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CONTACT: Margaret Malewaneng Maja-majam@unisa.ac.za

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Using ICT-based pedagogy to teach English First Additional Language during the COVID-19 pandemic: A rural case study

Margaret Malewaneng Maja

University of South Africa, South Africa

Email: majam@unisa.ac.za

ORCID Identifier: <https://orcid.org/0000-0001-6526-2501>

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Abstract

During the COVID-19 pandemic, face-to-face teaching was suspended, and teachers were forced to transition to remote teaching supported by information and communication technology (ICT)-based pedagogy. This study explored how teachers used ICT-based pedagogy to facilitate English First Additional Language (EFAL) learning during the COVID-19 pandemic in a rural area of Limpopo, South Africa. A qualitative descriptive case study was grounded in interpretivism and informed by teacher self-efficacy (TSE) theory. Nine purposefully sampled EFAL teachers (four male and five female) from five primary schools were interviewed. Data were analysed using thematic analysis. The findings indicate that only two of the nine teachers employed ICT in remote teaching and learning, using social media platforms like WhatsApp and YouTube; however, they could not effectively provide remote teaching to the learners due to a lack of adult support. In addition, challenges such as the lack of teachers' ICT knowledge and skill, lack of data bundles for internet connection, and learners' lack of digital devices emerged. The lack of digital devices and data bundles for internet connections led to the conclusion that remote teaching and learning attempts were unsuccessful. This study recommends that in-service teachers' training on ICT integration in the teaching and learning process is needed.

Keywords: COVID-19, data bundles, digital devices, information and communication technology, remote teaching and learning, social media



Introduction

Integrating Information and Communication Technology (ICT) as a new pedagogy is essential in twenty-first-century education (Yamamoto & Yamaguchihe, 2016). This is particularly important in the teaching of English First Additional Language (EFAL) in the Intermediate Phase (grades 4 to 6). Lukas and Yunus (2021) attest that ICT is likely to improve teachers' pedagogical skills, which result in learners possibly performing better than learners who were learning without technology integration. Although ICT is being integrated into the teaching and learning process, the COVID-19 pandemic with the enforced closure of schools, compelled teachers to adapt to a new teaching method through technology. However, in South Africa, teaching technology use is particularly challenging, especially in historically disadvantaged rural areas. Ningsih (2021) asserts that the pandemic served as a reminder of teachers' lack of ICT literacy and resources in addition to inadequate access to the Internet, a dearth of modern technology, and learners' inability to engage in digital learning which compromises technology use in EFAL lessons. Many teachers in rural areas lack the requisite expertise when using online apps for teaching and learning (Ying, Siang & Mohamad, 2021), which may deprive learners of the opportunity to acquire and develop indispensable English skills within the evolving technology of the twenty-first century. This paper, therefore, argues that amid remote teaching and learning challenges, teachers who infuse ICT in their teaching can motivate and cultivate confidence in learners to acquire EFAL proficiency to a greater degree.

ICT integration is the process of deciding where and how technology fits in the teaching and learning setting (Ghavifekr, Razak, Ghani, Ran, Meixi & Tengyue, 2014). In this inquiry, ICT-based pedagogy is a method of teaching in which technology is integrated into lessons that are presented to learners. To integrate this pedagogy into teaching lessons, self-efficacy plays an important role since teachers need to learn some of the skills independently. The studies have shown that ICT-based pedagogies were implemented during the COVID-19 pandemic using digital devices and social media such as WhatsApp and YouTube (Bećirović, Brdarević-Čeljo & Delić, 2021; Al-Ansi, Garad, Al-Ansi, 2021; Ying, Siang & Mohamad, 2021; Van den Berg & Mudau, 2022). However, Al-Ansi, Garad, and Al-Ansi (2021) attest that the implementation of ICT-based pedagogy has faced several challenges such as a lack of digital devices, skills to manage the teaching and learning of remote classes, expensive and slow internet connections, and maintenance of software and hardware. On the other hand,

integrating this approach in teaching EFAL offers several advantages, including raising learners' learning interest, independent learning, information retention, teamwork, and allowing flexible learning time (Al-Ansi, Garad, Al-Ansi, 2021).

During the COVID-19 pandemic which rampaged the globe in 2020, teachers worldwide resorted to emergency remote teaching and learning. Hodges, Moore, Lockee, Trust, and Bond (2020) define emergency remote teaching as a temporary shift of teaching delivery to an alternate delivery mode due to crisis circumstances. Emergency remote teaching entails using remote teaching solutions to deliver teaching that would typically be given face-to-face and will switch back to that format once the crisis has passed (Hodges et al., 2020).

