AUTHOR:
Sekanse Abiner Ntsala[1]
Pricilla Mamare Seabela[1]

AFFILIATION:
[1]University of the Free State, South Africa

DOI: https://doi.org/10.38140/pie.v41i2.6823

e-ISSN 2519-593X
Perspectives in Education
2023 41(2): 233-246

PUBLISHED:
30 June 2023

RECEIVED:
11 October 2022

ACCEPTED:
25 May 2023

Obstructions to the integration of ICT in English First Additional Language lessons: The case of Limpopo intermediate phase classrooms

Abstract

English First Additional Language (EFAL) is one of the prescribed subjects in South Africa. However, it is a has proven to be difficult, especially the reading part of the it. On the other hand, the integration of Information Communication Technology (ICT) can mitigate the challenges and promote effective pedagogy in this subject. Unfortunately, there is evidence that the implementation of ICT is not easy to achieve in some South African schools. This scholarly piece, which is guided by the theory of connectivity, has its focus on those impediments that hinder the effective implementation of ICT in EFAL classrooms. This is because contextual factors must be faced head-on to achieve success in a school environment. The study was informed by interpretive practices, resulting in the use of participant observations and semi-structured interviews to collate the data. Thematic analysis of the data revealed the following: limited time for collaborative practices; lack of ICT expertise; issues of power; poor reading competence among the learners; limited pedagogical knowledge; workload; lack of resources; network issues; and safety issues. Despite all these conundrums, this paper proposes that intermediate phase EFAL teachers should still try to learn how ICT can assist the improvement of reading competence. For the integration of ICT to happen effectively, managers at all levels should also provide the necessary support to the teachers.

Keywords: *collaboration, contextual factors, EFALICT, integration, pedagogical experience*

Published by the UFS
http://journals.ufs.ac.za/index.php/pie

1. Introduction and background

The Curriculum and Assessment Policy Statement (CAPS) prescribes four language skills, namely listening and speaking, reading and viewing, as well as writing and presenting and language structures and conventions (DoE, 2011). The same document highlights the importance of good reading competency as a prerequisite for success in the other subjects. However, reading in the intermediate phase has been a problem in South Africa for some time. The work by Ntsala *et al.* (2021) highlights that the

performance of most intermediate learners is not satisfactory. A detailed scrutiny of the results of the Annual National Assessments (ANA), stretching from 2009 to 2014, attests to this fact. This problem has been reported broadly (Howie *et al.*, 2017: 11; Govender & Hugo, 2020; Willenberg, 2018). When faced with a situation such as this one, it is imperative to look for solutions to the problem, and the integration of Information Communication Technology (ICT) is one of the possible solutions.

The use of technology has become an unavoidable reality for human beings and schools (Adnan *et al.*, 2019). Technological innovations have impacted all the facets of life (Oke & Fernandes, 2020). There are benefits associated with the phenomena. In addition to increased performance, Garg (2021) mentions the following benefits: exposing new ways of learning; promoting inclusion; the development of higher order thinking skills, promoting collaboration, increasing the motivation to learn, differentiation of the curriculum, and preparing learners for knowledge economy. Henderson (2020) highlights that ICT in education will encourage individual learning, and develop life skills such as communication, leadership, productivity, research skills and online etiquette. These will arguably be some of the expected benefits of the 4th Industrial Revolution (4IR), and Education 4.0 has been adopted to keep up with the needs of the 4th IR (Hussain, 2018). This writer points out the following nine important expectations of Education 4.0: universality of learning, personalising learning, granting students choices in terms of the methodology, increasing project-based learning, increasing experiential learning, data interpretation, alternative assessment methods, involvement of students in curriculum design, and independent learning.

South Africa, as a global player, has also seen the need to maximise the benefits of this phenomenon (Munje & Jita, 2020: 265). The integration of technology is now encouraged in all the subjects, not only those subjects that are classified as scientific or technological. Unfortunately, the education sector has not been keen on adopting technology for pedagogic purposes (Oke & Fernandes, 2020). This concern is shared by Munje and Jita (2020: 266), who postulate that South African schools are behind in terms of integration of ICT in education. This paper investigates the latter challenge with the focus on South African rural intermediate phase English First Additional (EFAL) classrooms. In Du Plessis and Mestry (2019), the challenges facing the rural schools and the reality that they are perceived as marginalised and under-resourced are outlined. If there are challenges in terms of integration of ICT, this is probably where it will be more prevalent. Additionally, a study such as this is necessitated by the actuality that not many studies have focused on the impact of 4IR in South Africa (Moloi & Mhlanga, 2021: 7). The reports that have been reviewed are also not subject specific, meaning that they report at a generic level.

