create an atmosphere that allows interaction between themselves and learners, the sharing of knowledge within the network, instant submission of written work and timely feedback – all of which encourage social networking. This will develop learners' consciousness and active participation in the evolving technological world and bring about authentic learning.⁴⁷ Despite this, some teachers shared their frustrations and challenges in integrating technology into lessons, largely due to a lack of technological devices and knowledge on how to use them. This greatly deprived them and their learners of the benefits of mastering a range of technologies for educational purposes.

b. The use of Microsoft PowerPoint for lesson presentations

Most of the participants who reported knowing how to use technological devices indicated that they were competent in using Microsoft PowerPoint (PP) to present lessons in the classroom. The participants who used PP for teaching stated that it is accessible and user-friendly, as it enables teachers to prepare their lessons efficiently, and edit and add different icons that can enhance teaching and learning. The theoretical lens of the TPACK model, TK, shows that knowledge of how to use technology can be easily gained and expanded when understood by both learners and teachers.⁴⁸ As Renzulli et al. state, the use of technology for educational purposes improves the authentic learning process.⁴⁹ Most participants said that PP presentations enable learners to see and experience what is taught, as the learning content is displayed on a whiteboard. In contrast, some teachers reported that they found PP presentations to be a waste of time, particularly the preparation aspect, and having to set up electronic devices for the presentation. Many participants admitted to not knowing how to use PP to encourage learner participation in class. Some said they did not use PP due to a lack of knowledge, while others identified a lack of equipment as a major drawback. Here is what they had to say:

⁴⁵ Brantley-Dias and Ertmer, "Goldilocks and TPACK."

⁴⁶ Azad I Ali, Michele R Papakie, and Theresa McDevitt, "Dealing with the Distractions of Cell Phone Misuse/Use in the Classroom-a Case Example," in *Competition Forum*, vol. 10 (American Society for Competitiveness, 2012), 220.

⁴⁷ Jan Herrington, Thomas C Reeves, and Ron Oliver, *Authentic Learning Environments* (Springer, 2014).

⁴⁸ Charles R. Graham, "Theoretical Considerations for Understanding Technological Pedagogical Content Knowledge (TPACK)," *Computers & Education* 57, no. 3 (November 2011): 1953–60, <https://doi.org/10.1016/j.compedu.2011.04.010>.

⁴⁹ Renzulli, Gentry, and Reis, "A Time and a Place for Authentic Learning 20."

I use PowerPoint presentations because [PP] is more accessible and not that difficult to use. It displays the lesson on the whiteboard, which makes it much easier for learners to see it and learn more effectively and meaningfully. (TC5)

By contrast, another teacher highlighted the drawbacks of PP as follows:

We are under pressure to cover the curriculum content in all its breadth and depth within a stipulated time. Due to this pressure, I feel that PowerPoint presentation takes a lot of time, particularly in lesson preparation and delivery. (TD7)

Moreover, TA2 stated that:

I understand that it is important that we use technology in our classroom, but I prefer to use the old method of [a] learner-centered approach. In that way, I can be able to see if all learners understood the lesson, and I can support those who need extra attention.

Some teachers reported that they did not use PP presentations as they were unfamiliar with the programme, while others blamed a lack of equipment. This confirmed the findings of a study by Tezci, who indicated that teachers' attitudes varied with their years of experience, age, and – pertinent to the findings of the current study – levels of knowledge.⁵⁰ Teachers who have been teaching for many years and have been in the system for a long time, tend to be less interested in using technology. In the current study, participants aged 50 and over expressed a negative attitude toward the notion of implementing technology in their teaching practice. Participants who lacked equipment and technological knowledge admitted to still using chalk and blackboards, with others resorting to teacher-centered ways of teaching and transferring knowledge to learners as those methods were more expedient and less time-consuming, in their view. The implication is that the complexity of digital technologies poses additional difficulties for teachers who have not been trained to incorporate technology into their lessons.⁵¹

Some participants indicated that they enjoyed making use of technology, as their presentation could be stored electronically, used later, and updated easily when the need arose. Since PP slides are displayed on the whiteboard, if colour is used, it attracts and retains learners' attention. Those adopters of technology also reported that it is easy to download pictures, cartoons, animations and videos from the internet and YouTube, to facilitate learning and clarify concepts for learners.