In South Africa, schools were closed nationwide on 18 March 2020. Initially, they were scheduled to re-open on 31 March 2020. However, schools remained closed for several months since face-to-face teaching was halted to curb the spread of COVID-19. To ensure continuity of teaching and learning during school closures, teachers had to develop innovative means of reaching their learners. Limpopo, South Africa, where this study was conducted, is reported to have the least access to the Internet with only 1.6% of the population having access at home (Hanekom, 2020). The fourteen primary schools located in a rural area of Limpopo are classified under quintile one, meaning they are non-fee-paying schools. The quintile ranking is determined by the Department of Basic Education's analysis of the community's income, literacy, and unemployment levels (Botha, 2020). The inquiry occurred in the Intermediate Phase (grades 4–6) of those public primary schools where EFAL is the language of learning and teaching (LoLT) after learners have transitioned from being taught in their home language in the Foundation Phase (grades R–3).

Most remote teaching and learning studies have been conducted in higher institutions and high schools. However, only a few focus on rural primary schools, specifically in the Intermediate Phase, and therefore need investigation because of the lack of empirical data in this context. This study is deemed essential to broaden the understanding of how ICT-based teaching is used in classrooms throughout the Intermediate Phase, particularly by EFAL teachers. Against the above background the following question guided the investigation: *How did teachers use ICT-based pedagogy to facilitate EFAL learning during the COVID-19 pandemic in a rural area of Limpopo?*



Theoretical Underpinnings

Teacher self-efficacy (TSE) theory was deemed appropriate as a lens to explain how the EFAL teachers used the ICT-based pedagogy to teach remotely since face-to-face teaching was suspended to contain the spread of the virus. Inspired by Bandura's self-efficacy theory, TSE develops high levels of motivation in teachers, enabling them to achieve their objectives despite the challenges they confront both within and outside the classroom (Daniilidou, Platsidou & Gonida, 2020; Schwarzer & Warner, 2013). According to Bandura (1977), self-efficacy is a person's confidence in their ability to undertake the required activity or activities and attain a given performance level. Self-efficacy beliefs impact how a person feels, thinks, and acts (Bandura, 1977). However, the pandemic had a major impact on teachers' pedagogical values, and they had to change their beliefs and pedagogical practices. Thus, a pedagogical transformation was necessary. Bećirović, Brdarević-Čeljo, and Delić (2021) affirm that technology-based pedagogy is no longer limited to the traditional school setting and has evolved into a powerful means for teaching and learning a language. ICT-based pedagogy defines the teacher's role as different from traditional practice (Jimoyiannisa & Komis, 2007). Therefore, improving teachers' self-efficacy, particularly those connected to ICT use, is crucial in bringing about a much-needed shift in EFAL teaching. For instance, in South Africa English is learned as the language of learning and teaching (LoLT) in the Intermediate Phase. By the end of Grade 6 learners are expected to be reasonably proficient in English regarding interpersonal and cognitive academic skills (Department of Basic Education, 2011). However, the truth is that many learners still struggle to communicate effectively in English at this point. Therefore, teachers should use ICT-based pedagogies to enhance their teaching strategies and provide opportunities for learners to develop competence and fluency in English, particularly as English is vital as the LoLT from Grade 4 onwards.

Jeon (2017) asserted that highly self-efficacious teachers, for example, have a favourable impact on academically struggling learners with limited home ICT resources. On the one hand, teachers with high self-efficacy see problems as challenges, allowing them to change and cope with the challenges flexibly (Daniilidou et al., 2020). Low self-efficacious teachers on the other hand perceive challenging initiatives as threats, and avoidance becomes a solution (Daniilidou et al., 2020). They get an inferiority complex when confronted with difficult situations (Schwarzer & Warner,

2013). Therefore, self-efficacy is significant in using ICT-based pedagogy in teachers' remote teaching.

For this inquiry, a solid feeling of efficacy which led to independent learning, and positive emotional reactions of some EFAL teachers in using ICT-based pedagogy during the pandemic were demonstrated. Furthermore, the theory used to analyse the literature and the findings emphasized that teachers' perceived teaching self-efficacy affects the success of remote teaching (Cardullo, Wang, Burton & Dong, 2021). TSE theory was thus suitable as it permitted the author to work from an interpretivist paradigm which describes what specifically selected people do in their daily lives. Denzin and Lincoln (2018) indicate that this paradigm allows one to understand the meaning of selected participants' activities as they occurred in this study where EFAL Intermediate Phase teachers described and explained remote teaching using ICT-based pedagogies during the pandemic. Again, this paradigm permitted the author to interpret the study from the interpretivist perspective which aligned with the study's findings.