2. Literature review

Contextual factors

This discussion commences with this quotation presented by Kayembe and Nel (2019: 89):

> The human condition and social justice should be strongly considered. The ways in which technological advancement and shifting economic power impact on society at different socio-economic levels should be considered. The threats that exist in a world that is increasingly interconnected should be understood, and intercultural understanding, an abiding respect for freedom, and human rights should be promoted. Intercultural and interpersonal skills should therefore be developed.

To a certain extent, this encourages the need to consider contextual factors when dealing with the implementation of ICT. This is a necessary consideration for a country like South Africa with an uneven socio-economic spectrum.

In the school setup in South Africa, schools are periodically expected to provide school improvement plans, and these plans accommodate the contextual factors. In that context, the contextual factors are the aspects that have a negative impact on teaching and learning. Brownell *et al.* (2014: 36) provide an array of contextual factors that can be associated with special education teachers in literacy classrooms, such as moderate pedagogical knowledge, a lack of desire to learn new things, and a reluctance to implement policy. These can be attributed to the individual teacher. Very close to this is the concept of identity, as many teachers feel that reform challenges their professionalism (Salinas, 2017).

In their study into motivation and contextual factors, Hornstra *et al.* (2015: 365) argue that, regardless of whether the teacher is controlling or autonomous, the contextual factors teachers must deal with will also have an impact on their choices. In their work, Richards *et al.* (2018: 774-780) discuss several possible factors that can be regarded as contextual, such as stress, burnout, support/empowerment, appreciation of students, morale, sense of community, student/parent apathy, and policies.

Because the integration of ICT in the language classrooms may be a new phenomenon in some South African classrooms, it is important to illuminate such problems with the view to find alternatives or solutions. The inclusion of contextual factors in school improvement plans is aimed at finding solutions to the impediments at school and classroom level. This paper elucidates the challenges faced by rural EAFL teachers in Limpopo in their attempts to integrate ICT, with the hope that such frustrations will be addressed.

The 4th Industrial Revolution

South Africa, like most countries, is pursuing the prescripts of the Fourth Industrial Revolution (4IR), which is driven by the coming together of physical and digital technologies. It is not something that has been predicted, but it is now alive in the country (Kwinana & Mohau, 2019: 14). 4IR is a term that was created by Schwab, the founder and executive chairperson of the World Economic Forum, describing it as a technological revolution that will change the way people live, work and relate to one another (Schwab, 2017: 1). It is the latest industrial revolution, focusing more on ICT (Kayembe & Nel, 2019: 92). The First Industrial Revolution moved people from the handicraft economy to the use of water and steam power. The Second Industrial Revolution brought with it the use of electric power to create mass production while, during the Third Industrial Revolution, people used electronics and information technology to automate production. The 4IR added a layer on the Third Industrial Revolution, which is the digital revolution that has been occurring since the middle of the previous century (Kayembe & Nel, 2019).

South African children are exposed to technology; therefore, it needs to be used in schools to prepare learners so that they can fit in the world of 4IR. Kwinana and Mohau (2019: 15) emphasise that this can be achieved through the following: the involvement of politicians, policy makers and teachers to be fully equipped with relevant instruction and standardised curricula. The discussion introduced in the background section raises the argument that, for several reasons, some of these expectations may be difficult to achieve.

ICT in a language classroom

For some time, there has been a huge drive to integrate ICT into classrooms (Helmers, 2017). Munje and Jita (2020: 265) provide evidence that the South African government has long accepted the integration of ICT as a necessity in the classroom. There is the belief that young people are very used to technology, to the extent that they may feel lost in a space without technology (Hogenbirk, 2016). This, though, may not be the case for everybody in South Africa, due to varying socio-economic conditions. The work by Olatoye, Nekhevha and Muchonyerwa (2021) highlight the fact that the ICT skills which learners accumulate will ultimately benefit them if, or when they reach a higher education level. It is believed that the introduction of technology will help to develop the literary skills for the 21st-century digital age (Hogenbirk, 2016). What should be concerning for those in applied linguistics is that most of the discussions on the integration of ICT in education are focused on STEM subjects (Carrim, 2022).

However, there are some arguments in favour of the integration of ICT in language classrooms (Fariyah & Fauziyah, 2018; Floris, 2014: 139; Huang & Hong, 2015:175). In fact, this need was authenticated by UNESCO in 2007. As much as the integration of ICT is portrayed as beneficial, evidence is that South Africa has not managed to make significant gains in terms of the integration of ICT in education. Munje and Jita (2020: 266) undertook a study to determine the impact ICT has had in South African schools, and the verdict is that not much has been achieved. The study referred to was generic in terms of focus. Gajek (2015: 1) undertook a study to determine how language teachers implement ICT, but an important assertion by the author is that language teachers tend to shy away from technological projects. It must be mentioned that there is not much literature on the integration of ICT on the teaching of EFAL in South Africa; hence this paper raises challenges specific to the integration of ICT in EFAL classrooms, with a specific focus on a rural Limpopo school.

