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Perceptions of English First Additional Language Teachers on In-Service Training for Integrating Digital Skills in Rural Schools

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Abstract: There is a lack of digital skills in rural primary schools in South Africa. While technology integration is widely promoted, there is a notable research gap concerning the training of in-service English First Additional Language (EFAL) teachers in rural settings. This study explored the perceptions of Intermediate Phase EFAL teachers regarding in-service training on digital skills in the rural primary schools of the Mogodumo Circuit, Limpopo. The study was grounded in an interpretivist paradigm and informed by a professional learning conceptual framework. It employed a qualitative descriptive case study approach, using semi-structured interviews to generate data. Purposive sampling was used to select ten EFAL teachers from six primary schools, comprising six males and four females. The thematic method was employed for data analysis. The study found that digital in-service training was transformative for rural EFAL teachers, enhancing their confidence and digital teaching skills despite infrastructural challenges. Teachers highlighted the value of combining traditional and digital methods, collaborative learning, and using digital tools to support inclusive education, particularly for visually impaired learners. It is concluded that teachers' perceptions provide valuable insights into the realities of rural education and can guide more effective, context-specific professional development. The study recommends further research into context-responsive digital training models and the pedagogical impact of inclusive technologies, while also calling for continuous, practical in-service training and collaborative, inclusive teaching strategies. This study contributes to the existing body of knowledge by providing a model for designing effective professional development in under-resourced rural contexts.

Keywords: English first additional language, rural, in-service training, professional development, digital skills.

1. Introduction

In-service training plays a vital role in teachers' professional development, particularly in equipping them with essential digital teaching and learning skills aligned with the Fourth Industrial Revolution (4IR). Kerkhoff and Makubuya (2022) and Anis (2024) emphasise the need to prepare English First Additional Language (EFAL) teachers to meet the educational demands of a democratic South Africa in the 21st century, including the integration of technology in education, as well as the promotion of critical thinking, collaboration, and engagement through digital learning tools. This is especially important in historically disadvantaged areas, where access to technology and digital literacy is often limited or non-existent.

This study is part of a community-funded scholarship project that began in 2018, known as Classroom Interaction Pedagogy in Teaching English First Additional Language in the Intermediate Phase. Its purpose is to support EFAL teachers in rural areas through in-service training. The project represents a collaborative effort between local communities, teachers, and academic institutions to address the linguistic and educational challenges faced by rural primary schools. By focusing on teacher support and the development of digital skills, the study aligns with the journal's interdisciplinary commitment to rural transformation, community-driven research, and the improvement of educational outcomes

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in under-resourced settings. As part of this project, several in-service training sessions have been conducted to enhance teachers' digital skills and their ability to integrate technology into their teaching practice. Osamwonyi (2016) defines in-service training as activities that help teachers already in the profession to upgrade their professional knowledge, skills, and competence. In 2022, post-COVID-19, the project conducted a three-day face-to-face training workshop in a rural circuit of Limpopo, South Africa, focusing on technology integration in EFAL teaching. Follow-ups were conducted online to consolidate what the teachers had learnt during the training. Participants included teachers from mainstream and special schools.

The three-day workshop covered:

- Day 1: Training on using technology for teaching EFAL skills—listening and speaking, reading and viewing, writing and presenting, language structures and conventions—as well as accessing interactive teaching videos and setting up classroom libraries.
- Day 2: Group presentations on teaching EFAL skills with technology, followed by immediate feedback from facilitators.
- Day 3: Strengthening teachers' understanding and alignment with 21st-century teaching practices, concluding with a certificate award ceremony.

After four months, monitoring and support were conducted in all 14 participating schools, during which teachers were observed integrating technology into their lessons, and guidance was provided.

However, a lack of inclusivity for differentiation was noted, as it was perceived that the training did not adequately address the essential requirements of teachers working with special needs learners during the support provided to EFAL teachers at schools. This concern echoes findings by Bulut (2022), who observed that in-service training in Turkey lacked appropriate content for teachers working with special needs learners, suggesting a gap in the scope and relevance of the training provided. This highlights a significant deficiency in the in-service training programmes, particularly in equipping Intermediate Phase EFAL teachers with the digital skills necessary to effectively support all learners, including those with special needs, in a rural circuit.

Technology adoption in rural South Africa is constrained by poor infrastructure, high data costs, and low digital literacy among teachers. Despite efforts to utilise accessible tools like WhatsApp, challenges such as unstable networks and a lack of devices persist. Key barriers include inadequate connectivity, limited pedagogical capacity, and socio-economic constraints (Nqoma et al., 2024; Sithole & Mbukanma, 2024). Mhlongo et al. (2023) assert that teachers in South Africa must prioritise digital literacy, as its pedagogical integration significantly enhances teaching and learning. Digital tools improve learner engagement, support differentiated instruction, and promote collaborative, learner-centred environments, even for typically marginalised learners, such as introverts. The authors emphasise that when effectively employed, these tools foster active, independent learning through web-based communities and social platforms. However, unequal access to digital resources may exacerbate existing educational disparities (Duma et al., 2021). Therefore, teachers must develop robust digital pedagogical competencies to ensure equitable learning experiences and equip learners with essential 21st-century skills (Kerkhoff & Makubuya, 2022). A lack of digital skills among teachers limits access to effective, engaging, and inclusive learning opportunities. It hinders the use of technology for personalised teaching and global collaboration, widens educational inequalities, and obstructs progress towards quality education (Mhlongo et al., 2023).