Literature review

The use of ICT-based pedagogy to teach EFAL during the COVID-19 pandemic is discussed in the literature review, which draws on current topics from an international, African, and South African context to provide additional insight from a global perspective. The review in this section highlights the use of digital devices and social media such as WhatsApp and YouTube in teaching EFAL and situates the gap in this inquiry.

The use of digital devices in teaching EFAL

Rapid technological developments have provided innovative language learning opportunities, particularly in turbulent times such as the COVID-19 pandemic. Through ICT-based pedagogy, teaching and learning can occur anytime and anywhere, and teachers can transfer more information to a larger number of learners in a shorter period (Fu, 2013; Akhmedov & Shuhkrat, 2020). When teaching without physical contact, particularly when face-to-face communication is impossible, teachers reported that the use of digital devices is vital to deliver effective remote teaching



and learning (Mincato, de Oliveira & Ramos, 2021). However, Cardullo et al. (2021) contend that teachers' perceived teaching self-efficacy has an impact on their success.

The study conducted by Mincato et al. (2021) found that using technological or digital devices such as computers, smartphones, laptops, audio-video recorders, podcasts, and online dictionaries in EFAL classes could provide a better learning atmosphere and performance. However, as many teachers did not use digital devices in their teaching practice before the pandemic, the lack of knowledge resulted in difficulties in accessing online teaching platforms, engaging learners, and ensuring their motivation (Mincato et al., 2021).

Rahayuningsih, Rosalinah, and Subroto (2021) and Al-Jarf (2022) found that young learners preferred using computers, tablets, and mobile phones as they are easy to carry. The devices assisted learners in learning vocabulary and improving their pronunciation and listening skills as they listened to songs and watched movies. In addition, instead of using a hard-copy dictionary, learners looked up terms on their phones, and rather than scrolling through books for a literature search they could locate books online and be guided to a specific word (Al-Jarf, 2022). Teachers have acknowledged the use of online dictionaries indicating their ability to save time (Al-Jarf, 2022). Madzimure (2022) found that learners mostly used the computer for doing homework and emailing it to their teachers. However, Alqahtani (2019) indicated that the limited number of technology devices remains a problem, especially in rural areas, as many teachers and learners have limited access to modern technology devices.

The use of social media

Makki and Bali (2021) indicate that social media provides a platform for learners' engagement and collaborative learning. It also promotes teachers' ICT integration skills and stimulates and encourages their learners to continue learning using technology. WhatsApp and YouTube are popular social media that offer access to over a million people annually (Patmanthara, Febiharsa & Dwiyanto, 2019). In their comparative study between Spain and the United States García-Martín, Rico, and García-Martín (2023) found that teachers had received training in digital tools and media platforms like WhatsApp and YouTube. Teachers believed that their use of these tools was more relevant to remote teaching and learning and had higher perceived beliefs of self-efficacy. However, according to Gbemu, Sarfo, Adentwi, and Aklassu-Ganan (2020),

most teachers in Ghana reported having low self-efficacy levels when incorporating social media into their teaching. Gbemu et al. (2020) concluded that the lack of ICT-based pedagogy training, reluctance to change, access to appropriate technologies, and internet accessibility likely contributed to teachers' loss of confidence in their abilities.

WhatsApp

The WhatsApp application can serve as a virtual class around the globe. WhatsApp is a unique online information-sharing tool applied to smartphones (Martina, Hendro & Indra, 2020). It is economical, has low uploading and downloading rates, and is easy to use (Annamalai, 2019). Hershkovitz, Abu Elhija, and Zedan (2019) showed that WhatsApp promotes good learner-teacher relationships and a positive classroom environment. WhatsApp is a widely used social networking tool that makes it possible for users to exchange texts, images, audio, videos, documents, and voice calls; therefore, learners' speaking skills improve indirectly (Azam, Fadhil, & Yunus, 2019; Fauzi & Angkasawati, 2019; Durgungoz & Durgungoz, 2021). Through WhatsApp, learners may communicate with their teachers regardless of physical proximity or time constraints (Ying et al., 2021). Thus, the teacher can provide immediate feedback to each learner. According to Alderman (2017), WhatsApp encourages collaboration, extends learning time, manages large class sizes, flips the classroom, and builds confidence in learners. This allows teachers to share messages with learners via screenshots, and learners to write or record their speech and send it to the teacher for feedback. Learners can also watch the videos before class time. Rahaded, Puspitasari, and Hidayati (2020) found that WhatsApp helped learn a language, encouraged problem-solving behaviour, and assisted learner interaction while communication skills improved. However, Durgungoz and Durgungoz (2021) highlighted a discrepancy in the use of WhatsApp in Indonesian schools. They found that on this platform, although used flexibly for extracurricular communication, teaching takes place without socialisation.

