Journal of Education, 2023
Issue 91, http://journals.ukzn.ac.za/index.php/joe doi: http://dx.doi.org/10.17159/2520-9868/i91a01

The use of information and communication technology in the teaching of Sesotho as a home language

Naledi Filita

Department of Languages in Education, Faculty of Education, University of the Free State, Bloemfontein, South Africa
filitanj@ufs.ac.za
https://orcid.org/0000-0003-3402-8581

Thuthukile Jita

Department of Curriculum Studies and Higher Education, Faculty of Education, University of the Free State, Bloemfontein, South Africa
JitaT@ufs.ac.za
https://orcid.org/0000-0002-1173-5251

(Received: 28 February 2022; accepted: 3 March 2023)

Abstract

This paper focuses on the use of information and communication technology (ICT) in the teaching of Sesotho as a home language. It seeks to answer the questions, "What causes poor adoption of the use of ICT to teach Sesotho in secondary schools?" and "What should be done to promote more effective adoption of ICT in the teaching of Sesotho as an indigenous language?" The study employed a qualitative approach. A sample of 12 teachers was drawn to participate in the study, with the sampling design adopting a multi-stage sampling technique. Our findings indicated there is poor adoption of ICT in the teaching and learning of Sesotho among some South African secondary schools. This poor adoption may be explained in terms of a lack of ICT training among teachers and a shortage of resources in schools. In line with these findings, we recommend that the Department of Basic Education capacitates schools by continually training, motivating, and resourcing teachers.

Keywords: information and communication technology (ICT), school quintiles, Sesotho, social constructivism

Introduction

Over recent years, information and communication technologies (ICTs) have become operative in educational settings, drastically changing and developing the teaching and learning environment (Khan et al., 2012). In the past, teaching and learning depended on materials such as textbooks, chalk, and boards. Today, the situation has changed significantly, especially in the mainstream learning areas such as science, technology,

engineering, and mathematics. The drive to embrace ICT-based instruction internationally arose from the need to respond to the pressure to modernise instructional practices that have gripped most education systems. More recently, pressure from the Covid-19 pandemic and the subsequent need to adjust to a new normal have also provided impetus for schools to embrace ICT-based teaching and learning methods. However, it should be appreciated that for ICT to be effectively integrated into teaching and learning, schools should be adequately resourced and teachers appropriately trained and motivated to embrace this new approach to instruction.

School resourcing and teacher capacitation to embrace ICT-based methods of instruction

It is not by default but rather by design that in South Africa, the Department of Basic Education (DBE)—formerly, Department of Education (DoE)—adopted the goal of promoting e-schools (DoE, 2004). In line with this goal, "the Department will determine and revise regularly the basic ICT tools in each institution to ensure equity and guide schools in the implementation of ICT-based teaching/learning" (DoE, 2004, p. 18). Clearly, the Department was making a conscious effort here, at least on paper, to promote ICT-based instruction. However, it is not clear whether schools and teachers across the social divide have been truly and adequately resourced, motivated, and hence capacitated to fully adopt, embrace, and integrate the e-school model into the teaching of Sesotho as an indigenous language. To the best of our knowledge, no research has been carried out focusing on the adoption of ICTs by teachers in the teaching of Sesotho.

There is thus, an opportunity for educational researchers to identify the status quo on the use of ICT in the teaching of indigenous languages, and to assist those schools that are lagging to access ICT tools and develop teacher capacity to embrace ICT-based instructional practices. In this way, the e-school goal of the DBE could be achieved as the teaching and learning of indigenous languages became more effective, especially during the current post-Covid-19 era and consequent need to adjust to the new normal. In the context of this study, there is also a prima facie case for establishing whether schools that are teaching Sesotho, and the teachers who teach the subject, have been adequately capacitated to teach this important subject using ICT-based interventions. Our interest in this topic arises from the view that given the emphasis that is placed on, for example, science, technology, engineering, and mathematics (STEM) subjects and languages such as English and Afrikaans, the danger may exist that a subject such as Sesotho may end up being overlooked. According to Moodley and Dlamini (2021):