3. Theoretical issues

This paper is premised on connectivism as a guiding theory. Connectivism is a relatively new theory, seeing that it can only be traced back to 2005 (Western Governors University, 2021). This is one of the theories for the digital age (Downes, 2019: 113). Connectivism is one of the learning theories that have been developed for the e-learning environment (Goldie, 2016: 5). E-learning refers to the sharing of information and knowledge via different technology related channels (Akhter, Javed & Javaid, 2021). This work by Goldie highlights the need for broadness, multimodality, and interactions insofar as learning is concerned. These are some of the requirements that this study focused on. Furthermore, there are eight principles related to connectivism, and the third one, which states, “learning may reside in non-human appliances”, resonates well with the discussions in this paper (Picciano, 2017: 175). In a nutshell, this theory advocates the intensive integration of ICT in the classroom. The discussions on the integration of ICT in the language classrooms, as discussed above, resonate with this postulation.

4. Research design and methodology

This section expounds the methodological processes that were followed in collating and analysing the data, including the design limitations. All the processes were aimed at determining the extent of the integration of ICT into the intermediate phase EFAL classroom. An interpretive paradigm guided this study, because the focus was on the individuals’ own interpretation,

understanding and integration of ICT in the intermediate phase EFAL classrooms (Rahman, 2017: 103). In other words, it brought the researcher closer to reality (Dean, 2018: 3).

In resonance with the guiding paradigm, a descriptive case-study research design was selected to determine how teachers can work collaboratively to promote the integration of ICT in the Grade 4 EFAL reading classrooms. The study explored a bounded system (a single case study). In line with the selected design, qualitative research approaches were used to make connections in terms of how the participants experience the integration of ICT in their EFAL classrooms (Glesne, 2016). This approach provided the opportunity for researchers to interview and observe the participants.

The focus of observations was on how teachers implement reading lessons, and how they prepare, in their own setting (Creswell, 2013: 166). The participants were asked to outline how they integrate technology into their reading lessons, and the challenges they encounter. Semi-structured interviews focused on obtaining rich and detailed qualitative data from participants (Castello-Montoya, 2016: 811).

Purposive non-probability sampling was used. The aim was to select a case which would best help to answer the research questions (Zapta-Barrero & Yalaz, 2018: 163). The school selected is the only one with a computer laboratory in the Potgietersrus circuit in the Mogalakwena District, Limpopo province. From this school, a total of four Grade 5 EFAL teachers formed part of this study. All these teachers have more than five-years' experience as EFAL teachers.

The data were mainly analysed thematically. The process of analysing data started by repeatedly reading through the interview transcripts and observation checklist to obtain an overall understanding (Javadi & Zarea, 2016: 36). Trustworthiness was used to ensure the quality of the study. To achieve trustworthiness, the following four aspects were ensured: credibility, transferability, confirmability, and dependability (Nieuwenhuis, 2020: 144-146).

5. Ethical statement

All necessary permissions were acquired from the University of the Free State, the Free State Provincial Department of Education, and the school principals and participants. All participants signed consent forms. Anonymity of the participants and confidentiality of the responses were strictly adhered to.

6. Findings and discussions

6.1 Poor pedagogical knowledge

The first issue which needs to be highlighted is the fact that teachers have a problem with the teaching of reading. The statement below by one of the teachers serves as evidence:

> *I am teaching English, but I don't know how to teach reading. This is a most frustrating and challenging aspect.* (T2)

> *We lack instructional knowledge on how to teach vocabulary but, students also are having little vocabulary which might be caused by lack of attention during teaching and learning …* (T3)

This highlights a challenge which is not necessarily technical. Experienced language teachers with more than five years' experience should complete a reading lesson comfortably. This lack of expertise on the part of the teachers is a worrying factor because it has a direct impact on success in the classroom. The above scenario should be disturbing, as poor pedagogical knowledge is likely to impact negatively on the learners' reading development. The integration of ICT will not be a priority in a situation where the teachers are still struggling with the basics of effective teaching. It will be difficult to find additional strategies appealing when one is still struggling with the basics of teaching prescribed content. It is important that teachers possess knowledge about their subject, knowledge of how to teach at a general level, and knowledge of effective strategies to teach their subject (Killen, 2015: 30).

On this matter as well, teachers need to take some action. They need to improve themselves in line with the needs of their situation. Gulton, Hutauruk and Ginting (2020) explicate an array of skills that teachers need to have, such as questioning ability, the ability to strengthen learning, varying leaning, ability to explain explicitly, and classroom management skills, amongst others. This signifies the need for teachers to be prepared to upgrade these skills, as knowledge is dynamic by nature. The Western Governors University website (2020: 2) raises an argument for a drive for self-improvement. According to this, teachers need to attend workshops and study further, as in-service training serves to do away with inadequacies in the teaching fraternity (Osamwonyi, 2016: 83).