In their study on the use of WhatsApp as a mediating tool, Motaung and Dube (2020) found that students at a rural South African university did not understand that the audio accompanying the tutorial was meant for working in group discussions as part of interactive learning. The audio was sent to learners via a WhatsApp group, so they could not ask for clarification on complex ideas as most were accustomed to face-to-face lessons compared to remote lessons. It was also found that learners



could not log in to contribute to conversations due to a lack of smartphones and data bundles for internet connectivity, making it challenging to enable teaching and learning.

YouTube

Bonk (2009) highlighted an interesting side of YouTube, which as a social medium contributes to worldwide education. It can efficiently build remote teaching and learning environments in an EFAL classroom. According to Nofrika (2019), using YouTube offers flexibility for learners, assists in subject comprehension, and offers entertaining videos. It also facilitates the development of speaking, listening, reading, and writing abilities; boosts vocabulary; and allows for engagement in a real-world setting (Nofrika, 2019). The mixture of photos and videos with subtitles reduces the stress that learners experience in face-to-face classrooms (Hasan, Ibrahim, Mustapha, Islam & Younus, 2018). Learners pick up verbal and non-verbal cues that improve their language proficiency by observing speakers' interactions. Furthermore, Nofrika (2019) found that YouTube videos contribute to learners' confidence and add new knowledge to the topic being taught.

Chhabra (2012) showed that YouTube offers real examples of everyday usage of English where the teacher can show movie clippings and facilitate dialogue, asking learners to narrate the story and complete worksheets from the watched movies. This improves learners' speaking skills, adds creativity, and enhances writing skills. Furthermore, remote teaching and learning can be made more relevant and purposeful in the opinion of Almurashi (2016), by using authentic learning resources like YouTube videos and video clips that can encourage learners to read and gather information on specific topics (Findlater, 2014).

In Vietnam, Dau (2022) investigated teachers' practices of teaching EFAL remotely to primary school learners during the lockdowns and found that many teachers used YouTube in their teaching and recorded their video lessons shared with learners on the schools' websites. Kim and Kim (2021) found that learners who struggled with classroom activities during the first term improved after posting YouTube videos that provided simple, clear, and practical instruction. Learners considered YouTube as a tool that clarifies and assists in grasping unclear content in English instead of looking for more online resources (Kim & Kim, 2021).

In rural areas of Cambodia, Heng and Sol (2020) found that teachers and learners had erratic access to the Internet and were unable to use emerging technology. This made remote teaching and learning difficult and frustrating for both teachers and learners. Teachers, however, faced the pressure of extra workload because they had to adapt subject content and learning resources to online platforms (Heng & Sol, 2020). In South Africa, Madzimure (2022) found that the unstable internet connection or network was triggered by an electricity interruption known as load-shedding, which affected the successful uploading of YouTube videos. In addition, the lack of smartphones and laptops with up-to-date software also caused low-quality photos and indistinct videos.

Situating the gap

Although studies by Mokoena (2022) were conducted in a rural context, very few studies were conducted on using ICT-based pedagogy to teach EFAL during the COVID-19 pandemic. Thus, the author argues that this study is unique and makes a novel contribution to the current dialogue in this area. First, there are no similar studies conducted on using ICT-based pedagogy to teach EFAL during the COVID-19 pandemic, specifically in the Intermediate Phase in Limpopo. Therefore, it fills the gaps and expands the body of knowledge in this field. Second, it is being undertaken in a rural location where EFAL teachers have not received much attention in research.