> The need to promote the status of indigenous African languages has been driven through acts and policies of Government, which were formulated at the birth of South Africa's democracy, however, the enactment of these policies has not been effective in various fields including education. (p. 8)

The assumption here is that Sesotho, like any other subject, should be taught effectively and efficiently. However, it is not clearly understood how teachers across our schools use ICT-

based methods to teach Sesotho. It is for this reason that this study sought to explore the use of ICT in the teaching of Sesotho as a home language.

According to the South African Schools Act (Republic of South Africa, 1996), the DBE classifies schools into quintiles based on the socioeconomic status of the community that each respective school is intended to serve. Factors such as the surrounding infrastructure, availability of water, sewage, and communication networks, and the number of homes in the area made from brick, wood, and iron sheeting, respectively, are considered when categorising schools into quintiles. Schools are ranked from Quintiles 1 to 5. Quintile 1 comprises schools in the poorest areas, and Quintiles 4 and 5 comprise schools in the wealthier communities. The schools in Quintiles 1 to 3 are no-fee paying schools and are wholly funded by the government. On the other hand, the schools in Quintiles 4 and 5 are fee paying schools that are only partially subsidised by the government. It is not clear if this division of schools into quintiles has any ramifications on the extent to which teachers are resourced and motivated to use ICT when teaching. In addition to this, the literature is silent on how teachers embrace ICT-based methods of instruction in the teaching of Sesotho as an indigenous language.

Practically, the e-schooling policy as promoted by the DBE applies to all schools in the country regardless of their socioeconomic status, the quintile class to which they belong, and the subjects taught. The assumption here is that all these schools will be properly resourced and teachers adequately trained and resourced, both materially and financially, to be able to teach Sesotho using ICT interventions. The issues of availability and adequacy of ICT resources and infrastructure that promote the integration of ICTs into the teaching of Sesotho in South Africa have not been fully explored. This study sought to close that gap by exploring the extent to which teachers in South Africa have been trained, resourced, and therefore capacitated to embrace ICTs in the teaching of Sesotho as one of the indigenous languages of the country. The study sought to answer the following research questions: "What causes poor adoption of the use of ICT to teach Sesotho in secondary schools?" and "What should be done to promote more effective adoption of ICT in the teaching of Sesotho as an indigenous language?"

The status of indigenous languages in South African schools

Sesotho is one of South Africa's 11 official languages in South Africa. Specifically, Sesotho is the language spoken mainly in the Free State province and in the southern parts of Gauteng in South Africa. Despite living in the democratic era, South Africans continue to experience inequality in terms of the status given to the languages in the country. Ndebele (2018) argued that "the status quo that prevailed during the colonial and apartheid-era featuring the dominant high status of colonial languages, versus low status of indigenous African languages remains the same in South Africa" (p. 93). In addition, Gumbi (2018) affirmed that African languages are still neglected in terms of their value in the basic education sector, with no exception to the use of ICT in the teaching and learning of these languages.

Literature review

Alkamel and Chouthaiwale (2018) performed a literature review of English language teaching and learning, and their findings showed that using resources such as images, animations, and audio and video clips enhanced the teaching and learning of the language. Those authors further stated that such ICT tools are reliable for producing, preparing, and storing teaching and learning materials. Nikolopoulou et al. (2019) conducted a study on early reading skills in English as a foreign language via ICT in Greece. One of their most reported findings in relation to skills and strategies was that the teachers used computers (high percentage of agreement, over 70%) in their classrooms for the extension of children's vocabulary and the motivation of children to read and like reading. Alkamel and Chouthaiwale (2018) conducted a study in India focusing on the positive effects of ICT in order to keep up with modernised communities in the current digital world. Their findings indicated that ICT enables English foreign language learners to discuss information in real time on various blogs, work together on projects, and search for information. Those authors mentioned that using ICT in foreign language teaching contributed to assisting both the teachers and the learners to adapt to the modernised world, which is full of new technological demands. Contrary to the above literature, in South Africa, Moodley and Dlamini (2021) conducted a study on the experiences and attitudes of Setswana-speaking teachers with regards to using an indigenous African language on an online assessment platform. The findings of their study indicated that accuracy of translation played a significant role in adopting and using Teacher Assessment Resources for Monitoring and Improving Instruction (TARMII) software in an African language. Their participants indicated that the use of ICT is more effective in English than in African languages because the latter are not intellectual and developed enough to be used in ICT.