Uzorka, Kalabuki, and Odebiyi (2024) highlight the importance of in-service training in improving teacher efficiency, knowledge, confidence, and motivation. However, Olawumi and Mavuso (2024) pointed out that the lack of a comprehensive monitoring and evaluation strategy and the provision of feedback make it difficult to assess the effectiveness of training programmes or identify areas that need improvement. Desimone (2011) suggests that a conceptual framework should be employed to properly evaluate the impact of in-service training, considering the key elements of effective professional

development. This highlights the importance of comprehensive and inclusive in-service training programmes that address the diverse needs of all learners. Most studies have focused on integrating technology into lessons, but not on EFAL teachers' perceptions of the in-service training on integrating digital skills in the Mogodumo Circuit, specifically in the Intermediate Phase. Therefore, there is a paucity of studies on the in-service training of EFAL teachers regarding the integration of technology and the development of their digital skills, specifically in the rural context.

This study explored the perceptions of Intermediate Phase English First Additional Language teachers regarding in-service training on integrating digital skills and their applications in rural primary schools. The questions asked are as follows:

- *In what ways did the Intermediate Phase EFAL teachers' knowledge increase by attending the training?*
- *What aspects of the training were most relevant to Intermediate Phase EFAL teachers?*

The structure of this investigation includes the conceptual framework, methodology, findings, discussion, and conclusion.

2. Literature Review

2.1 Technology skills for teaching and learning

In-service teachers' training on digital skills is crucial for empowering educators with pedagogical practices that enhance learners' experiences. Tang et al. (2022) affirm that teachers are responsible for reflecting on their teaching methods and employing suitable strategies to address gaps in their knowledge while enhancing their professional skills. This not only improves their teaching effectiveness but also offers a better learning experience for students. In-service training raises teachers' awareness of the digital content skills that learners will need for their future professional careers (Culcasi et al., 2022). Therefore, EFAL teachers must understand technology, pedagogy, and content to make learning more effective. The essential point is that by integrating technology, teachers can bring about change in the learning system. Using technology in education can enhance learners' constructivist abilities in building their knowledge (Bentri & Hidayati, 2023). Molefi et al. (2024) emphasise that in-service training must ensure that teachers adopt a mindset of ongoing learning and adaptability. By following these practical recommendations, teachers can manage the challenges of integrating technology into their teaching and effectively enhance learners' EFAL proficiency.

Rodrigues (2020) found that in-service training enhanced teacher commitment, motivation, and the use of digital technologies in the classroom, highlighting its role in promoting pedagogical innovation. While Portugal is more digitally resourced than rural South African schools, the study remains relevant, demonstrating how professional development can support effective digital integration in teaching. Nzarirwehi and Atuhumuze (2019) discovered that in-service training in Uganda improved teaching quality, with trained teachers applying new knowledge effectively and building stronger relationships with learners, leading to increased engagement. Despite contextual differences, similarities with rural South African settings, such as resource limitations, render the study pertinent, highlighting the potential of in-service training to enhance teacher performance and learner interaction in low-resource environments. Both studies offer valuable insights into how rural Intermediate Phase EFAL teachers in South Africa perceive in-service training on digital skills. They demonstrate that such training can enhance digital pedagogy, boost teacher motivation and confidence, and promote learner-centred practices, underscoring its importance in improving teaching and learning in under-resourced rural schools. The Maja (2023) studied teachers' perceptions of integrating technology in rural primary schools within the South African context. After four months of training, monitoring, and support, members of the community engagement team visited schools to follow up on teachers' technology integration in their lessons. The EFAL teachers indicated that the in-service training had focused on their active involvement in presenting their prepared lessons and applying their developed digital skills. This active participation transformed their teaching as they learned from one another. Teachers demonstrated that the training had increased their knowledge and skills in teaching all aspects of

English, such as listening and speaking, reading and viewing, writing and presenting, and finally, language structures and conventions. This was achieved through learners' active participation in a digitally engaging learning environment. However, Nzarirwehi and Atuhumuze (2019) assert that these benefits can only be realised when the training is properly planned, implemented, and continually evaluated.

Carvalhais and Azevedo (2024) and Mede and Işık (2016) highlight the importance of ongoing monitoring and collaborative networks in enhancing the effectiveness of in-service training. Their findings indicate that sustained support helps reinforce learning and tailor training to teachers' needs, such as time management, fostering creativity, and adapting content. Although Portugal and Turkey differ from South Africa in terms of resources, the shared challenges—particularly in the Turkish context—render these insights relevant. They suggest that incorporating structured follow-up and collaboration into in-service training could improve the integration of digital skills among rural South African EFAL teachers.

2.2 Using technology innovatively

Innovative teaching methods driven by technology can transform traditional classrooms, offering new opportunities to enhance learner engagement and improve teaching objectives. In line with this, Spaulding (2013) suggests that consistently improving in-service training for teachers on digital skill integration can lead to more effective modelling of technology use, further supporting the potential for transformative approaches in teaching. Bentri and Hidayati (2023) recommend that teachers receive in-service training to enhance their digital pedagogy skills, enabling them to teach effectively in the digital age. This aligns with the need for continuous in-service training, particularly for EFAL teachers in rural areas, to ensure they can effectively integrate digital tools into their teaching practice. Amponsah et al. (2021) highlight the necessity for teacher training programmes to align with 21st-century educational demands. The authors argue that, to meet the evolving needs of modern education, teachers must be equipped with technology skills through in-service training, which will ensure creative and innovative teaching practices. Without adequate training in innovative teaching methods, teachers may struggle to bridge the gap between traditional practices and the dynamic skills required in today's classrooms. Therefore, it is crucial to prioritise the design of in-service teacher training that fosters 21st-century competencies.