Methodology

A qualitative interpretivist perspective which identifies and describes what specific people do in their daily lives as well as the meaning of their activities (Denzin & Lincoln, 2018), was followed in this research. This study was placed within an interpretivist paradigm because it enabled the author to interact with the participants and understood the real individual experiences in their remote teaching. The participants had the opportunity to express themselves and share their experiences thanks to the qualitative methodology. Semi-structured interviews were used to collect data for this descriptive case study in the participants' staffroom after school hours. The interview schedule guided the interviews which were recorded using a voice recorder with the participants' permission.



The inquiry was conducted in five primary schools where nine Intermediate Phase EFAL teachers were selected. The participants were selected because they were situated in a rural area with the least access to the internet (Hanekom, 2020) with teachers lacking ICT requisite skills (Chisango, Marongwe, Mtsi & Matyedi, 2020). Creswell (2013) affirms that participants are purposefully selected based on characteristics in which the author is interested (Creswell, 2013). To protect the participant's privacy and confidentiality, pseudonyms were utilised, and participants were referred to as P1, P2, to P9. Permission from the author's university (ethical clearance number: 2017/09/13/90233522/01/MC), the Limpopo Province Department of Education, the circuit office, and the participating schools and teachers were obtained before the study began.

According to Braun and Clarke (2006), there are six stages to thematic data analysis: familiarising oneself with the data, creating initial codes, looking for themes, examining those themes, defining and labelling the themes, and delivering a report. Before the analysis, all interviews were transcribed by a professional. The author read the transcribed material multiple times. Common phrases (e.g., 'cell phones', 'technological devices', and 'virtual classes'; 'create the groups', 'communicate with the parents', 'download the stories', and 'own data'; 'lack of knowledge', 'inferiority complex', 'no guidance', and 'not digital devices') were grouped together based on the participants' responses. Each sentence was given a code, and highlighters were utilised to show similar or related themes. The various codes were then sorted and organised into themes (e.g., 'cell phones', 'technological devices', and 'virtual classes' were grouped under 'digital devices'; 'create the groups', 'communicate with the parents', 'download the stories', and 'own data' were grouped under 'social media'; and 'lack of knowledge', 'inferiority complex', 'no guidance', and 'no digital devices' were grouped under 'challenges'). The potential themes were then re-evaluated, fine-tuned, and occasionally matched to raw data. The key to each theme was discovered and named using the participants' verbatim comments relating to the research question. Then, based on the analysed interview data, a written narrative report was created.

Mishra and Alok (2017) contend that it is the responsibility of the researcher to take steps to confirm the validity of the data. The author employed triangulation to ascertain credibility by using the interviews and literature review to verify the collected data. The recorded interviews were compared with the literature to corroborate what emerged from the analysis of the data. The analysed data were returned to participants

for member checking to confirm the study's credibility. The in-depth contextual information regarding the five primary schools where nine Intermediate Phase EFAL teachers were selected, was presented. These measures will allow the study findings to be transferred to other rural primary schools in South Africa. In addition, interviews were audio-taped to ensure that correct information was captured, and the recordings were transcribed verbatim. Verbatim quotes from the participants were used in the interpretation of this investigation.

Findings

The inquiry explored how teachers used ICT-based pedagogy to facilitate EFAL learning during COVID-19 in a rural area of Limpopo. To develop a foundational understanding of the participant teachers involved in remote teaching, their biographical characteristics are included in Table 1.

School	Participants	Gender	Age of participants	Grades teaching	Teaching experience (in years)	Remote teaching and learning training
A	P1	Female	39	6	17	No
	P2	Female	49	4	21	No
B	P3	Female	30	5	6	No
	P4	Male	49	5	22	No
C	P5	Female	42	6	17	No
	P6	Male	51	4	19	No
D	P7	Male	55	5	25	No
	P8	Female	37	6	11	No
E	P9	Male	37	4	10	No

The participants' biographical data revealed five females and four males among the nine participants from five primary schools. This accurately reflects South Africa's demographics and the distribution of teachers in local primary schools (Davids & Waghid, 2020). To support this Davids (2018) reported that South Africa's teaching



profession comprises 72.5% of female teachers and 27.5% of male teachers. The participants were between the ages of 30 and 55, with teaching experience ranging from six to 25 years. Three participants taught Grade 4, three taught Grade 5, and the other three were responsible for Grade 6. According to the demographics, the participants were mature individuals with extensive teaching experience. However, the findings revealed that none of the participants had been trained to integrate ICT into their teaching and remote teaching, vital during the Covid-19 lockdown.

Three themes emerged from the raw data: the use of digital devices, social media, and the challenges of remote teaching and learning. Each theme is briefly discussed below.