Although the above studies contribute to the study of the use of ICT to teach languages, the causes of poor adoption of ICTs to teach Sesotho in secondary schools in South Africa are not fully known. Apparently, the norm is to teach English and Afrikaans using ICT-based and -supported instructional methods, both in South Africa and beyond (Rank et al., 2011). According to Ndebele (2018), English is still a dominant language in ICT and ICT-based learning resources, at the expense of the indigenous African linguistic heritage. This dearth of electronic indigenous-language resources on the internet may also be true of Sesotho, although the real situation on the ground was not clearly discussed. Specifically, the causes of poor adoption of the use of ICT to teach Sesotho in secondary schools, and what should be done to promote a more effective adoption of ICT in the teaching of Sesotho as an indigenous language, have not been fully investigated. The present study therefore sought to close this gap by focusing on the causes of poor adoption of the use of ICTs to teach Sesotho as an indigenous language in South Africa. Theoretical framework

The study is guided by the social constructivism theory of Lev Vygotsky. The social constructivism theory is a philosophical framework premised on the view that the reality that we perceive as human beings is socially constructed (Vygotsky,1978). This theory holds that people construct new knowledge based on their prior knowledge as filtered through their

interaction with factors within their organisational ecosystems (Koohang et al., 2009). Vygotsky developed two concepts, namely, the zone of proximal development (ZPD) and scaffolding. "Based on the concept of ZDP, Vygotsky believed that rather than seeing intelligence as something to be measured in isolation, intelligence was better understood as what a learner could do with skilled help" (Cameron, 2001, p. 6). Even though, at first, learners may rely heavily on the help of others, they do gradually shift towards greater independence as they acquire skills and knowledge for themselves. The second concept of scaffolding refers to support that is designed to provide the assistance necessary to enable learners to accomplish tasks and develop understanding that they would not be able to manage on their own. Through these two concepts, Vygotsky has encouraged learner-centred practices in the classroom, where learners construct their own knowledge while the teachers facilitate and provide support during the process. This means learners learn "through actively constructing or creating their own subjective representations of objective realities" that they seek to understand (Lachica, 2015, p. 3), and in which ICT could play a pivotal role in enhancing Sesotho. The DBE (2013) has affirmed that ICT can change a teacher's pedagogical practices from the traditional to more task-orientated practices, thereby assuring meaningful and authentic learner learning that results in the improvement of Sesotho. It is, however, not clearly understood whether schools have been properly resourced, and teachers appropriately trained, to adapt ICT-based methods in the teaching of Sesotho. It is against this background that social constructivism is embraced as a theoretical lens for understanding and explaining the issues at stake in this study.

Methodology

The research paradigm that underpinned the study is interpretivism. Ryan (2018, p. 9) argued that interpretivism upholds that "truth and knowledge are subjective, as well as culturally and historically situated, based on people's experiences and their understanding of them." The study adopted a qualitative research design (Creswell, 2014), whereby data were collected using semi-structured interviews and document analysis. Document analysis was used to collect data from two data sources, namely, lesson plans and policy documents used in schools. The lesson plans analysed in the study were supplied by 12 teachers who were purposively drawn from the population of interest. The lesson plans were examined to establish whether the teachers integrated ICT into their practices. Teachers who taught Sesotho had their plan of work further selected for detailed analysis. We purposively selected teachers who taught Sesotho at the secondary school level, that is, Grades 8 to 12. The sample represented different types of schools in a South African context, from Quintiles 1 to 4.