Some participants noted that preparing PP presentations was complex and time-consuming, hence they did not use it regularly, given that they were under immense pressure to complete the syllabus on time. In this sense, teachers' heavy workload seems to be a barrier to the integration of technology, as preparing such presentations requires both time and skill.

c. The use of Gmail accounts as an integration strategy

In response to the question about when the participants made use of technology, most of them stated that they used email to communicate with parents and learners about EFAL learning. They reported having been assisted by their colleagues to create their own Gmail accounts, which enabled them to share information with their colleagues, teachers from other schools and learners, and facilitated correspondence with their principals and external agencies for both professional and private purposes. Some admitted that their email accounts were not primarily used to engage with their learners on subject-related matters, but rather to communicate amongst themselves as teachers and with colleagues from other schools. In their view, using emails to share information and exchange knowledge increased and cemented their technology literacy. However, some participants indicated that they seldom used emails since data was costly, while others shared that they had never used emails.

The participants provided the following observations regarding this subject:

I use Gmail to communicate and share information with my colleagues because I am not on WhatsApp. In that sense, I use it for professional reasons to augment my teaching. (TA1)

⁵⁰ Erdoğan Tezci, "Attitudes and Knowledge Level of Teachers in ICT Use: The Case of Turkish Teachers," *Journal of Human Sciences* 7, no. 2 (2010): 19–44.

⁵¹ Koehler and Mishra, "What Is Technological Pedagogical Content Knowledge (TPACK)?"

Surprisingly, one teacher participant disclosed that she did not have an email account and was excluded when her colleagues shared information amongst the members of their professional network:

To be honest, I have never used an email and I don't know how to create it. Maybe having it would help me to present a lesson better in class. Frankly, I haven't felt the pressure to have it, as this is a personal matter, and it has to do with individual preference. (TC5)

However, one participating teacher who made use of the email facility, expressed its benefit as follows:

I have my own Gmail account and I have helped some of my colleagues to create their email accounts. I find it convenient because when the principal receives some valuable information, he forwards it to me and others, which makes communication faster and our work more efficient. (TD8)

In a follow-up question to link the use of emails to facilitate communication between the learners and their teacher, most participants confessed that they had never thought about it. One participant expressed reservations:

I don't think it will be easy for learners to use an email. It will disrupt them from reading their books. They will expect teachers to be sending the information without finding information in different books like we used to teach them. (TB3)

The findings reflected above, indicate that sending and receiving emails enabled some participants to network, and share information and knowledge with colleagues. Teachers from other schools and external agencies were able to share information on common professional issues, particularly around technology integration. This forged a community of practice and a professional learning community among the participating teachers. As Kabilan and Embi state, in the education sector, email has cemented its importance, as well as its status, as the overarching internet tool for collaboration, the sharing of ideas, and alerting interested parties to educational workshops.⁵² In this community, colleagues collaborate and assist one another to improve their competencies, professional knowledge, and ultimately their learners' learning. Almashham discovered that employing email as a teaching tool improved learners' language proficiency and improved their learning both in and outside of the classroom. In particular, their writing skills were honed due to their interaction with native speakers.⁵³ One of the participants confirmed the need for internet connectivity, to access emails. Admittedly, data is costly and not everyone can afford it.⁵⁴ In addition, Koehler and Mishra attest that the use of emails does not offer the immediate interaction that face-to-face communication does, where learners receive immediate feedback.⁵⁵ This time delay does not benefit the learning process.

d. Language skills and topics taught through technology

Some participants reported teaching certain language skills and topics, using technology. Most said they employed technology to teach listening, speaking, reading, viewing, verbs, nouns, letters of the alphabet, and punctuation. Some participants revealed that, due to a lack of readers and textbooks they used data projectors to display the reading texts on whiteboards, to share with the whole class, and PP presentations to teach verbs, tenses, nouns, adjectives, adverbs, composition and poetry, among others. The following comments are illustrative:

We normally teach listening and speaking activities. However, the challenge is that there are few reading books, and they do not cater to all learners. So, to alleviate this problem, I take pictures from the book and display them on the projector for the whole class. (TD7)

⁵² Muhammad Kamarul Kabilan and Mohamed Amin Embi, "English Language Teachers' Professional Uses of Email," *Teacher Development* 10, no. 1 (March 22, 2006): 87–103, <https://doi.org/10.1080/13664530600587238>.