The use of digital devices

During the lockdown, only two of the nine participants in the study used digital devices to try to communicate with their learners. The following is what one participant had to say, *'I used my laptop, smartphone and data bundles'*. (P1). However, four of the nine participants had digital devices. P6 indicated, *'We have the gadgets at school, but I could not use them because I have an inferiority complex. It seemed I could not cope'*. Seven of the nine participants, however, were unable to teach remotely. P5 said, *'With me, I was never exposed, and my learners were never exposed to the usage of these technological devices. It was difficult for me to have virtual classes'*. The implication here is that using digital devices presents a variety of difficulties for both teachers and learners. As a result, remote teaching and learning necessitated the provision of digital devices, knowledge of and competence in using them, effort and perseverance, and confidence from the teacher and from the learner. However, a lack of competence and self-efficacy prevented seven teachers from attempting remote teaching to continue the teaching and learning process during the pandemic due to teachers' lack of ICT knowledge and skill.

The use of social media

Two teachers using digital devices could begin the teaching process remotely. However, this was also an issue because schools did not provide teachers with data bundles for remote teaching. Their desire to continue teaching, however, indicated their

confidence in using technology even though schools were closed. They described how they created activities: *'I created a WhatsApp group for learners with my own data. I posted the activities to the learners. I send a video I downloaded from YouTube to them to watch and answer the questions on the worksheet I provided as a starting point. Only a few responded'*, (P3). P3 thus took the initiative to create a forum for learning, even though only a few learners accessed and responded to the activities. P1 explained: *'I sent a YouTube video for a descriptive essay to learners via WhatsApp. I wanted them to watch it and describe themselves. I downloaded the stories for them to read, however, I could not reach out to learners'*. In the case of P1, it appears that even though activities were created for learning, learners could not access the remote teaching arrangement. Being placed in a very challenging situation with no training in using technology for teaching remotely, two teachers, P1 and P3, used their imagination to devise new ways to continue the teaching and learning process by using the digital devices at their disposal and teach remotely. On this point, P1 and P3 became proactive in confronting the challenges impacting their teaching and learning situations caused by COVID-19 national lockdowns by independently trying and learning ICT-based pedagogies which was new to them. Learners who could not respond and who could not be reached for remote teaching and learning might have lacked digital devices and data for internet connection or self-directed learning.

Challenges to remote teaching and learning

All nine teachers expressed their concerns about remote teaching and learning. The main concern was: *'Our learners are not permitted to bring cell phones to school, it was challenging to engage them in online learning during the lockdown'*, (P7). The implication is that before the lockdown, as cell phones were not allowed at schools, teachers were not used to incorporate smartphones in daily teaching and learning, not realising their value and usefulness at that stage. Of concern in this digital age is that seven participants indicated a lack of ICT knowledge. P2 explained, *'I could not conduct remote teaching and learning due to a lack of ICT knowledge.'* Three participants reported not having resources such as computers and laptops. *'We do not have resources and learners do not have digital devices like smartphones for online teaching'*, (P4). This indicates that prior to the lockdown teachers had not incorporated technology into their lessons and this resulted in a lack of knowledge in digital skills. One of the two teachers, P1, who



attempted remote teaching, indicated that, *'The challenge was that only a few parents with smartphones could buy data for learners' learning. Some lived with their grandparents, and they could not guide the learners on how to complete their activities'*. The implication is that lack of data bundles for internet connection, insufficient adult guidance in using digital devices, and not being able to access the activities meant that learners could not complete their activities. This deprived P1 and P3 self-efficacious teachers of actively delivering remote teaching to their learners.

Discussion

The paper explored how teachers used ICT-based pedagogy to facilitate EFAL learning during COVID-19 in a rural area of Limpopo. The schools in the area are classified under quintile one due to unemployment and high levels of illiteracy. At the time of the COVID-19 pandemic, schools that were closed during the lockdown period suffered a severe setback in teaching and learning which was supposed to continue with the use of technology. However, in remote rural areas, this was a major challenge for several reasons, such as the lack of ICT literacy and digital devices amongst the teachers (Ningsih, 2021). In this rural area in Limpopo, effective remote teaching and learning did not occur even though two teachers tried to reach out to their learners. This finding concurs with Marongwe and Garidzirai (2021) who indicated that some learners in rural areas experienced challenges of limited skills as well as access to technology since they were affected by the geographical and historical position of their schools. However, the degree of effort and the effectiveness of the two teachers were both influenced by perceived self-efficacy (Yamamoto & Yamaguchi, 2016). Even though it was a challenge for teachers who did not have the relevant knowledge and skills to use technology to teach, design material, assess, and give feedback in an online environment, they were self-motivated and eager to independently learn and took ownership to implement remote teaching and learning.

