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Teacher Development During and Beyond COVID-19: Perspectives from Zimbabwe

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Abstract

The purpose of the study was to examine how Zimbabwean teacher educators can develop pre-service and in-service teachers to teach effectively during the COVID-19 pandemic and beyond. This qualitative study, guided by the case study method, gathered the perspectives of experienced teachers and teacher educators in schools, teacher colleges and universities in Harare. Data was generated by means of face-to-face interviews, Zoom meetings, WhatsApp and Google Talk, and it was analysed using the content analysis technique. My study found that pre-service and in-service teachers should acquire pedagogical and technological skills in addition to what they have been taught. Teacher educators as well as pre-service and in-service teachers also need information communication technology (ICT) knowledge and skills to implement blended teaching and learning, use the On-Demand Examination system, and develop and implement formative and summative assessment. Beyond the pandemic, the traditional 3-3-3 model of teacher development (i.e. 1 year, 3 school terms in college; 1 year's teaching practice; 1 year in college) will likely continue to be based on blended learning and Open and Distance eLearning (ODeL). It is recommended that technology infrastructure in Zimbabwe be upgraded to allow teacher educators, practising teachers and student teachers easy access to the internet, while also training them in ICT skills and knowledge.

Keywords: Teacher development, teacher educator, blended learning, COVID-19 pandemic

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Introduction

The COVID-19 pandemic has caused the largest ever disruption to education systems in history, affecting nearly 1.6 billion learners in more than 190 countries and on all continents (United Nations, 2020). This disruption has not spared teachers' initial and professional development around the globe. Primary school teachers who had been trained to teach children in physical classrooms before the advent of COVID-19 were not equipped to teach in virtual or online classrooms. Thus, while we socially distanced ourselves to keep one another safe, education sectors all over the world were debilitated by the enforced distancing and teachers' lack of knowledge and experience of online teaching. The researcher observed a distinct dichotomy during the 2020 lockdown: some schools and children had access to technology, reliable internet, social support and private tutors, and they continued learning, while others did not. Those children and schools that did not have access to technology fell behind. Furthermore, some educators' workload doubled as they taught virtually and in person, while many parents became teachers overnight.

Against the background of the need for teacher competencies to teach online, the purpose of my research was to explore how experienced teachers and teacher educators perceived teacher development – both during the COVID-19 era and beyond. The paper also explored development practices and accompanying teacher competencies, and investigated whether experienced teachers and teacher educators could reach consensus on these items. This paper therefore presents the background to the problem, the problem statement, objectives to be achieved, a brief literature review, the theories underpinning the study, the methodology used, a discussion of the findings reached, as well as conclusions and recommendations.

Background to the study

The COVID-19 pandemic has threatened not only the health and lives of people, but also affected teacher development, teaching and learning systems all over the world. It jeopardised the continuity of conventional learning and teaching practices, and compelled the transformation of education from traditional learning to online learning at all levels of the education sector. This left policymakers no other option but to fast-track the implementation of e-learning and distance learning mechanisms.

ISSN 2788-6298

Open and Distance eLearning (ODeL) implies that all or most of the teaching is conducted by someone who is in a different space and/or time than the student, and that content and interaction are increasingly digital in nature. ODeL also aims to include the dimensions of openness and flexibility, whether in terms of access, curriculum or other elements. ODeL systems can be described as made up of a range of components such as the following: the mission or goal of a particular system; programmes and curricula; teaching/learning strategies and techniques; learning materials and resources; communication and interaction; support and delivery systems; individuals such as students, tutors, staff and other experts; management; housing and equipment; and performance evaluation (Moore & Kearsley, 2012). The student engages in independent self-study guided by the tutor and this promotes a high degree of openness. There is freedom in this type of education as it takes into account special learning situations, learners' unique characteristics, appropriate theories and models for teaching, psycho-social aspects, as well as instructional design.