6.2 Teachers' lack of ICT skills

Like the previous discussion, another major concern is with regard to ICT skills and competency in the use of ICT equipment.

> *Most of the teachers were born before technology. They cannot operate a computer. They don't know how to use data projector. This is a serious challenge* (T1).

This quotation echoes the concerns raised by the other teachers. In fact, the observations prove that at this school, only one individual is competent in ICT, and he is not even a language teacher. This individual is expected to assist all teachers across all subjects.

According to Schwab (2017: 3), changes are historic in terms of their size, speed and scope. Kayembe and Nel (2019: 92), when reporting on their research on the integration of ICT in the classroom, indicate several challenges identified in adapting to the 4IR. These include pedagogical adaptation, teacher development, and increased funding for investment in resources and infrastructure for technological advancement. These pronouncements by Kayembe and Nel indicate that the challenges experienced by the participants are not limited to their area.

The suggestions suggested earlier about the need for self-development may also suffice in this regard; however, it must be noted that the teachers working in rural areas like these participants may face additional hurdles in terms of expanding their knowledge and skills level. A simple aspect of movement or transport may be challenging. Avenues in terms of training centres that offer the necessary skills may be limited.

In addition, teachers complain that they do not find many texts that are in line with the policy document. For example:

> *Every time when I say they must look for a story, or when I look for a story, I do not find many stories on what the CAPS say we must read. I end up now making copies for the learners, or I scan one copy and project it. That is why most of us use the projector a lot.* (T4)

This may be a tangible concern, more so because the material on the internet is not uploaded based on a particular country's curriculum. The texts on the internet may be relevant in terms of the grades and the phase but may not be relevant in terms of the prescribed themes. This may make it difficult to achieve meaningfulness in reading lessons.

A question to all the participants after this statement was whether they knew about local publishers or organisations that publish reading material, and their response was a no. It is not guaranteed that these publishers will cater for all the prescribed themes, but because they are local, the likelihood of this happening is higher.

Another issue, which may be linked to poor competency, is that not much was taking place in terms of assessment and feedback. No observation by the teachers took place during the lessons. No form of feedback took place after the lessons. It was more like an exercise designed only to meet the requirements. It seemed as if the lessons which involved ICT were just add-ons, and this should be a concern. Jozwik and Douglas (2017) postulate that assessment should not be ignored when ICT is used, even with struggling readers. It is advisable that the methods of assessment like oral questioning, written tasks, and the use of tools such as observation sheets, checklists and rubrics should not be ignored. The reason for this is that the teachers should still measure performance against a set of objectives.

As already pointed out, participants showed a lack of content and pedagogic knowledge, which is a common problem for most language teachers (Siddiquah & Salim, 2017). It can be argued that this limits their knowledge, or even their interest, in additional requirements such as ICT.

6.3 Competence of learners

Observations indicate that the learners in some rural areas are not very competent in terms of technological equipment. Most of the time, the main activity for them was to search for information using iPads, but some of them struggled with this activity, even though visits to schools for this study took place after July. The expectation is that by this time learners should be familiar with all the processes, but that was not the case, because they could not operate the Word program. Another aspect that became obvious during the observations is that a significant number of learners flounder when reading on iPads, which may be a reason why searching for information was problematic for them.

The above scenario raises the importance of helping learners to master the basics of ICT before it can be integrated, as their computer literacy skills are needed to manipulate technological tools. For a person to benefit from a computer, that individual must communicate with it. A person should be able to read and respond, with actions, to some messages that the device may show.

6.4 Inadequate computer applications

Another challenge noted during observations, and confirmed by the teachers is that the devices used at their school do not have the necessary language-related applications. This signifies a critical concern and a gap between what is expected and what is happening. For instance, Dalton and Grishan (2022: 4-14) advocate an eVoc strategy, which is sub-divided

into ten mini-strategies. All these mini strategies are aimed at the development of vocabulary. Additionally, Parenti and Chen (2015), suggest the use of Web 2.0, a technological tool which may improve reading fluency, particularly among struggling readers. Furthermore, Capodiceci *et al.* (2020) recommend several ideas that can develop various aspects related to comprehension. They mention that iStart can promote self-explanation, schemata, understanding of scientific text. ITSS assists with identifying main ideas and classifying information. They point out that 3D readers and CACSR promotes metacognition and understanding of reading strategies.