Purposive sampling was used to yield a sample of both Sesotho language teachers and schools to participate in the study. This sampling technique ensured that information-rich participants participated in the study. Lesson plans were examined to establish whether the teacher participants integrated ICT into their practices. Participants whose plan of work indicated integration of ICT into their teaching were selected for further participation in the study by taking part in interviews. One teacher per quintile from Quintiles 1 to 4 was

purposively selected to participate in interview discussions with the researchers. The interviews were tape-recorded. We also took field notes during the interviews. The study sought to answer the following questions: "What causes poor adoption of the use of ICT to teach Sesotho in secondary schools?" and "What should be done to promote more effective adoption of ICT in the teaching of Sesotho as an indigenous language?"

Ethical issues were taken into consideration when conducting the study. This included carrying out the study after ethical clearance had been secured. Permission to carry out the study in the district and selected schools was also granted by the provincial DoE. Consent forms were given to the participants to sign, which meant that research participants were given the opportunity to make an informed decision regarding their participation in the study (de Vos et al., 2011). To ensure privacy and confidentiality of data sources, the district, research sites (schools), and research participants' real names are not mentioned in this study. Instead, pseudonyms are used. This practice is supported by Yin (2018), who emphasised the need for best practices in research. Thematic analysis was used to analyse the data. Through the data analysis process, data were read, coded, and categorised into themes. Member checking was employed to ensure validity in the study. Data were sent to the participants before it was used in the study to confirm accuracy (Creswell, 2014).

Findings and discussions

This section presents the findings of the study. First, we present findings concerning the availability of ICT resources in the schools that participated in the study and second, on teacher training on the use of ICTs in the teaching of Sesotho.

Availability of ICT resources in the school ecosystem

The first question upon which the study was anchored was: "What causes poor adoption of the use of ICT to teach Sesotho in secondary schools?" Data relating to this question are presented in this section.

Participant 1 (Quintile 1) indicated that there was a lack of resources available at his school:

> I am not using much of the ICTs, as we speak, due to lack of school-owned devices, devices that belong to schools that you can always carry to class to use.

Participant 1 continued to discuss the available ICT resources at his school:

> Well, my school has a computer centre, but we don't have access to the centre. The only things that we have that we can borrow from the clerks are projectors.

Participant 2 (Quintile 2) mentioned that his school has projectors, laptops, printers, and copying machines and the internet. This is what he said:

> Most of the laptops that we have in our school are used by people who teach science, especially mathematics. Then, the desktops are used mostly by admin clerks. The only

> time that we have to use laptops is when we use our personal laptops, and we mostly use them at home. The internet at school is only reserved for administration purposes, and for teachers who teach mathematics only. But as for us who are teaching geography and Sesotho and other subjects, we are finding it very much difficult to have internet access, *o a bona* [you see].

Unlike Participants 1 and 2, the school where Participant 3 (Quintile 3) worked was a little more advantaged in terms of availability of ICT resources. Participant 3 said:

> In our school, there is a computer lab, which we can use if we make booking arrangements on time to avoid clashes. We also have a few classes with projectors; the internet is available, printers and photocopy machines are available for use.

Participant 4, on the other hand, was from an even better resourced school (Quintile 4) and had access to many more ICT resources. This is what he said:

> Well, we have quite a number of ICTs here. To list them: We have . . . printers and photocopy room with machines, projectors in most classes, ehh . . . we have both whiteboards and chalkboards, the computers are available, and we can also have access to the laptops upon request through the HODs [heads of department]. The school also has the internet, and we can also teach in the computer lab where the tablets are also available for use.