Williams (2017) found that teachers in the United States valued in-service training that provided step-by-step guidance on using advanced digital tools like the SMART Board and Mimio Pad; however, ongoing support was necessary to help teachers retain and apply these skills effectively. Similarly, Vishnupriya and Bharathi (2022) reported that the use of audio-visual aids during training in an Indian college helped teachers better understand the material and motivated them to create their own digital lesson content, such as PowerPoint presentations. In the South African context, Teane (2024) demonstrated how using accessible digital platforms like TEAMS, WhatsApp, YouTube, and electronic learning materials during in-service training enhanced teachers' digital skills and enabled them to provide learners with electronic revision content, especially during the COVID-19 pandemic. While the United States context benefits from more advanced technologies and infrastructure and the Indian context is situated in higher education, all three studies emphasise the importance of practical, user-friendly, and contextually relevant digital training. South African rural teachers share similarities with their Indian counterparts, such as limited resources and the need for accessible training tools, but they face additional challenges like intermittent internet access and minimal ongoing support. These findings suggest that effective digital skills training in rural South Africa should be hands-on, multimedia-supported, reinforced over time, and leverage commonly available platforms to accommodate local constraints.

Pongsakdi et al. (2021) found that in Finland, teachers with low initial confidence in digital skills experienced significant improvements after in-service training, whereas those with higher confidence

levels showed little change. This suggests the importance of tailoring training to teachers' varying levels of digital proficiency. Similarly, Mede and Işık (2016) reported that while teachers in Turkey were generally familiar with devices such as iPads and SMART Boards, they required additional support to effectively integrate these technologies into their teaching practices. Although Finland and Turkey differ from South Africa in terms of infrastructure and resources, these findings are relevant to the rural South African EFAL context, where teachers often have uneven digital skills and limited access to pedagogical guidance on using technology. The studies highlight the need for differentiated, context-sensitive in-service training that not only builds digital confidence but also emphasises practical strategies for integrating technology meaningfully within under-resourced classrooms.

2.3 Inclusion of diverse pedagogies

Including diverse pedagogies for differentiation in in-service teacher training highlights the need to adapt teaching methods to cater to different learner needs and contexts. Research consistently points to key areas where in-service training should better respond to these needs. Mede and Işık (2016) found that teachers emphasised the importance of teaching the same content differently to address diverse learning styles. Technology can enhance this approach by providing tools such as adaptive learning platforms, digital simulations, and multimedia resources that allow teachers to present the same concepts in varied and engaging ways. Teachers also highlighted the need to choose teaching methods that consider learners with special educational needs. Merlin (2023) asserts that assistive technologies, such as text-to-speech software, and digital tools, such as interactive whiteboards or online quizzes, empower teachers to address the unique needs of these learners while maintaining an inclusive classroom environment.

Rodrigues (2020) confirmed the importance of providing in-service teachers with the flexibility to choose teaching activities. Technology integration supports this by offering a wide range of digital tools and resources, enabling teachers to design lessons that cater to diverse learner preferences. For example, interactive apps can foster engagement and accommodate various learning styles. The role of teacher autonomy in implementing differentiated teaching becomes even more significant when technology is involved, as teachers need the confidence and skills to select and apply the most effective tools for their unique classroom contexts.

Ayvaz-Tuncel and Çobanoğlu (2018) reported that in-service teacher training programmes often fail to contribute to teachers' professional development, partially due to inadequate training environments and trainers. These issues can be addressed by incorporating training on digital tools and technologies, ensuring that teachers learn about diverse pedagogies and how to apply technology to implement them. The authors argue that active participation in workshops that allow teachers to explore, practise, and evaluate technology use in real classroom scenarios can significantly enhance professional development outcomes. Teachers should have a say in determining their training needs, particularly in integrating digital skills to address classroom challenges. Mabogoane (2021) and Moosa and Bekker (2021) critiqued the one-size-fits-all approach to continuous professional development. Teachers expressed frustration with generalised training that does not address their specific needs or the diverse backgrounds of their learners. Effective professional development requires pathways that enable teachers to articulate their needs and receive targeted, context-specific training, particularly in technology.

Nseibo et al. (2022) highlighted the lack of adequate teacher training on disability inclusion, despite the growing demand for inclusive education in South Africa. The authors emphasised that integrating technology into teacher training programmes could bridge these gaps by equipping teachers with assistive devices and augmentative communication technologies. When implemented effectively, these technologies facilitate curriculum differentiation and promote inclusive practices to accommodate learners with disabilities. Furthermore, collaborative efforts between teachers and multidisciplinary teams are essential to maximise the potential of these tools, ensuring they are

seamlessly integrated into teaching practices (Nseibo et al., 2022). Research by Fernández-Batanero et al. (2022) reinforces the importance of such collaboration, particularly in tailoring strategies to meet diverse learner needs. Additionally, training programmes must include mechanisms to evaluate their effectiveness, enabling teachers to adopt flexible approaches that align technology with assistive devices, thereby fostering equitable and inclusive learning environments (Eden et al., 2024).

2.4 Situating the gap in intermediate phase EFAL teachers' perceptions in rural areas

While numerous studies have examined teachers' perceptions of in-service training, limited research focuses explicitly on the views of EFAL teachers in the Intermediate Phase in rural primary schools, particularly in the province of Limpopo. For example, Mwapwele et al. (2019) explored rural schools across seven South African provinces, revealing that although many teachers were optimistic about using ICTs in their teaching, they still faced significant financial, technical, and digital skills challenges. The study also noted that most schools prohibited learners from using personal digital devices, except for calculators. Similarly, Nkadimeng and Thaba-Nkagimene (2019) investigated the implementation of e-learning in rural Limpopo secondary schools. They emphasised that practising teachers should be adequately trained to engage with digital technologies for teaching and learning. Mahwai and Wotela (2023) also examined technology integration in rural schools within the Seshego Circuit. They found that the barriers discussed in the literature, such as limited access to mobile technologies, were also evident in their context.