This discussion serves to highlight the presence of the relevant ICT tools to use during reading lessons, and it also shows the extent to which the learners lose out when the relevant ICT applications are not used during reading lessons. They do not get an opportunity to develop the competencies mentioned in the previous paragraph. This raises a need for teachers to search for information on these technological tools and applications and have discussions with their managers on how to source and use them.

6.5 Limited access and poor network

As the discussion on the resources has explicated, lack of resources is still one of the worst contextual factors for South African schools. The participants in this study also have concerns about the availability of ICT equipment.

> *We do not have enough resources. The school has twenty-five Ipads, but not all learners can have access to use them …* (T2)

The entire school only has 25 iPads, which means they must be booked in advance. This limits the availability of devices to teachers and students. This has an impact on teaching and learning. In between opportunities to use devices, teachers must operate as usual. In addition to this poser, because the number of learners often amounts to more than the available number of iPads, they must share. The observation was that this also contributes to a delay in terms of understanding how to use technology. In other word, students may simply not have enough time to master the use technological devices.

Another disturbing observation is that the devices work well only when used closer to the school office, due to a weak signal strength. Learners in classes further away have a problem with connectivity. In such cases, they mainly work offline. This could be mitigated by arranging classroom swaps with the teachers in classes closer to network points, but in some instances, this is not possible.

The shortage of ICT equipment is not a problem limited to the Limpopo province. In the Free State, for example, the department installed computer laboratories at some schools, and even provided electronic equipment. However, similarly, there is not enough equipment for the number of learners enrolled. Unfortunately, in South Africa, Departments of Education in various provinces are financially constrained. It will take some time before they are able to supply all the schools with adequate ICT equipment. The schools are therefore expected to find ways to increase the amount of equipment available. Depending on the quintile of the school, some may find this easy to achieve, while for other schools it will always be difficult because of socio-economic circumstances. In some areas, parents may not be able to assist schools to achieve all this. This impact of socio-economic circumstances may also be relevant to the aspect of poor connectivity because it can only be solved by changing network providers, or by buying a more powerful internet option. Asssertions made do not necessarily exonerate schools from their fundraising responsibilities.

6.6 Issues of safety

Reports are rife of learners losing or breaking iPads, as well as the theft thereof. Teachers at this school also seem to be worried.

> *In my opinion, I am concerned about the safety of these Ipads. What if learners drop them off? They are good and brought positive impact to teaching and learning, but the safety part of it is not satisfactorily*. (T4)

The teacher here is raising a possibility, but this may be based on knowledge of what has been going on around the country. The concern is also an indicator that there is no policy on the management of ICT equipment. In addition, teachers seem to be responsible for the safety of gadgets, as the statement by T1 insinuates,

> *… the issue of dropping them is the teacher's responsibility …*

The above concern may also result in problems, signifying a possibly unfair situation that may discourage teachers from integrating ICT devices into their lessons. Schools should rather come up with measures to help safeguard devices. There must be a clear policy that will encourage learners to be responsible. Knowing that a teacher will be held responsible for their irresponsible behaviour is not a good way to moralise learners. This is another aspect that schools and teachers should engage parents about. The parents should be aware that ICT equipment should be kept safe, like all other learning support and teaching material. On the same note, they need to accept that parents will pay for the devices if their children damage or lose them. The importance of the ICT equipment should be discussed with learners, for them to appreciate the privilege they are enjoying.

6.7 Systemic issues

The issue of loadshedding affects everybody, and teachers did raise it as a concern as well. The challenge with loadshedding is that it happens anytime and anywhere. When this happens, ICT lessons are disrupted, because electricity in some form is required for ICT-related lessons. The assertions made on the shortage of resources highlight challenges in terms of funds and fundraising, but in cases like this, schools should consider fundraising, and for this initiative to succeed, they must engage robustly with the parent community. Schools may consider using generators or installing solar power.

6.8 Workload

This is a rural school, but the number of learners is high. The teacher-learner ratio is not favourable, as one of the teachers indicated:

> *We are having more subjects to teach with more students, so it's really a challenge*. (T3)

This was noted during the observations as well, and the teachers seemed to struggle to deal with the situation. If teachers have too many subjects this is indeed problematic. The EFAL subject has four prescribed skills, and the intermediate phase teaching plans are loaded. Having to teach other subjects in addition to a language subject makes things difficult. The fact that the teachers, by their own admission, are not competent in the target language also aggravates the problem. This infers that the quality of teaching and learning is compromised due to being overworked (Dianabasi & Ugochukwu, 2020 :3). All these realities combined may result in a situation where a teacher may be demotivated to attempt the lessons that involve ICT.

Having said that, teachers need to understand that over-crowdedness is a national challenge, if not international. There may be another cohort of schools that are overcrowded that are managing the situation better. They can approach these schools and identify how they do things differently. This will be in line with the principle of twinning, which is about teachers from different schools initiating collaborations that result in the sharing of expertise and resources. As already indicated in the discussion on poor competency, self-development is partly a teacher's responsibility.