The first finding in this regard is that although there is so much emphasis on the importance of ICT integration for teaching in South Africa, there is unequal distribution of ICT resources among schools in the country. This finding is in line with Jita and Munje (2020), who observed:

> Despite the desire [by various stakeholders] to ensure that ICT emerges as a game-changer in the South African education system, the pace of integration in some school contexts is slower than expected. (p. 266)

Data in the present study seem to show that lower quintile schools generally lack the needed resources for building e-schools and hence embrace ICT-based teaching. However, schools in the higher quintiles seem to have more access to ICT resources. The lesson plans of teachers in Quintile 4 showed more evidence of ICT integration into their classroom practices than those of teachers in Quintiles 1, 2, and 3. This may be because schools in Quintile 4 are more equipped with ICT tools than those in the lower quintiles.

This view is in line with Hennessy et al. (2010), who argued that the effective introduction of technology into schools requires that ICT resources (such as computers, mobile devices, internet connectivity, etc.) be accessible. In addition, Vygotsky's social constructivism theory proposed that cultural tools such as computers and other technologies enable the development of children's learning process (Dong & Newman, 2018; Pea, 1993). In recent years, these cultural tools have included technological tools such as social media, computers, digital technologies, and so forth (MacBlain, 2018), which are needed to enhance the teaching and

learning of subjects such as Sesotho. These ICT resources activate the scaffolding process given that its purpose is to regularly delegate learning duty to the student.

Data in the present study seem to show that government-funded schools in South Africa lag behind the fee paying schools in terms of access to ICT resources that can be used for instruction. This reality seems to explain why there is so much variation in the use of ICT in the teaching of Sesotho across schools in South Africa.

Teacher training on the use of ICTs in the teaching of Sesotho

The second question on which this study was premised was: "What should be done to promote more effective adoption of ICT in the teaching of Sesotho as an indigenous language?" In addressing this question, participants were asked if they had received training on the teaching of Sesotho using ICT. This section discusses their responses.

Participant 1 indicated that he had not received any form of training to teach Sesotho using ICT. He said:

> Not in any way whatsoever. There has not been any form of training.

The participants explained how they had acquired the knowledge to teach Sesotho using ICT even though they had not received training to do so. This is what the other participants said:

> I went for the Internet Broadcast Project [IBP] trainings. So, I used what I have learned in geography training and then I apply that knowledge to the teaching of Sesotho. I use the knowledge in searching and compiling the needed content and then in using the content to teach using the ICT-based tools. . . . Not only that, I also apply my ICT skills that I gained during my university years . . . I mean, during my training as a teacher. (Participant 2)

> Well . . . I received training for ICT-based teaching in some subjects other than Sesotho through the many in-service workshops that I have attended. Of course, the trainings are not specifically on the use of ICT in the teaching of Sesotho home language. So, I have to use the knowledge gained through training in other subjects and try to incorporate it into the teaching of Sesotho. At university, we were also taught ICTs, even though it was not specifically for the teaching of Sesotho. (Participant 3)

> The Department of Education gave us a resource person from within the district. This person is moving around the Free State, reaching all the five schools that are classified as smart schools in the district. So, because we have been identified this way, this person normally also comes here to give us training when there are new programmes that have been introduced to improve teaching practices by teachers. When such need arises, the resource person visits schools and arranges in order to train teachers. As teachers, we then apply this knowledge in teaching our home

> language. . . . What I mean is that this is where we also gain skills to teach Sesotho as our home language. (Participant 4)

The excerpts above show mixed feelings and mixed experiences among research participants concerning the extent to which they were trained in using ICTs in the teaching of Sesotho as home language. These differences seemed to align with the category of school of each respective participant. Participant 1 indicated that he had not received any training on the use of ICT-based interventions in the classroom. Participants 2, 3, and 4 had similar experiences, and they all alluded to having attended teacher training and development programmes from which they gained ICT skills that they transfused into the teaching of Sesotho. The training they received on ICT integration into the classroom focused on subjects other than Sesotho. However, they applied this knowledge to the teaching of home languages. This situation suggests that there is no training in the district focusing on training teachers to integrate ICTs into the teaching of Sesotho in particular. Furthermore, data presented above suggest that university education comprises part of the training that teachers view as important for integrating ICTs into their classroom practices. Data presented above further show that in some schools, the DBE is helping to train teachers to integrate ICTs into their classroom practices. However, the training does not focus on Sesotho.