Despite this research, there remains a significant gap in understanding the specific perceptions of EFAL teachers in rural areas regarding in-service training on digital skills integration, especially in the Intermediate Phase. This study addresses this gap by focusing on EFAL teachers in a rural area of Limpopo, a region often overlooked in research. This approach not only broadens the existing body of knowledge but also provides insights into the unique challenges faced by these teachers while teaching diverse learners. It offers a fresh perspective on how digital skills in-service training can be effectively implemented in rural contexts. Therefore, evaluating teachers' perceptions of the in-service training conducted in 2022 will help identify strengths and weaknesses in current programmes, leading to more effective professional development opportunities.

3. Conceptual Framework

This study is underpinned by Desimone's (2009) conceptual framework for professional learning. Desimone claims that teachers' ability to enhance learning outcomes depends on characteristics such as content focus, active learning, coherence, duration, and collective participation. She argues that focusing on how to teach EFAL and how learners learn enables teachers to become better at their roles, which may also improve learners' performance. The implication is that during in-service training, activities should emphasise content and how learners acquire it.

Secondly, active learning is a more engaging and participatory approach where teachers learn by doing, observing, and discussing, rather than just sitting and listening. This means teachers should have opportunities to observe, discuss, and receive feedback on their presentations. Thirdly, the training teachers receive should be coherent, aligning with their current knowledge, the goals set by their schools and education authorities, and be directly relevant to their daily teaching practices. Consequently, training objectives should be consistent with the curriculum, teacher knowledge and beliefs, learners' needs, and school, district, and policy activities.

Fourthly, the sustained development of new skills and ideas demands ongoing support for teachers to effect meaningful change in their teaching. It is suggested that monitoring and support should occur throughout the learning process. Lastly, the collective participation of teachers from the same grade and subject fosters an interactive learning community. In the context of this study, the learning community comprises Intermediate Phase EFAL teachers from the rural circuit in Limpopo, including those from mainstream and special schools for learners with disabilities. Hodgson and Khumalo (2016)

describe a special school as one that caters exclusively to children with disabilities, whereas a mainstream school accommodates learners with low to moderate support needs.

Desimone's conceptual framework for professional learning aims to provide a structured approach to understanding how professional development can effectively enhance teaching practices and, ultimately, learners' performance. It was deemed relevant as the study focused on EFAL teachers' perceptions of in-service training concerning digital skills in teaching and learning in the Intermediate Phase in a rural area of Limpopo. Kang, Cha, and Ha (2013) highlight limitations of professional development studies, such as Desimone's (2009) conceptual framework being correlational and not determining a true causal effect, lacking rigorous methodologies, and primarily relying on teachers' perceptions. Nevertheless, I opted for this framework because it is meaningful for this study, as it explains the relationship between professional development and teachers' outcomes.

In reviewing the literature, Desimone's conceptual framework for professional learning was used as a lens through which to view the findings. For instance, Amponsah et al. (2021) emphasise that teacher training programmes should align with the demands of 21st-century education, while Culcasi et al. (2022) highlight the importance of such programmes in raising teacher awareness of learners' needs for the development of digital content skills for their future careers, which include the ability to create, use, evaluate, find, and share content using digital devices. Similarly, Maja (2023) reveals that during monitoring and support visits conducted four months after initial training, teachers reported that active participation helped them learn from one another, fostering a collective communicative network, as recommended by Carvalhais and Azevedo (2024). This article is supported by the findings and recommendations of Amponsah et al. (2021), Culcasi et al. (2022), Maja (2023), and Carvalhais and Azevedo (2024). The chosen framework was appropriate because it allowed the author to anchor the research within an interpretivist perspective, which assisted in generating a rich and deep understanding of the phenomenon investigated.

4. Methodology

This research adopted an interpretivist paradigm. According to Pervin and Mokhtar (2022), this approach is adaptable and interpretive, offering valuable insights into the reasons behind individuals' actions and behaviours. A qualitative approach was utilised in this study. Pervin and Mokhtar (2022) argue that qualitative research enables data collection within participants' natural environments, allowing for a more detailed and accurate representation of their everyday activities. The study followed an intrinsic case study design, which, as Coombs (2022) explains, is appropriate when aiming to gain a deeper understanding of a particular case. This design explored the experiences of Intermediate Phase EFAL teachers in rural areas regarding in-service training on integrating digital skills into their teaching practice.

4.1 Sample and data collection

In line with the qualitative approach, ten EFAL teachers were purposively selected from six rural primary schools in the Mogodumo Circuit, Limpopo, South Africa. Five of these schools were mainstream and were sampled according to size (large and small), while one was a special school. The schools were chosen because they were located in the rural circuit where the community engagement project was conducted, offered EFAL, employed teachers who had participated in in-service training, and represented diverse contexts. The teachers taught in the Intermediate Phase (Grades 4, 5, and 6), which serves learners aged between 10 and 12 years. Cohen et al. (2018) argue that purposive sampling allows researchers to select participants with substantial knowledge of the studied phenomenon.