6.9 Issues of power

Observations highlighted the actuality that in some instances there are issues of power at play. This became evident in some of the meetings which were observed, where the HoD was involved. In some instances, teachers would simply agree to some of the decisions, even when they were not clearly in favour thereof. This may demotivate teachers. In situations where managers monopolise processes, organisational resistance is a reality (Zanin, Ryan & Bisel, 2018). This means that teachers may deliberately avoid the whole issue of ICT. For the benefit of the learner, in cases such as this it may be useful for FAL teachers to share their objectives with their line managers. Even if no maximum support is enjoyed, EFAL teachers can continue with what they are doing. That will be in line the theory of hope, which highlights the reality that problems should not necessarily discourage committed teachers from continuing with good deeds (Huen *et al.*, 2015).

7. Limitations of the study

As much as it is our conviction that this study is valuable, we must concede to the fact that it may be difficult to achieve the principle of generalisation, due to the sample size. Selecting one school, and interviewing five teachers may not be enough, but it must be emphasised that in the selected region, this was the only school with a computer laboratory, at that time. The use of the interpretive paradigm and qualitative research methods did provide the desired results, to a large extent, but other researchers on the topic of ICT in the EFAL classrooms, who are faced with a similar situation in terms of the population, can opt for a different research design, such as a quasi-experimental design. This will enable them to identify a particular variable and base research processes on it.

8. Conclusions

This paper highlights the reality that even though it is vital to promote the integration of ICT in language education, it is also important to focus on the impediments. In this case, the very fact that only one school in a whole education district has a computer centre should be concerning. The government must do more in this regard. Additionally, teachers have limitations in terms of ICT usage, and it will be difficult for the prescripts of 4IR to be attained if this situation is left unresolved. As much as teachers have a professional obligation to upgrade their skills, Departments of Education should also play an important role in this regard. Learners also require training on the use of gadgets such as mobile phones, tablets, laptops and desktops. The reality of limited resources can also not be left unresolved. To have enough resources necessitates fundraising in most instances, but schools in certain areas will not find it easy to raise funds. The Department of Education can use its resources to do that for the schools. Unfortunately, schools will not be able to create ICT material as easily as creating other teaching media. Additionally, there is a need for policies at school

level to safeguard ICT equipment that has been secured already. The policies should factor in appropriate consequence management, to ensure that both learners and staff take good care of the ICT equipment.

References

Adnan, M., Karim, A., Karim, H., Tahir, R., Tahir, M., Haniff, M., Kamal, M., Nurul, N., Nurul, Y. & Muhyiddin, A. 2019. Education 4.0 technologies, industry 4.0 skills and the teaching of English in Malaysian tertiary education (2019). *Arab World English Journal (AWEJ)*, 10: 330-343. https://doi.org/10.24093/awej/vol10no4.24

Akhter, S, Javed, M.K., Shah, S.Q. & Javaid, A. 2021. Highlighting the advantages and disadvantages of E-Learning. *Psychology and Education*, 58: 1607-1614.

Brownell, M.T., Lauterbach, A.A., Dingle, M.P., Boardman, A.G., Urbach, J.E., Leko, M.M., Benedict, A.E. & Park, Y. 2014. Individual and contextual factors influencing Special Education teacher learning in literacy learning cohorts. *Learning Disability Quarterly*, 37: 31-44. https://doi.org/10.1177/0731948713487179

Carrim, N. 2022. 4IR in South Africa and some of its educational implications. *Journal of Education*, 22: 3-20. https://doi.org/10.17159/2520-9868/i86a01

Capodieci, A., Cornoldi, C., Doerr, E., Bertolo, L. & Carretti, B. 2020. The use of new technologies for improving reading comprehension. *Frontiers in Psychology*, 11: 1-9. https://doi.org/10.3389/fpsyg.2020.00751

Castillo-Montoya, M. 2016. Preparing for interview research: The interview protocol refinement framework. *The Qualitative Report*, 21: 811-831. https://doi.org/10.46743/2160-3715/2016.2337

Creswell, J.W. 2013. *Qualitative inquiry and research design: Choosing among five approaches,* 3rd ed. Sage: California.

Dalton B. & Grisham, D. 2022. 10 ways to use technology to build vocabulary. Available at https://www.readingrockets.org/article/10-ways-use-technology-build-vocabulary [Accessed 10 June 2022]).

Dean, B.A. 2018. The interpretivist and the learner. *International Journal of Doctoral Studies*, 13: 1-8. https://doi.org/10.28945/3936

Department of Education [DoE]. 2011. *Curriculum Assessment Policy Statement (CAPS).* Pretoria: Government Printer.