⁵³ Amal Abdullah Ali Almashham, "Using Email in Second Language Learning and Teaching," *مجلة العلوم الإنسانية والاجتماعية* 2, no. 9 (December 30, 2018), <https://doi.org/10.26389/AJSRP.A141118>.

⁵⁴ John Lai and Nicole O. Widmar, "Revisiting the Digital Divide in the <scp>COVID</Scp> -19 Era," *Applied Economic Perspectives and Policy* 43, no. 1 (March 12, 2021): 458–64, <https://doi.org/10.1002/aep.13104>.

⁵⁵ Koehler and Mishra, "What Is Technological Pedagogical Content Knowledge (TPACK)?"

Reading and viewing are two things that we present on the projector. I use PowerPoint presentations to teach verbs and nouns, and I find this very useful because it allows me to use images, animations, and other visuals that facilitate teaching and learning. The visuals encourage more participation and discussion in class. (TA2)

I use PowerPoint for teaching the letters of the alphabet and punctuation marks in English lessons. The visual display assists learners in identifying capital letters and small letters, and how to punctuate correctly and write meaningful sentences. (TA1)

I use technology for teaching writing, paragraphs, dialogues, the past, present, and future tenses, and drafting conversations and poems. It is effective because it makes lessons lively, as the PowerPoint presentations are interactive and conversational. (TC5)

I have never used any technological devices or social media platforms to teach EFAL before, because we don't have such resources at my school. This puts our learners at a serious disadvantage compared to those in other schools that have them. This is an urgent need that the school management should address, to improve the standard of teaching English and learning in my school. (TC6)

Listening and speaking activities are interactive and should be taught in environments that encourage verbal communication, free from anxieties and fear. As the findings indicated, the participants who integrated technology in teaching these skills, strengthened learners' interaction and self-efficacy to express themselves in EFAL classrooms. This aligns with the TPACK theory, which states that the PCK should be authentic and increase participation in the classroom.⁵⁶ For instance, using podcasts featuring digital audio and video caters to all learners with different abilities. Angelia and Simanjuntak found that these teaching practices engaged learners to complete their learning objectives in an Indonesian secondary school, as the teacher participants in that study reported being able to introduce listening skills to the class.⁵⁷

e. Virtual Teaching Mode

Virtual teaching plays a critical role in times of upheaval (e.g., pandemics) when it is impossible to conduct face-to-face teaching. This was the case during the recent lockdowns, imposed in many countries around the world in 2020 and 2021, in a bid to contain the spread of the Coronavirus (COVID-19). Some of the commonly used video conferencing platforms that the teacher participants in this study used for teaching EFAL, included Zoom, Google Meet, Skype and Microsoft Teams. When asked to share their experiences with virtual teaching, one participant revealed:

There was a time when I was sick due to Covid-19 and couldn't come to school. Luckily, I had a laptop with me, and I called the admin lady to organise my learners and ensure that the internet was connected so that I could teach them remotely. Since learners were at school, I was able to teach and communicate with them properly via Zoom. I tried hard to cover the syllabus as adequately as possible because it was towards of the term when schools closed. So, I was quite scared that we might fall behind in terms of content. (TB3)

A few participants noted that, in the absence of face-to-face teaching and learning, they requested the school administrator to connect the learners via WhatsApp, so that they were able to engage in virtual teaching, thereby ensuring that no learners would be left behind.

As the findings indicated, however, most participants did not know how to use any virtual teaching platform during COVID-19. One participant outlined her challenges when using online teaching platforms, stating:

⁵⁶ Rizki, Kustiono, and Utanto, "Parent Assistance in the Use of Gadgets for Early Childhood Learning Process."