The many years of teaching as indicated in the biographical data imply that the participants had acquired the expertise necessary for teaching and learning on a face-to-face basis, however, remote teaching and learning was a new reality for which they had not been trained or prepared. The findings revealed that, of the nine teachers who participated in the study, only two teachers (aged 39 and 30) with respectively 17 and six years of teaching experience attempted remote teaching and learning.

The implication is that the majority of the participants had low TSE for online ICT implementation due to a lack of training and technophobia. COVID-19 induced fear in them and as a result, they lacked the self-motivation and interest to independently direct their learning to new ICT-based technology to try remote teaching. The pandemic highlighted in-service teachers' training dependency, meaning that their creativity depended on in-service training which resulted in their learners missing the content supposed to be taught during the lockdown. The two teachers perceived problems as obstacles that could be overcome and were self-motivated enough to undertake remote teaching despite a lack of training and multiple challenges. That is to say, the rural or urban context does not determine the motivation and confidence for remote teaching; it is determined by self-motivation and confidence within an individual. P1 and P3 were intrinsically motivated and had a positive attitude to independent learning to acquire digital skills for remote teaching.

Remote teaching and learning involve using digital devices like laptops and smartphones, which require data bundles for internet connection. After securing the digital devices, the two teachers created ways to develop the teaching and learning process remotely. They made use of social media platforms such as WhatsApp and YouTube. This process involved creating WhatsApp groups and downloading videos from YouTube based on the teaching matter. This is in line with Rahayu and Wirza's study (2020) that, based on participants' demographical data, 93% of teachers used WhatsApp for online teaching and learning compared to other applications or platforms. Although WhatsApp and YouTube are popular social media that offer access to many people, these social platforms need data bundles that not everyone in rural communities can afford. These teachers hoped that most of the learners will be reached during remote teaching. Unfortunately, most of the rural learners do not own or live with parents who own smartphones and have data for accessing remote learning. Even though they were unsuccessful in reaching out to most of the learners, their efforts and confidence in independent learning acquired them ICT skills that can assist in advancing their digital skills for future interactions.

The two teachers in this study posted YouTube videos through WhatsApp for learners to watch. An activity sheet with a set of questions based on the videos required learners to respond. The questions were to test learners' understanding of the stories as a starting point for remote teaching and learning. Another video was about descriptive essays: learners were required to watch it and later write a description of themselves



on a worksheet provided. Stories were also provided for reading. YouTube videos can lower stress in learning; provide entertaining films; increase learners' speaking, listening, reading, and writing skills; and expand their vocabulary (Chhabra, 2012; Hasan et al., 2018; Nofrika, 2019).

The two teachers used their creativity to devise novel ways to provide remote teaching to learners. Their creativity showed that they were not locked in the past of not using technology in their lessons and not being provided with data bundles for internet connection. This implies that creative teachers can think critically, bring ideas from all teaching sides, and come up with innovative strategies to confront situations preventing their teaching practices. They were intrinsically motivated to develop activities and maintained a strong commitment to their learners by using their own data bundles to achieve their goal of remote teaching. Daniilidou et al. (2020) asserted that self-efficacious teachers search for innovative ideas to assist learners in achieving their academic goals despite the challenges they confront both within and outside the classroom. However, one of the teachers in the study could not connect with the learners, while the other one reached only a few of the learners. Learners' lack of smartphones and data bundles for internet access may have been the cause of the failure of teachers and learners to communicate adequately.