Data collection involved conducting semi-structured face-to-face interviews, which allowed the researcher to gain deep insights into participants' experiences and provided flexibility for probing questions to explore topics in detail. Eppich et al. (2019) emphasise that semi-structured interviews are effective in gaining deep insights into participants' experiences and allow for flexibility in probing

questions to explore topics in detail. An interview protocol was used to guide the discussions, and participants were encouraged to express their views, experiences, and reactions to the in-service training on integrating digital skills into their teaching practice. To ensure accuracy and reduce potential bias, the researcher conducted member-checking by sharing the interpreted data with the participants for their review. A journal was maintained throughout the study to document the entire research process, and the interviews were audio-recorded and transcribed by a professional transcriptionist.

4.2 Data analysis and ethical considerations

Based on Braun and Clarke's (2014) six-step framework, thematic analysis was employed to analyse the data. This method involved familiarising oneself with the data, generating initial codes, identifying themes, reviewing and refining these themes, and assigning names and definitions to them. Participants' statements were categorised into common phrases, and each sentence was coded. Similar ideas were highlighted, allowing the researcher to group related codes into preliminary themes. These themes were further refined to ensure they accurately reflected the original data. The final themes were labelled using direct quotes from participants, and a narrative report was created to summarise the findings.

Ethical approval for this study was obtained from the university's ethics review committee (Ethical clearance number: 2017/09/13/90233522/01/MC), and permission was granted by the Limpopo Department of Education, the Circuit Office, and the school principals. All participants and their schools received and signed consent forms prior to data collection. The study's objectives were clearly explained to the participants both verbally and in writing. Pseudonyms were assigned to the teachers; for example, they were referred to as P1, P2, to P10, to protect their confidentiality and personal information throughout the research process.

5. Presentation of Results

This study explored the perceptions of Intermediate Phase English First Additional Language teachers regarding in-service training on integrating digital skills in rural primary schools. The data analysis revealed three key themes: advanced learners in a technological world, innovative teaching methods using technology, and inclusion of diverse pedagogies for differentiation. A brief overview of each theme is provided below.

5.1 Theme 1: Advanced learners in a technological world

When participants were asked about how their knowledge was increased by attending the training, P6's responses were:

> *As a lifelong learner, I have learned the most interesting things. As it was my first workshop to attend, I am willing to put effort into what I have learned. I found the training interesting, as it will help our learners to be effective and advance them, as we are now living in a technological world.*

P1 echoed that:

> *The training enhanced my understanding of how to blend traditional teaching methods with technology, enabling learners to not only listen but also speak and read, and to visually engage with the content, better preparing them for a technology-driven world.*

While P8 remarked:

> *Learners are now exposed to a variety of interactive tools such as educational apps and podcasts, which enhance their understanding and engagement, positioning them to thrive in a technologically advanced learning environment.*

P5 added that:

> *The training highlighted how learners can benefit from engaging digital content such as YouTube stories, PowerPoint lessons, and WhatsApp-based learning groups. Introducing such tools from the Foundation Phase can ensure learners grow up fluent in technology-enhanced learning environments.*

The participants view technology as essential for enhancing learner engagement and preparing learners for a digital future. The training shifted their perspectives, demonstrating that digital tools can transform passive learning into active, multimodal engagement. They emphasised the importance of early exposure to technology in building digital fluency from a young age. The responses also highlighted a growing sense of responsibility among teachers to adapt and lead this change, positioning themselves as key drivers of technology integration in education.

5.2 Theme 2: Innovative teaching methods using technology

When participants were asked about the training aspects that were most relevant to them, their responses were as follows:

> *The workshop was an eye-opener in terms of using various techniques in teaching. Teachers were able to share various methods of using technology in the English lesson. I observed the implementation of technology, the mistakes made, and how to overcome them. I recommend you bring extra laptops for those who do not have one.* P3.

P10 responded:

> *The workshop made it easy for my e-learning. It has been simplified and made user-friendly. Presenting the lesson electronically showed that the 4IR is already in the classroom.*

P9 explained:

> *I have learned that teaching using technology is very fascinating and can capture learners' interest and stay focused. The presentation of lessons by peers using Apps and the involvement of parents and learners using Apps. The workshop material was good; however, it would be best if it were also given as a soft copy. I recommend that the workshop be conducted twice a year. I also recommend monitoring technology implementation in schools to check whether schools are heading in the same direction as the world.*

P4 replied*:*

> *I acquired skills on how to create a Google Classroom and ClassDojo and how to use WhatsApp as an educational medium.*

The participants' responses highlight the value of hands-on, collaborative training in helping teachers adopt innovative teaching methods using technology. They appreciated learning through real examples and peer demonstrations, which boosted their confidence and practical skills. The use of tools like Google Classroom, ClassDojo, and WhatsApp indicates a shift towards interactive and connected learning. Participants also emphasised the need for ongoing support, resources, and follow-up to sustain these practices. Their awareness of global trends, such as the Fourth Industrial Revolution (4IR), reflects a recognition that integrating technology is essential for modern, relevant teaching.

5.3 Theme 3: Inclusion of diverse pedagogies for differentiation

This theme examines the incorporation of diverse pedagogical approaches to facilitate differentiated learning in technology-enhanced classrooms. Participants underscored the significance of employing flexible, inclusive teaching methods that cater to the diverse needs of learners, particularly those with visual impairment:

> *I found it interesting when WhatsApp lessons and podcast is used to teach learners since mine are visually impaired. These were the most relevant aspects for me.* P7

P2 has a contradicting idea to P7 and stated that:

> *I recommend that our workshops be separated from those who teach sighted learners. The material needs to be in Braille to cater to visually impaired teachers and learners, as they are part of this project.*

P6 reflected on the value of peer-shared strategies:

> *The integration of tools like Google Classroom is beneficial for presenting content information and is suitable for auditory and self-paced learners, thereby supporting varied learning styles and preferences within the classroom.*

The participants' responses highlight the importance of using diverse and inclusive teaching methods to meet the varied needs of learners, especially those who are visually impaired. Tools such as podcasts, WhatsApp, and Google Classroom were regarded as valuable for promoting access. However, the feedback also reveals gaps in the training's inclusivity, with requests for braille materials and separate sessions for visually impaired teachers. This indicates a need for more intentional planning to ensure equitable access. Overall, the responses emphasise the value of differentiated instruction and the importance of flexible, responsive teaching strategies in technology-supported classrooms.