⁵⁷ Intan Angelia Sihombing and Debora Chaterin Simanjuntak, "The Use Of Digital Audio In Enhancing Efl Learners'listening Proficiency," *JETAL: Journal of English Teaching & Applied Linguistic* 4, no. 2 (2023): 64-74.

I wish I could, but I don't know how to do it. The challenge is that the training that we receive on virtual teaching is not enough to enable us to acquire the firm knowledge and skills needed for using technology competently in teaching. Another challenge is that connecting the devices is not easy for me. (TB4)

Arguably, the participant did not learn much in the training s/he attended on the integration of technology in teaching, as online connections were difficult to establish – this aligns with the findings of a study by Norström.⁵⁸ Some participants reported dealing with unforeseen factors:

I have a problem with the Internet connection. In some classes, the Wi-Fi is not working while in others it is limited and unstable. Sometimes you prepare for a lesson, and there is no electricity due to load shedding. This disrupts your plans, sets you back, and affects the lesson planned for the day. (TC6)

From the participants' responses, it transpired that the Wi-Fi routers were in the office administration blocks in all the schools. Some classrooms were situated far from them, which rendered the internet connection weak and incapable of covering all the necessary areas. Another challenge that affected the use of technology in teaching was recurring power outages and load shedding. Some participants reported that many learners came from disadvantaged backgrounds, and did not own even the basic resources or gadgets that could support their learning:

The challenge is that we are working with learners from disadvantaged backgrounds, who have no smartphones. Most parents are unemployed, and those who have smartphones don't have data to access the internet, because it is very expensive. (TE11)

The study found that teachers had difficulty conducting virtual classes, as most of the learners did not have digital devices (e.g., smartphones, tablets) and/or reliable internet connection. Moreover, of all EFAL teachers who participated in the study, only one was able to conduct virtual teaching in a meaningful way. The study by Palloff and Pratt found that universities and higher education institutions were working on finding solutions to overcome the shortage of digital resources and inadequate budgets for teaching online.⁵⁹ However, it was also found that primary and high schools in rural areas are still battling to afford technological devices for educators, to prepare them for the 21st-century classroom.⁶⁰

Discussion Summary

In this study, the researchers explored how the use of technology could promote quality teaching and learning of EFAL in rural schools of Limpopo. To that end, the participating teachers were tasked to share their expertise on the use of technology for teaching and learning in their own contexts. Most teacher participants confirmed that they lacked the necessary skills to use diverse technologies in the classroom, and as some clarified, the use of technology for communicating with colleagues was more effective than using it for teaching and learning purposes. Several participants expressed the need for training on how to integrate technology into their lessons. It also became clear that most learners have smartphones and can use that specific technology for social interaction. A recommendation is that teachers send learners homework and assignments that require the use of that technology, via a platform such as WhatsApp.

Another key finding was that the use of technology for teaching EFAL can promote quality teaching and learning and could even improve authentic learning. Using devices such as smartphones will allow learners to share their knowledge with their peers and their teacher and permit them to engage with content at their own time and in their own space. Moreover, it was also found that the

⁵⁸ Per Norström, "How Technology Teachers Understand Technological Knowledge," *International Journal of Technology and Design Education* 24, no. 1 (February 19, 2014): 19–38, <https://doi.org/10.1007/s10798-013-9243-y>.

⁵⁹ Rena M Palloff and Keith Pratt, "Lessons from the Virtual Classroom," *International Journal of Information and Communication Technology Education* 10, no. 2 (2013): 93–96.

⁶⁰ Allan Collins and Richard Halverson, *Rethinking Education in the Age of Technology: The Digital Revolution and Schooling in America* (Teachers College Press, 2018).

integration of the TPACK model on the use of technology, to teach EFAL, prepared teachers to teach in the 21st-century classroom.