The seven teachers who did not attempt remote teaching and learning worked in environments similar to those of the two teachers who attempted remote teaching and learning. Some of the seven teachers came from the same schools as those who tried remote teaching, meaning that these teachers were exposed to the same circumstances and worked in the same settings. These seven teachers highlighted a lack of ICT knowledge and skill, resources, data bundles for internet connection, and learners' parental guidance as significant problems. As a result, TSE was the primary distinction between teachers who attempted remote teaching and learning and those who did not. When confronted with complex conditions, teachers with low self-efficacy experience uncertainty and anxiety, as seen in the seven teachers who did not undertake remote teaching and learning (Daniilidou et al., 2020). In contrast, two teachers did not have sufficient resources for remote teaching and learning but improvised by using what they had. Four of the participants' schools had digital devices such as computers and laptops. However, the lack of ICT knowledge and competence resulted in an inferiority complex that prevented teachers from using technology. This is evident in one of the participants' responses, who echoed that: *I*

have an inferiority complex. It seemed I could not cope.' This finding concurred with that of Abukhattala (2016) where teachers indicated a lack of self-efficacy in their ICT skills but not a complete resistance to the using of ICT in their teaching. The indication was that, if they were trained, they might be equipped to integrate it into the teaching and learning process. Yamamoto and Yamaguchi (2016) also found that institutional efforts toward ICT usage in teaching EFAL are vital to TSE. Most teachers claimed that they and their learners were not exposed to technological devices in the teaching and learning process before the pandemic. Therefore, teaching and learning remotely during the pandemic was difficult to attempt. One of the teachers also indicated a lack of parental guidance as a drawback for remote teaching and learning. This finding concurs with Bhamani, Makhdoom, Bharuchi, Ali, Kaleem, and Ahmed (2020) whose study attested that most parents had been hopeless when it came to keeping their children engaged, due to a lack of ICT skills.

In all five schools that participated in this investigation, school policy forbade learners from bringing cell phones to class. According to the participants, the policy resulted in a lack of remote teaching and learning during the lockdown due to teachers', learners', and parents' lack of practice. The teachers believed that, if learners had been allowed to bring digital devices to school, there could have been basic knowledge of using the technology found in smartphones among teachers, learners, and parents. Due to the low TSE, the seven teachers' actions were compared to Bandura's (1994) idea that, when faced with an unpleasant situation such as the COVID-19 pandemic, these teachers dwelt on the shortcomings and difficulties they encountered before the lockdowns rather than focusing on how to transfer to remote teaching and learning successfully. For two teachers, ICT-based pedagogy practice may have offered them successful engagement with some of their learners in remote teaching and learning sessions.

Summary of findings

The findings revealed that, of the nine teachers who participated in the study, only two teachers attempted remote teaching and learning, using social media platforms like WhatsApp and YouTube. However, effective remote teaching and learning did not occur even though two teachers tried to reach out to their learners. One of the two teachers could not connect with the learners, while the other one reached only a few



of the learners. It was also revealed that learners' lack of smartphones, data bundles for internet access, and parental guidance may have been the cause of the failure of the two teachers and learners to communicate adequately. The challenges such as teachers' ICT knowledge and competence, resources, data bundles, and learners' parental guidance were highlighted as major problems.

Conclusion and Recommendations

The inquiry was about how teachers used ICT-based pedagogy to facilitate EFAL learning during the COVID-19 pandemic in a rural area of Limpopo. The findings revealed that only two of the nine teachers employed ICT in remote teaching and learning, using social media platforms like WhatsApp and YouTube. Challenges such as teachers' ICT knowledge and competence, resources, data bundles, and learners' parental guidance were highlighted as major problems. It was concluded that, even though two teachers engaged in remote teaching and learning during the lockdown, it was ineffective due to the lack of digital devices, data bundles for internet connection, and parents' guidance for some of the learners.

This paper adds to the body of knowledge by providing insights from the practical application of ICT-based pedagogy in the EFAL Intermediate Phase classrooms, particularly in rural areas. The limitation of this inquiry is that it was conducted with a small sample of teachers, so the findings may not be generalised to all academic settings.

Considering the findings, the following recommendations are suggested:

- Circuit managers should provide ICT-based pedagogy in-service training for all Intermediate Phase EFAL teachers so that technology can be incorporated into the teaching in the classroom. During the monitoring of teaching and learning in schools, support and motivation for using digital devices should be maintained.
- The schools should revisit their technological devices policy so that they can come up with safe and reasonable strategies allowing learners to use digital devices like smartphones, when necessary, during the lessons.
- Schools should provide data bundles for internet connection or establish internet networks to properly equip teachers to use modern technology.
- Schools should also be equipped with digital devices such as computers and

laptops for teachers and learners to use.

- Teachers should develop technical competence and learn to integrate technology into their teaching so that the transition to remote learning is effortless, should another situation arise, that may lead to the closure of schools.
- Schools should conduct parents workshops and teach them basic ICT skills so that they may help and oversee their children when they are learning remotely.

Future studies should focus on how ICT can supplement face-to-face teaching in EFAL.

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