6. Discussion of Findings

The study revealed that rural EFAL teachers are increasingly adopting digital tools as essential to teaching and learning, reflecting a shift from traditional methods to more interactive, learner-centred approaches. This change in mindset aligns with Desimone's (2009) view that effective professional development must be relevant and classroom-based. Despite limited resources, teachers demonstrated a strong commitment to bridging the digital divide and improving learner engagement through platforms introduced during training. Their role as change agents highlights their willingness to innovate, supported by studies such as Li et al. (2024), Kerkhoff and Makubuya (2022), and Anis (2024). However, the findings also point to the need for consistent infrastructure and ongoing support, as warned by Duma et al. (2021), to ensure that digital integration becomes a sustained practice rather than a temporary initiative.

The study found that experiential, peer-led training significantly influenced rural EFAL teachers' practices by boosting confidence and encouraging creativity. Peer learning helped reduce professional isolation and fostered a sense of community, making the skills gained more sustainable and supporting Desimone's (2009) and Sumadevi's (2023) views on effective professional development. Despite infrastructure limitations, teachers showed adaptability by using platforms like WhatsApp and Google Classroom, demonstrating their role as proactive innovators, in line with Mustafa et al. (2024). However, the lack of resources, such as laptops and teaching materials, continues to hinder full digital integration, highlighting ongoing inequalities noted by Mhlongo et al. (2023). Teachers' awareness of the Fourth Industrial Revolution (4IR) and their commitment to preparing learners for a digital future signal an encouraging alignment with global educational trends, echoing Nqoma et al. (2024). The findings stress the need for professional development to be supported by sustained infrastructure investment.

The study found that rural EFAL teachers are increasingly recognising the role of technology in supporting inclusive education, particularly for learners with disabilities. Tools such as podcasts, WhatsApp, and Google Classroom are being used creatively to assist visually impaired learners, aligning with Al-Azawei et al. (2016) on the value of assistive technologies in under-resourced settings. While some teachers embraced general digital tools for differentiation, others highlighted the need for more specific accommodations, such as braille and screen readers, reflecting a tension between broad adaptability and targeted support. This supports Desimone's (2009) and Florian and Linklater's (2010) arguments for tailored, context-sensitive professional development. Peer sharing of inclusive strategies emerged as a vital mechanism for overcoming professional isolation and promoting

accessibility. Teachers also showed a growing awareness of differentiated teaching, as advocated by Tomlinson et al. (2003), but cited resource limitations as a barrier to full implementation. These findings emphasise the need for inclusive, practical, and well-supported professional development, along with systemic improvements in training, infrastructure, and policy to make inclusive education sustainable in rural settings.

7. Conclusion

The training was found to be transformative for rural teachers, enhancing their confidence and equipping them with digital skills for innovative teaching; however, infrastructural challenges were noted. Teachers recognised the significance of technology in English First Additional Language lessons and emphasised the necessity of blending traditional and modern methods. Group activities fostered improved teacher engagement, while tools such as WhatsApp, podcasts, and Google Classroom facilitated inclusive learning for visually impaired learners. Continuous professional development was underscored, with a particular emphasis on specialised training for teachers of visually impaired learners. The study concludes that rural EFAL teachers are active agents of change, embracing digital tools, driving innovation, and promoting inclusivity, reflecting a transformative shift in teaching practices despite systemic challenges.

This inquiry was conducted with a small sample of teachers, so the findings may not be generalised to all rural academic settings. It is recommended that further research should examine context-responsive models of digital professional development for rural EFAL teachers, as well as the pedagogical impact of inclusive technologies on teaching learners with special educational needs. In practice, it is essential to provide continuous, context-specific in-service training, promote the integration of digital tools with traditional pedagogies, and encourage group-based, inclusive teaching strategies to enhance both teacher efficacy and learner support.

8. Declarations

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References

Al-Azawei, A., Serenelli, F., & Lundqvist, K. (2016). Universal design for learning (UDL): A content analysis of peer-reviewed journal papers from 2012 to 2015. *Journal of the Scholarship of Teaching and Learning*, 16(3), 39–56. https://doi.org/10.14434/josotl.v16i3.19295

Amponsah, S., Ampadu, E., & Thomas, M. (2021). Professional development among in-service teachers: Motivational factors, pathways and coping strategies. *Educational Review*, 75(2), 1–16. https://doi.org/10.1080/00131911.2021.1951173

Anis, M. (2024). Teacher professional development in the digital age: Addressing the evolving needs post-COVID. *International Journal for Multidisciplinary Research*, 6(1), 1–14. https://doi.org/10.36948/ijfmr.2024.v06i01.12386

Ayvaz-Tuncel, Z., & Çobanoğlu, F. (2018). In-service teacher training: Problems of the teachers as learners. *International Journal of Instruction*, 11(4), 159–174. https://doi.org/10.12973/iji.2018.11411a

Fernández-Batanero, J. M., Montenegro-Rueda, M., Fernández-Cerero, J., & García-Martínez, I. (2022). Assistive technology for the inclusion of students with disabilities: A systematic review. *Educational Technology Research and Development*, 70(5), 1911–1930. https://doi.org/10.1007/s11423-022-10127-7