RECOMMENDATIONS

The researchers wish to make some recommendations for further research into the use of technology to teach EFAL in remote locations, as a means of significantly increasing the responsiveness to this study. The research results and the literature review served as the foundation for the suggestions that followed. The South African Department of Basic Education (DBE), policymakers, educators, parents, and other interested parties might benefit from these proposals.

- Teachers' levels of technology literacy differ markedly, and there is an urgent need to support those who lack (or have limited) knowledge, to improve their technology-related skills and professional efficacy.
- Higher education institutions and other stakeholders in the sector should strengthen technological support to schools, to ensure the effective teaching of EFAL and other subjects.
- The DBE should progressively provide the relevant technological infrastructure and support to schools, to ensure that teachers keep up to date with emerging technological trends and developments.
- Principals should initiate or support the establishment of professional learning communities or communities of practice in schools around technology integration, to expand teachers' technological knowledge and communities of practice.
- Teachers should be encouraged to join professional social networks such as LinkedIn, Facebook, Twitter, Better Lesson, Canvas Commons, Classroom 2.0, etc. to learn how to use technology effectively in their classroom.

CONCLUSION

It can be concluded from the study that the integration of technology in rural schools of Limpopo presents both significant challenges and promising opportunities for both teachers and learners. Teachers were found to be facing numerous challenges such as limited resources, inadequate training, and poor infrastructure. However, teachers showed interest in integrating technology into the teaching of EFAL. Thus, it can be concluded that there is an urgent need for intervention strategies that provide equitable access to technology, comprehensive training, and ongoing support. It was also concluded in the study that by investing in digital infrastructure and professional development, education stakeholders can empower teachers to enhance their pedagogical practices and engage students more effectively. This approach will foster more inclusive, dynamic, authentic learning and learners that are ready for the 21st century.

Ultimately, researchers must build on capacitating teachers to recognize and address the challenges that they are faced with when integrating technology in teaching EFAL. It is also important that all learners have the opportunity to benefit from the powerful potential of technology in learning EFAL and beyond. The present study, offered hope and strategies that could be used by both learners and teachers to make EFAL fun and interesting.

BIBLIOGRAPHY

- Amal Abdullah Ali Almarshham. "Using Email in Second Language Learning and Teaching." *مجلة العلوم الإنسانية و الإجتماعية* 2, no. 9 (December 30, 2018). <https://doi.org/10.26389/AJSRP.A141118>.
- Ali, Azad I, Michele R Papakie, and Theresa McDevitt. "Dealing with the Distractions of Cell Phone Misuse/Use in the Classroom-a Case Example." In *Competition Forum*, 10:220. American Society for Competitiveness, 2012.
- Archer, M. *Realist Social Theory: The Morphogenetic Approach*. Cambridge University Press, 1995.
- Brantley-Dias, Laurie, and Peggy A. Ertmer. "Goldilocks and TPACK." *Journal of Research on Technology in Education* 46, no. 2 (December 2013): 103–28. <https://doi.org/10.1080/15391523.2013.10782615>.
- Collins, Allan, and Richard Halverson. *Rethinking Education in the Age of Technology: The Digital*

Revolution and Schooling in America. Teachers College Press, 2018.