In Zimbabwe, ODeL has played a major role in teacher development. It shaped initial training for formal qualifications, in-service supplementary training for formal upgrading, and continuing in-service training in respect of particular subjects and topics. Since 1980, the Zimbabwean teacher education system has used the Zimbabwe Integrated National Teacher Education Course (ZINTEC), an ODeL mode and conventional four-year (now three-year) programme. According to the ZINTEC stipulations, student teachers were allocated a class under their sole responsibility with the school's head or deputy head playing a mentoring role (Kanyongo, 2005). The use of ODeL for teacher education therefore presented a crucial strategy for expanding teacher training, improving the quality of teaching, and preventing the spread of COVID-19. The basic purpose of ODeL has been to enable a flexible reponse to the need for working adults to obtain teacher training and to provide opportunities for those who have been most deprived by the existing provision. By using ODeL it was possible to help student teachers to continue learning during lockdowns.

Initial teacher training or teacher development programmes across the globe are similar in respect of their overall design features. Student teachers generally follow courses that teach them foundational knowledge pertaining to education, such as psychology or sociology, subject knowledge of particular study disciplines, and general and specific pedagogical knowledge. Despite these similarities in overall structure, actual curriculum content and activities of teacher

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development may differ considerably from country to country and region to region.

The unexpected change of learning and teaching mode due to COVID-19 has forced teacher educators to embrace blended teaching and learning to conform to WHO protocols, especially that of maintaining a physical distance. Ten years before the advent of the COVID-19 pandemic, Pape (2010) defined blended learning as a mode of learning that uses online communication, collaboration and publication tools to extend the school day or year and to develop the 21st-century skills students need. Garrison and Vaughan (2008) as well as Tselios et al.(2011) define blended learning as the integration of teacher-student interaction that can take place with or without the use of technology. Scholars such as Wu et al. (2010) and Lim et al. (2014) posit that blended learning is a method that combines different techniques of learning such as face-to-face and online systems to create different ways of learning. In blended teaching and learning, the in-person and online elements work together to create a richer learning experience and do not simply duplicate course content in varying formats. Thus, with blended learning, teacher trainers or developers can use online tools and resources as part of their daily training instruction. Besides employing many of the online tools and resources, many teacher trainees already use social networking. Blended teaching helps trainers find an approach that is more engaging for the current generation of teacher trainees.

The benefits of blended teaching and learning include giving trainees a variety of ways to demonstrate their knowledge, while appealing to diverse learning styles and fostering independent and self-directed learning skills in trainees. The latter is a critical capacity for lifelong learners. Garrison and Vaughan (2008) are of the opinion that blended learning increases the quality and quantity of interaction among students and teachers. This finding is supported by Dangwal (2017, p. 133) who lists the following advantages of blended learning:

- Because part of learning is done through ICT – whether in online or offline mode – teachers and students get more time in the classroom for creative and cooperative exercise.
- Students reap the benefits of online learning and computer-assisted instruction (CAI) without losing the social interaction element and human touch of traditional teaching.
- Blended learning provides more scope for communication as it completes the

ISSN 2788-6298

cycle – which is not possible if we adopt only the traditional approach.

- Students become more 'techno savvy' and they gain enhanced digital fluency.
- Students' professionalism is strengthened as they develop qualities like self-motivation, self-responsibility and discipline.
- Blended learning updates course content and so gives new life to established courses.

This then introduces the concept of a flipped classroom. Bergmannand Sams (2012, p. 13) explain that, in a flipped classroom, work that is normally done in class is flipped or switched with work normally done as homework. Surbramaniam and Miniandy (2016) suggest that a flipped classroom is a model of learning and teaching in which students read materials and view videos on the topic assigned before coming to class. They are then expected to engage in class in active learning, using games, simulations, discussions or experiments, with the assistance of the teacher.

Blended teaching and learning incorporates online tools into trainees' toolkits, which in the past consisted mainly of notebooks, paper assignments, and face-to-face classroom presentations (Kumar, 2012; Namyssova et al., 2019). This expanded toolkit helps trainees improve their higher education and better develop their teaching skills. Blended learning extends teaching and learning beyond the classroom walls by developing students' critical thinking, problem solving, communication, collaboration, and global awareness.