Bentri, A., & Hidayati, A. (2023). Improving digital pedagogy competence through in-service training for elementary school teachers. *Journal of Physics: Conference Series*, 2582(1), 1–8. https://doi.org/10.1088/1742-6596/2582/1/012064

Braun, V., & Clarke, V. (2014). What can thematic analysis offer health and wellbeing researchers? *International Journal of Qualitative Studies on Health and Well-being*, 9(1), 26152. https://doi.org/10.3402/qhw.v9.26152

Bulut, A. (2022). Perceptions of teachers towards in-service training activities. *International Journal on Social and Education Sciences*, 4(2), 275–289. https://doi.org/10.46328/ijonses.387

Carvalhais, L., & Azevedo, P. (2024). Digital teacher training in the Portuguese national plan for digital development at schools: A case study. *Technology, Knowledge and Learning*, 29, 1579–1595. https://doi.org/10.1007/s10758-024-09760-3

Cohen, L., Manion, L., & Morrison, K. (2018). *Research methods in education* (8th ed.). Routledge. https://doi.org/10.4324/9781315456539

Coombs, H. (2022). *Case study research: Single or multiple* [White paper]. Southern Utah University. https://doi.org/10.5281/zenodo.7604301

Culcasi, I., Russo, C., & Cinque, M. (2022). E-service-learning in higher education: Modelisation of technological interactions and measurement of soft skills development. *Journal of Higher Education Outreach and Engagement*, 26(3), 39–56.

Desimone, L. M. (2009). Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. *Educational Researcher*, 38(3), 181–199. https://doi.org/10.3102/0013189X08331140

Desimone, L. M. (2011). A primer on effective professional development. *Kappan Magazine*, 92(6). https://lfp.learningforward.org/handouts/Dallas2018/8133/Effective%20PD%20DeSimone.pdf

Duma, N. M., Mlambo, S., Mbambo-Mkwanazi, S., & Morgan, W. (2021). Digital inequalities in rural schools in South Africa. *Open Science Journal*, 6(3), 1-16.

Eppich, W. J., Gormley, G. J., & Teunissen, P. W. (2019). In-depth interviews. In D. Nestel, J. Hui, K. Kunkler, M. W. Scerbo, & A. W. Calhoun (Eds.), *Healthcare simulation research: A practical guide* (pp. 85–91). Springer Nature. https://doi.org/10.1007/978-3-030-26837-4

Fernández-Batanero, J. M., Montenegro-Rueda, M., Fernández-Cerero, J., & García-Martínez, I. (2022). Assistive technology for the inclusion of students with disabilities: A systematic review. *Educational Technology Research and Development*, 70(5), 1911–1930. https://doi.org/10.1007/s11423-022-10127-7

Florian, L., & Linklater, H. (2010). Preparing teachers for inclusive education: Using inclusive pedagogy to enhance teaching and learning for all learners. *Cambridge Journal of Education*, 40(4), 369–386. https://doi.org/10.1080/0305764X.2010.526588

Hodgson, T. F., & Khumalo, S. (2016, August 14). Too many children left behind: Exclusion in the South African inclusive education system. With a focus on the Umkhanyakude district, KwaZulu-Natal. https://www.right-to-education.org/blog/too-many-children-left-behind-exclusion-inclusive-education-system

Kang, H. S., Cha, J., & Ha, B. W. (2013). What should we consider in teachers' professional development impact studies? Based on the conceptual framework of Desimone. *Creative Education*, 4(4), 11-18. https://doi.org/10.4236/ce.2013.44A003

Kerkhoff, S. N., & Makubuya, T. (2022). Professional development on digital literacy and transformative teaching in a low-income country: A case study of rural Kenya. *Reading Research Quarterly*, 57(1), 287–305. https://doi.org/10.1002/rrq.392

Li, Y., Chen, D., & Deng, X. (2024). The impact of digital educational games on students' motivation for learning: The mediating effect of learning engagement and the moderating effect of the digital environment. *PloS One*, 19(1), e0294350. https://doi.org/10.1371/journal.pone.0294350

Mabogoane, T. (2021, November 25). Rapid review of teacher in-service training in South Africa: Ted summit. Department of Planning, Monitoring and Evaluation, Republic of South Africa. https://www.etdpseta.org.za/education/sites/default/files/2021-11/Commission%203%20-%20Teacher%20Education%20-%20Initial%20%26%20Continuing%20-%20Dr%20Thabo%20Mabogoane.pdf

Mahwai, N. J., & Wotela, K. (2022). Integrating technology in teaching and learning: Have Seshego Circuit rural schools escaped the challenges? *Journal of Public Administration and Development Alternatives*, 7(1), 55–67. https://doi.org/10.55190/SIUK3193

Maja, M. M. (2023). Teachers' perceptions of integrating technology in rural primary schools to enhance the teaching of English first additional language. *Journal of Curriculum Studies Research*, 5(1), 95–112. https://doi.org/10.46303/jcsr.2023.8

Mede, E., & Işık, M. (2016). The needs of primary English teachers for an in-service teacher training programme. *Turkish Online Journal of Qualitative Inquiry*, 7(2), 1–30. https://doi.org/10.17569/tojqi.80909

Merlin, T. M. (2023). Adapting assistive technology to diverse learning needs in inclusive education. *Shanlax International Journal of Arts, Science and Humanities*, 11(S1), 63–66. https://doi.org/10.34293/sijash.v11iS1-Nov.6868