The major finding in this regard is that some teachers teaching Sesotho have not received any training in using ICT resources in their teaching of Sesotho. On being asked whether they had received any training in the teaching of Sesotho, the participants responded that they had not received specific training in using ICT to teach Sesotho. This shows that some teachers of Sesotho have not received any form of training in using ICT to teach Sesotho.

Conclusions and recommendations

This study explored the use of ICTs in the teaching of Sesotho as a home language in South Africa. The purpose of the study was to unpack the causes of poor adoption in using ICTs in the teaching of Sesotho as a home language in selected secondary schools in one district in the Free State province. Our first major finding was that there are disparities in the availability of ICT resources in the schools studied. These disparities are associated with the categorisation of schools into quintiles. Schools in the higher end of the continuum (i.e. Quintile 4) seem to be more resourced in terms of ICT tools than those on the lower end of the continuum (i.e. Quintile 1). The second major finding in this study was that although teachers appreciated the importance of ICT training for purposes of teaching, there is a lack of training focusing specifically on the teaching and learning of Sesotho. Those teachers who received some form of training in using ICTs for instructional purposes received that training when learning to teach other subjects, such as geography, either through in-service training programmes or during teacher education at university.

The DBE has also assigned resource persons to train teachers in those schools identified as Smart Schools. All participants in this study appreciated the notion that ICT tools ensure effective teaching and learning of Sesotho. This is because these tools ensure that learning

processes do not completely depend on traditional methods of teaching, especially in the face of change—first, in response to modernisation and then, to Covid-19 restrictions and the subsequent need to adjust to the new normal. The greatest challenge regarding ICT integration into the teaching of Sesotho as a home language is that there are very few electronic resources on the internet. This means there are limited sources of information on the internet that are usable for the teaching of Sesotho, and which can save this endangered language from extinction.

Against the backdrop of these findings, we make certain recommendations. First, we recommend that more electronic resources in terms of reading materials should be provided and made available to teachers through the internet. Second, we recommend that teachers across all schools that teach Sesotho be trained in the use of ICT resources for the teaching of Sesotho. These teachers should also be motivated and materially resourced so that they are able and willing to embrace ICT-based methods of instruction in the teaching of Sesotho. This could be achieved through collaboration between the DBE, schools, and institutions of higher learning. The collaboration could involve ongoing training of teachers and the production of electronic resources that could be housed on the DBE's website or the websites of universities and be accessible for teachers. What this means is that all knowledgeable stakeholders in the field of Sesotho may need to be involved in the production and dissemination of learning materials for Sesotho should schools effectively embrace ICT-based instructional practices. Since the present qualitative study involved only a few schools in a single district, we recommend that a broad study be carried out to expand on the knowledge garnered through this study.

References

Alkamel, M. A. A., & Chouthaiwale, S. S. (2018). The use of ICT tools in English language teaching and learning: A literature review. *Veda's Journal of English Language and Literature (JOELL)*, *5*(2), 29–33. https://www.researchgate.net/publication/330986788_The_Use_of_ICT_Tools_in_English_Language_Teaching_and_Learning_A_Literature_Review

Cameron, L. (2001). *Teaching languages to young learners*. Cambridge University Press.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative and mixed methods approaches.* SAGE.

Department of Education. (2004). *White paper on e-education: Transforming learning and teaching through information and communication technologies (ICTs).* https://www.education.gov.za/Resources/Legislation/WhitePapers.aspx

Department of Basic Education. (2013). *The incremental introduction of African languages in South African schools: Draft policy*.

de Vos, A. S., Strydom, H., Fouche, C. B., & Delport, C. S. L. (2011). *Research at grass roots for the social science and human professions* (4th ed.). van Schaik.