Dianabasi, E.J. & Ugochukwu, E.V. 2020. Overloaded curriculum, excessive daily academic activities and students' learning effectiveness. *Journal of Education, Society and Behavioural Science,* 33*:* 69-75. https://doi.org/10.9734/jesbs/2020/v33i830252

Downes, S. 2020. Recent work in connectivism. *European Journal of Open, Distance and E-Learning*, 22: 113-132. https://doi.org/10.2478/eurodl-2019-0014

Du Plessis, P. & Mestry, R. 2019. Teachers for rural schools – a challenge for South Africa. *South African Journal for Education*, 39: s1-s9. https://doi.org/10.15700/saje.v39ns1a1774

Fajriyah, L. & Fauziyah, P. 2018. The role of ICT to develop early literacy of children in era digital. *Advances in Social Science, Education & Humanities Research*, 249: 112-116. https://doi.org/10.2991/secret-18.2018.18

Floris F.D. 2014. Using information and communication technology (ICT) to enhance language teaching & learning: An interview with Dr. A Gumawang Jati. *TEFLIN Journal*, 25: 139-146. https://doi.org/10.15639/teflinjournal.v25i2/139-164

Gajek, E. 2015. Implications from the use of ICT by language teachers-participants of international projects. *Universal journal of Educational Research*, 3(1): 1-7. DOI: 10.13189/ujer.2015.030101

Garg, R. 2021. The role of ICT in teaching and learning. Available at https://www.researchgate.net/publication/349924124 [Accessed 10 June 2022].

Glesne, C. 2016. *Becoming qualitative researchers: An introduction*, 5th ed. Pearson. Boston.

Goldie, J.G.S. 2016. Connectivism: A knowledge learning theory for the digital age? *Medical Teacher*, 38(10): 1064-1069. https://doi.org/10.3109/0142159X.2016.1173661

Govender, R. & Hugo, A.J. 2020. An analysis of the results of literacy assessments conducted in the South African primary schools. *South African Journal of Childhood Education*, 10: 1-13. https://doi.org/10.4102/sajce.v10i1.745

Gulton, S., Hutauruk, A.F. & Ginting, A.M. 2020. Teaching skills of teacher in increasing student learning interest. *Budapest International Research and Critics Institute-Journal*, 3: 1564-1569. https://doi.org/10.33258/birci.v3i3.1086

Helmers, J.R. 2017. Using technology and collaboration to support reading comprehension. Unpublished Master's thesis. Iowa: North-Western College.

Henderson, D. 2020. Benefits of ICT in education. *IDOSR Journal of Arts and Management*, 5: 51-57.

Hogenbirk, P. 2016. *ICT in education: Literacy, enhancement, and personalization 1*. UNESCO Report. (PDF) ICT in Education: literacy, enhancement and personalization 1 (researchgate.net) [Accessed 27 June 2023].

Hornstra, L., Mansfield, C, Van der Veen, I., Peetsma, T. & Volman, M. 2015. Motivational teacher strategies: the role of beliefs and contextual factors. *Learning Environment Res,*18: 363-392. https://doi.org/10.1007/s10984-015-9189-y

Howie, S.J., Combrinck, C., Roux, K., Tshele, M., Mokoena, G. & McLeod Palane, N. 2017. PIRLS literacy 2016: South African highlights report (Grade 4). Centre for Evaluation and Assessment (CEA). Available at https://repository.up.ac.za/bitstream/handle/2263/66185/Combrinck_Pirls_2017.pdf?sequence=1&isAllowed=y [Accessed 20 January 2021].

Huang, Y.N. & Hong, Z.R. 2015. The effects of a flipped English classroom intervention on students' information and communication technology and English reading comprehension. *Educ. Technol. Res. Dev*., 64: 175-193. https://doi.org/10.1007/s11423-015-9412-7

Huen, J.M.Y., Ip, B.Y.T., Ho, S.M.Y. & Yip, P.S.F. 2015. Hope and hopelessness: The role of hope in buffering the impact of hopelessness on suicidal ideation. *Plos One*, 10: 1-18. https://doi.org/10.1371/journal.pone.0130073

Hussain, Z. 2018. The effects of ICT-based learning on students' vocabulary mastery in junior high schools in Bandung. *International Journal of Education*, 10: 149-156.

Javadi, M. & Zarea, K. 2016. Understanding thematic analysis and its pitfall. *Journal of Client Care*, 1: 34-40. https://doi.org/10.15412/J.JCC.02010107

Jozwick, S.L. & Douglas, K.H. Effects of a technology-assisted reading comprehension intervention for English learners with learning disabilities. *Reading Horizons: A Journal of Literacy and Language Arts*, 56: 42-63.