Mhlongo, S., Mbatha, K., Ramatsetse, B., & Dlamini, R. (2023). Challenges, opportunities, and prospects of adopting and using smart digital technologies in learning environments: An iterative review. *Heliyon*, 9(6), e16348. https://doi.org/10.1016/j.heliyon.2023.e16348

Molefi, R. R., Ayanwale, M. A., Kurata, L., & Chere-Masopha, J. (2024). Do in-service teachers accept artificial intelligence-driven technology? The mediating role of school support and resources. *Computers and Education Open*, 6, 100191. https://doi.org/10.1016/j.caeo.2024.100191

Moosa, M., & Bekker, T. (2021). Initial teacher education students' conceptualisation of inclusive education. *Journal of Education*, 85, 55–74. http://dx.doi.org/10.17159/2520-9868/i85a03

Mustafa, F., Nguyen, H. T. M., & Gao, X. (2024). The challenges and solutions of technology Integration in rural schools: A systematic literature review. *International Journal of Educational Research*, 126, 102380, 1–14. https://doi.org/10.1016/j.ijer.2024.102380

Mwapwele, S. D., Marais, M., Dlamini, S., & Van Biljon, J. (2019). Teachers' ICT adoption in South African rural schools: A study of technology readiness and implications for the South Africa Connect broadband policy. *The African Journal of Information and Communication*, 24, 1–21. http://dx.doi.org/10.23962/10539/28658

Nqoma, L., Mpiti, T. P., Makena, B., Ginyigazi, Z., & Qoyi, M. (2024). Stretching the boundaries of transformative learning to selected rural schools of Eastern Cape in South Africa. In M. Tezer (Ed.), *Metacognition in learning: New perspectives* (pp. 1-12). https://doi.org/10.5772/intechopen.113918

Nkadimeng, M. P., & Thaba-Nkagimene, K. L. (2019, August). *Implementation of e-learning in rural Limpopo secondary schools: Are teachers and schools ready for a new pedagogy?* Paper presented at the Digital Innovation and Transformation Conference: Digital Skills (pp. 59).

Nseibo, K., Vergunst, R., McKenzie, J., Kelly, J., Karisa, A., & Watermeyer, B. (2022). Learning together: The dynamics of training teachers for disability inclusion in South Africa. *Frontiers in Education*, 7, 999814, 1–9. https://doi.org/10.3389/feduc.2022.999814

Nzarirwehi, J., & Atuhumuze, F. (2019). In-service teacher training and professional development of primary school teachers in Uganda. *IAFOR Journal of Education*, 7(1), 19–36. https://doi.org/10.22492/ije.7.1.02

Olawumi, K. B., & Mavuso, M. P. (2024). In-service teacher training programmes that promote education for sustainable development: A review of emerging literature. *Interdisciplinary Journal of Education Research*, 6, 1–20. https://doi.org/10.38140/ijer-2024.vol6.35

Osamwonyi, E. F. (2016). In-service education of teachers: Overview, problems and the way forward. *Journal of Education and Practice*, 7(26), 83–87.

Pervin, N., & Mokhtar, M. (2022). The interpretivist research paradigm: A subjective notion of a social context. *International Journal of Academic Research in Progressive Education and Development*, 11(2), 419–428. https://doi.org/10.6007/IJARPED/v11-i2/12938

Pongsakdi, N., Kortelainen, A., & Veermans, M. (2021). The impact of digital pedagogy training on in-service teachers' attitudes towards digital technologies. *Education and Information Technologies*, 26(5), 5041–5054. https://doi.org/10.1007/s10639-021-10439-w

Rodrigues, A. L. (2020). Digital technologies integration in teacher education: The active teacher training model. *Journal of E-learning and Knowledge Society*, 16(3), 24–33. https://doi.org/10.20368/1971-8829/1135273

Sithole, V. L., & Mbukanma, I. (2024). Prospects and challenges to ICT adoption in teaching and learning at rural South African universities: A systematic review. *Research in Social Sciences and Technology*, 9(3), 178–193. https://doi.org/10.46303/ressat.2024.54

Spaulding, M. (2013). Preservice and in-service teachers' perceptions toward technology benefits and integration. *Journal of Learning in Higher Education*, 9(1), 67–78.

Sumadevi, S. (2023). Effective use of diverse technology tools in flipped learning approach. *Journal of Historical Research*, 53(02), 106–113.

Tang, L., Gu, J., & Xu, J. (2022). Constructing a digital competence evaluation framework for in-service teachers' online teaching. *Sustainability*, 14(9), 1–17. https://doi.org/10.3390/su14095268

Teane, F. M. (2024). Technological literacy and its influence on teachers' adoption of a blended learning approach. *Reading & Writing*, 15(1), a426. https://doi.org/10.4102/rw.v15i1.426

Tomlinson, C. A., Brighton, C., Hertberg, H., Callahan, C. M., Moon, T. R., Brimijoin, K., ... & Reynolds, T. (2003). Differentiating instruction in response to student readiness, interest, and learning profile in academically diverse classrooms: A review of literature. *Journal for the Education of the Gifted*, 27(2–3), 119–145.

Uzorka, A., Kalabuki, K., & Odebiyi, O. A. (2024). The effectiveness of in-service teacher training programs in enhancing teaching quality and student achievement. *Forum for Education Studies*, 2(3), 1465. https://doi.org/10.59400/fes.v2i3.1465

Vishnupriya, S., & Bharathi, R. (2022). The impact of audio-visual aids in teaching. *International Journal of Health Sciences*, 6(S3), 7847–7859. https://doi.org/10.53730/ijhs.v6nS3.7877

Williams, M. E. (2017). Technology integration support levels for in-service teachers. *Journal of Education and Practice*, 8(7), 76–81.