Dong, C., & Newman, L. (2018). Enacting pedagogy in ICT-enabled classrooms: Conversations with teachers in Shanghai. *Technology, Pedagogy and Education*, *27*(4), 499–511. https://doi.org/10.1080/1475939X.2018.1517660

Gumbi, P. (2018). On the inconspicuousness of indigenous African languages: The case of isiZulu linguistic integration in KwaZulu-Natal's basic education sector. *Journal of Linguistic and Education Research, 1*(1), 31–43. https://doi.org/10.30564/JLER.V1I1.315

Hennessy, S., Ruthven, K., & Brindley, S. (2010). Teacher perspectives on integrating ICT into teaching: Commitment, constraints, caution, and change. *Journal of Curriculum Studies*, *37*(2), 155–192. https://doi.org/10.1080/0022027032000276961

Jita, T., & Munje, P. (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*(7), 263–279. https://doi.org/10.26803/ijlter.19.7.15

Khan, H., Hasan, M., & Clement, K. (2012). Barriers to the introduction of ICT into education in developing countries: The example of Bangladesh. *International Journal of Instruction, 5*(2), 61–80. https://www.researchgate.net/publication/281278856_Barriers_to_the_Introduction_of_ICT_into_Education_in_Developing_Countries_The_Example_of_Bangladesh

Koohang, A., Riley, L., Smith, T., & Schreurs, J. (2009). E-learning and constructivism: From theory to application. *Interdisciplinary Journal of E-Learning and Learning Objects*, *5*(1), 91–109. https://www.researchgate.net/publication/253323118_E-Learning_and_Constructivism_From_Theory_to_Application

Lachica, L.P.F., 2015. Classroom communication and ICT integration: Public high school teachers' notions. *International Journal on Integrating Technology in Education*, *4*(2), 1–11. https://doi.org/10.5121/ijite.2015.4201

MacBlain, S. (2018). Lev Vygotsky: Learning and social constructivism. In *Learning theories for early years practice* (pp. 58–62). SAGE.

Moodley, M., & Dlamini, R. (2021). Experiences and attitudes of Setswana speaking teachers in using an indigenous African language on an online assessment platform. *South African Journal of Education*, *41*(1), S1–S11. https://doi.org/10.15700/saje.v41ns1a2149

Ndebele, H. (2018). Exploring the challenges of information and communication technology localisation in South African higher education: A language management approach. *International Journal of Multilingualism, 19*(3), 368–382. https://doi.org/10.1080/14790718.2020.1717496

Nikolopoulou, K., Akriotou, D., & Gialamas, V. (2019). Early reading skills in English as a foreign language via ICT in Greece: Early childhood student teachers' perceptions. *Early Childhood Education Journal*, *47*(5), 597–606. https://doi.org/10.1007/s10643-019-00950-8

Pea, R. D. (1993). Learning scientific concepts through material and social activities: Conversational analysis meets conceptual change. *Educational psychologist*, *28*(3), 265–277. https://doi.org/10.1207/s15326985ep2803_6

Rank, T., Warren, C., & Millum, T. (2011). *Teaching using ICT: A practical guide for secondary school teachers*. Continuum.Republic of South Africa. (1996). *South African Schools Act* (No. 84 of 1996). https://www.gov.za/documents/south-african-schools-act

Ryan, G. (2018). Introduction to positivism, interpretivism and critical theory. *Nurse Researcher*, *25*(4), 41–49. https://doi.org/10.7748/nr.2018.e1466

Vygotsky, L. (1978). Interaction between learning and development. *Readings on the Dvelopment of Children*, *23*(3), 34–41.

Yin, R. (2018). *Case study research* (6th ed.). SAGE.