Kayembe C. & Nel D. 2019. Challenges and Opportunities for Education in the Fourth Industrial Revolution. *African Journal of Public Affairs,* 11:79-94.

Killen, R. 2015. *Teaching strategies for quality teaching and learning*, 2nd ed. Juta: Cape Town.

Kwinana, A. & Mohau, P. 2019. Our Vision for South African Education. Driving Education Conversations and Solutions. Available at https://www.uj.ac.za/faculties/facultyofeducation/Documents/Edu-Kagiso-trust.pdf [Accessed 22 January 2021].

Moloi, T. & Mhlanga, D. 2021. Key features of the fourth industrial revolution in South Africa's basic education system. *Journal of Management Information and Decision Sciences,* 24: 1-20.

Munje P.N. & Jita, T. 2020. The impact of the lack of ICT resources on teaching and learning in selected South African primary schools. *International Journal of Learning, Teaching and Educational Research*, 19: 263-279. https://doi.org/10.26803/ijlter.19.7.15

Ntsala, S.A., Koen, M., Ramabenyane, M.J. & Loock, I. 2021. Addressing the challenge of over-crowdedness in English First Additional Language (EFAL) classrooms. *Journal for Language Teaching*, 55: 151-173. https://doi.org/10.4314/jlt.v55i1.7

Nieuwenhuis, J. 2020. Introducing qualitative research. In: K. Maree (Ed.). *First steps in research,* 3rd ed, pp.117-153. Pretoria: Van Schaik.

Oke, A. & Fernandes, F.A.P. 2020. Innovations in teaching and learning: Exploring the perceptions of the education sector on the 4th industrial revolution (4IR). *Journal of Open Innovation: Technology, Market, and Complexity*, 6: 1-22. https://doi.org/10.3390/joitmc6020031

Olatoye, O.I.O., Nekhwevha, F. & Muchaonyerwa, N. 2021. ICT literacy skills proficiency and experience on the use of electronic resources amongst undergraduate students in selected Eastern Cape Universities, South Africa. *Library Management*, 42: 471-479. https://doi.org/10.1108/LM-08-2020-0118

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

Parenti, M.A. & Chen, X. 2015. Growing reading fluency: Engaging readers with technology and text. *Manager's Journal on School Educational Technology*, 10: 1-6. https://doi.org/10.26634/jsch.10.4.3414

Picciano, A.G. (2017). Theories and frameworks for online education: Seeking an integrated model. *Online Learning*, 21(3), 166-190. https://doi.org/10.24059/olj.v21i3.1225

Rahman, M.S. 2017. The advantages and disadvantages of using qualitative and quantitative approaches and methods in language "Testing and Assessment" Research: a literature review. *Journal of Education and Learning,* 6: 102-112. https://doi.org/10.5539/jel.v6n1p102

Richards, K.A.R., Hemphill, M.I. & Templin, T.J. 2018. Personal and contextual factors related to teachers' experience with stress and burnout. *Teachers and Teaching*, 24: 768-787. https://doi.org/10.1080/13540602.2018.1476337

Salinas, D. 2017. EFL Teacher Identity: Impact of Macro and Micro Contextual Factors in Education reform frame in Chile. *World Journal of Education*, 7: 1-11. https://doi.org/10.5430/wje.v7n6p1

Schwab, R. 2017. *Fourth Industrial Revolution*. New York: Crown Business.

Siddiquah, A. & Salim, Z. 2017. The ICT facilities, skills, usage, and the problems faced by the students of higher education. EURASIA *Journal of Mathematics, Science and Technology Education*, 13: 4987-4994. https://doi.org/10.12973/eurasia.2017.00977a

UNESCO. 2007. *UNESCO ICT in education programme: ICT to develop literacy*. Unesco Bangkok.

Western Governors University. 2020. Top qualities and skills of a good teacher. Available at https://www.wgu.edu/blog/top-qualities-skills-good-teacher2001.html#close [Accessed 19 September 2022[.

Western Governors University. 2021. Connectivism Learning Theory. Available at https://www.wgu.edu [Accessed 19 September 2022].

Willenberg, I. 2018. South Africa's reading crisis: Focus on the root cause, not the peripherals. Available at https://theconversation.com/south-africas-reading-crisis-focus-on-the-root-cause-not-the-peripherals-96129 [Accessed 10 June 2022].

Zanin, A.C. & Bisel, R.S. 2018. Discursive positioning and collective resistance: How managers can unwittingly co-create team resistance. *Management Communication Quarterly*, 32: 31-59. https://doi.org/10.1177/0893318917717640

Zapata-Barrero, R. & Yalaz, E. 2018. *Qualitative research in European migration studies*. Cham: Springer Nature. https://doi.org/10.1007/978-3-319-76861-8