- Davies, Randall S. "Understanding Technology Literacy: A Framework for Evaluating Educational Technology Integration." *TechTrends* 55, no. 5 (September 11, 2011): 45–52. <https://doi.org/10.1007/s11528-011-0527-3>.
- Eisenberg, Michael B, and Doug Johnson. "Learning and Teaching Information Technology--Computer Skills in Context. ERIC Digest,." 2002.
- Ejikeme, Anthonia N., and Helen N. Okpala. "Promoting Children's Learning through Technology Literacy: Challenges to School Librarians in the 21st Century." *Education and Information Technologies* 22, no. 3 (May 1, 2017): 1163–77. <https://doi.org/10.1007/s10639-016-9481-1>.
- Gaotlhobogwe, Michael. "The Impact of Lack of Resources on Declining Students' Enrolments in Design and Technology in Botswana Junior Secondary Schools." *Design and Technology Education: An International Journal* 17, no. 1 (2012): 10–17.
- Gladilina, Irina Petrovna, Lyudmila Nikolaevna Pankova, Svetlana Alexandrovna Sergeeva, Vladimir Kolesnik, and Alexey Vorontsov. "Use of Information and Computer-Based Distance Learning Technologies during COVID-19 Active Restrictions." *International Journal of Advanced Computer Science and Applications* 13, no. 6 (2022). <https://doi.org/10.14569/IJACSA.2022.0130688>.
- Graham, Charles R. "Theoretical Considerations for Understanding Technological Pedagogical Content Knowledge (TPACK)." *Computers & Education* 57, no. 3 (November 2011): 1953–60. <https://doi.org/10.1016/j.compedu.2011.04.010>.
- Guba, Egon G, and Yvonna S Lincoln. *Fourth Generation Evaluation*. Sage, 1989.
- Gunuc, S. "Student Engagement at Universities." *Ankara: Nobel*, 2016.
- Gunuç, Selim, and Nuri Babacan. "Technology Integration in English Language Teaching and Learning." *Positioning English for Specific Purposes in an English Language Teaching Context* 1 (2018).
- Hansen, Cory. "Integrating Technology in Early Childhood Literacy Education." In *Society for Information Technology & Teacher Education International Conference*, 3277–80. Association for the Advancement of Computing in Education (AACE), 2003.
- Herrington, Jan, Thomas C Reeves, and Ron Oliver. *Authentic Learning Environments*. Springer, 2014.
- Howie, S, N McLeod Palane, K Roux, C Combrinck, and M Tshele. "Changes and Development in Schooling and Classroom Conditions PIRLS 2006-PIRLS 2016 and Its Effect on Student Reading Performance." In *ECER Conference*, 2017.
- İlter, Binnur Genç. "How Does Technology Affect Language Learning Process at an Early Age?" *Procedia - Social and Behavioral Sciences* 199 (August 2015): 311–16. <https://doi.org/10.1016/j.sbspro.2015.07.552>.
- Kabilan, Muhammad Kamarul, and Mohamed Amin Embi. "English Language Teachers' Professional Uses of Email." *Teacher Development* 10, no. 1 (March 22, 2006): 87–103. <https://doi.org/10.1080/13664530600587238>.
- Kgwete, E M, and K S Malatji. "Problem-Solving as Teaching Strategy: Promoting Active Learning in a South African University of Technology." *Gender and Behaviour* 19, no. 2 (2021): 18027–34.
- Kivunja, Charles, and Ahmed Bawa Kuyini. "Understanding and Applying Research Paradigms in Educational Contexts." *International Journal of Higher Education* 6, no. 5 (September 5, 2017): 26. <https://doi.org/10.5430/ijhe.v6n5p26>.
- Koehler, Matthew, and Punya Mishra. "What Is Technological Pedagogical Content Knowledge (TPACK)?" *Contemporary Issues in Technology and Teacher Education* 9, no.1(2009):60–70.
- Kulavuz-Onal, Derya. "Technology in Instruction." *The TESOL Encyclopedia of English Language Teaching* 1 (2018): 1–12.
- Lai, John, and Nicole O. Widmar. "Revisiting the Digital Divide in the COVID-19 Era." *Applied Economic Perspectives and Policy* 43, no. 1 (March 12, 2021): 458–64. <https://doi.org/10.1002/aep.13104>.

- Larsen-Freeman, Diane. *Techniques and Principles in Language Teaching*. Oxford University Press, 2000.
- Liang, Weijun. "University Teachers' Technology Integration in Teaching English as a Foreign Language: Evidence from a Case Study in Mainland China." *SN Social Sciences* 1, no. 8 (August 27, 2021): 219. <https://doi.org/10.1007/s43545-021-00223-5>.
- Malatji, Khashane Stephen, Patricia Nthabiseng Soundy, Gabriel Kafidze, and Moroosi Chiloane. "Integrating Technology into Teaching in Higher Education: A Response to the Fourth Industrial Revolution in a University of Technology." *Journal of Educational Studies* 21, no. 1 (2022): 107–25.
- Mishra, Punya, and Matthew J Koehler. "Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge." *Teachers College Record* 108, no. 6 (2006): 1017–54.
- Mpungose, C. "Digital Divide in Rural South African Schools: An Empirical Study." *South African Journal of Education*, 2020.
- Mtambo, Bongiwe, and Lindiwe Tshuma. "Intermediate Phase Learner Performance in English: A Quantitative Analysis." *Reading & Writing-Journal of the Reading Association of South Africa* 14, no. 1 (2023): 430.
- Mugume, T., and J. Nalumansi. "Professional Development and Digital Literacy in Sub-Saharan Africa: A Case Study." *International Journal of Educational Technology*, 2021.
- Nkula, K., and K. Krauss. "Bridging the Digital Divide: Challenges in Rural South African Schools." *Computers & Education*, 2019.
- Norström, Per. "How Technology Teachers Understand Technological Knowledge." *International Journal of Technology and Design Education* 24, no. 1 (February 19, 2014): 19–38. <https://doi.org/10.1007/s10798-013-9243-y>.
- Olivier, Joy, Nicola Harris, and Meghan Borole. "Using Technology to Improve English Literacy: The Case of 'Reading Eggs' in South Africa 2012-2021." *INTERVENTIONS*, n.d., 169.
- Palloff, Rena M, and Keith Pratt. "Lessons from the Virtual Classroom." *International Journal of Information and Communication Technology Education* 10, no. 2 (2013): 93–96.
- Pretorius, Elizabeth J., and Nic Spaull. "Exploring Relationships between Oral Reading Fluency and Reading Comprehension amongst English Second Language Readers in South Africa." *Reading and Writing* 29, no. 7 (September 22, 2016): 1449–71. <https://doi.org/10.1007/s11145-016-9645-9>.
- Ranganath, V C, D Rayappa, and K Priscilla. "New Roles of English Teacher with ICT in Teaching and Learning of English," 2017.
- Rathore, MANJU KANWAR, and REETA Sonawat. "Integration of Technology in Education and Its Impact on Learning of Students." *Internaltional Journal of Applied Home Science* 2, no. 7–8 (2015): 235–46.
- Renzulli, Joseph S, Marcia Gentry, and Sally M Reis. "A Time and a Place for Authentic Learning 20." In *Reflections on Gifted Education*, 285–93. Routledge, 2021.
- Rizki, Mohammad Tri, Kustiono Kustiono, and Yuli Utanto. "Parent Assistance in the Use of Gadgets for Early Childhood Learning Process." *Innovative Journal of Curriculum and Educational Technology* 10, no. 2 (2021): 132–39.
- Sihombing, Intan Angelia, and Debora Chaterin Simanjuntak. "The Use Of Digital Audio In Enhancing Efl Learners'listening Proficiency." *JETAL: Journal of English Teaching & Applied Linguistic* 4, no. 2 (2023): 64–74.
- Spaull, N. "From Bad to Worse: New Study Shows 81% of Grade 4 Pupils in SA Can't Read in Any Language." *Dailymaverick*, 2023. <https://www.dailymaverick.co.za/article/2023-05-16-from-bad-to-worse-new-study-shows-81-of-grade-4-pupils-in-sa-cant-read-in-any-language/>.
- Tezci, Erdoğan. "Attitudes and Knowledge Level of Teachers in ICT Use: The Case of Turkish Teachers." *Journal of Human Sciences* 7, no. 2 (2010): 19–44.
- Tigere, Michael Togara, and Tshilidzi Netshitangani. "School Management Teams' Perceptions of ICT Integration in Township and Rural Secondary Schools of KwaZulu-Natal, South Africa: Infrastructure Challenges." *Gender and Behaviour* 20, no. 3 (2022): 20022–41.
- West, Joyce, and Makwalete Johanna Malatji. "Technology Integration in Higher Education: The

Use of Website Design Pedagogy to Promote Quality Teaching and Learning.” *Electronic Journal of E-Learning* 19, no. 6 (December 30, 2021): pp629-641.
<https://doi.org/10.34190/ejel.19.6.2557>.

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