Technologies already in use in teacher training institutions that apply blended learning include learning management systems, in-class response systems, adaptive learning platforms, tablets, smartphones, and learning analytics. My study found that the landscape of blended teaching and learning tools and technologies is not only vast, but continuously evolving. However, the most common technology used in blended learning has been, and remains, the video.

The current research, which took place in the context of Zimbabwean teacher education colleges and university faculties of education, public/government and private primary schools in Harare and Chitungwiza, was conducted from July to September 2021. In Harare and Chitungwiza there are three teachers' colleges and five universities that have Faculties of Education. Zimbabwean teachers' colleges, universities and primary schools have a mandate to shape their education programmes in line with the key objectives set by government. Hence, teachers' colleges and primary schools

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follow the conventional teacher development and primary school learning model, where there is physical contact with teachers and children in the classroom. However, as mentioned above, the onset of COVID-19 radically changed traditional schooling to online or distance education.

Problem Statement

As COVID-19 unprecedently transformed the landscape of learning in Zimbabwe, teachers were forced to do what they do best: figure out how to effectively respond and support their students using online platforms. However, creating digital networks of school and family partnerships poses challenges to both teachers and parents, due to their limited skills and knowledge of online teaching and learning. The pandemic has amplified the need to examine the skills and knowledge that teachers will require for effective teaching during times of disaster. It is therefore critical to understand how teacher educators can provide the necessary support, systems and strategies to equip Zimbabwean initial teachers to teach effectively – now and in the wake of the COVID-19 pandemic.

Research questions

- What are the critical skills that primary school teachers in Zimbabwe need in order to teach effectively during the COVID-19 pandemic and beyond?
- How are Zimbabwean teachers' colleges and universities, training teachers to teach effectively during the COVID-19 era and beyond?
- What are the challenges faced in Zimbabwe teacher development during the COVID-19 pandemic?

Theoretical framework

The study is underpinned by two theories – the framework of technology, pedagogy, and content knowledge (TPACK) and the constructivism theory. According to Harris and Hofer (2011, p. 212) TPACK is a specialised, highly applied knowledge that supports content-based knowledge integration. Thus, TPACK comprises three knowledge types, namely pedagogy, content and technology. When these three

ISSN 2788-6298

knowledge types are applied in the classroom appropriately, they blend together and create four intersections: pedagogical content knowledge (PCK); technological content knowledge (TCK); technological pedagogical knowledge (TPK); and technological pedagogical content knowledge (TPACK). In addition, Koehler et al. (2013) posit that the development of TPACK teachers is critical for effective teaching with technology. As a framework of learning, TPACK is relevant in this study as the researcher wished to establish how teacher trainees learn and teacher educators teach technology integration in the Zimbabwe Teacher Education System.

This study is also underpinned by the constructivism theory which was developed by Piaget (1964) and has influenced various learning theories and teaching methods in education. The theory of constructivist learning explains how people can acquire knowledge and learn, and it suggests first of all that "humans construct knowledge and meaning from their experiences" (Bada, 2015, p. 66). A study on the constructivist approach in teacher preparation conducted in Uganda by Gusango et al. (2021) supports this theory of learning in teacher development. They concluded that the informed teaching of constructivists supports teaching effectiveness and promotes student learning, thus amplifying the need for reflective practice in instruction.

Constructivism is a theory of knowledge creation that argues that humans generate knowledge and meaning from an interaction between their experiences and their ideas. As a theory of learning, constructivism is therefore also relevant in this study as the researcher wished to establish how teacher trainees learn and how teacher educators teach technology integration.

Methodology used

Methodology comprises the paradigm, design, population, sampling techniques, data generation and analysis techniques used by the researcher in the study (Burns &Grove, 2003). This study was guided by constructivism as a qualitative research paradigm. The selection of the qualitative methodology is consistent with the view of Creswell (2003) who posits that qualitative methodology is a suitable methodology for a study that is linked to attitudes, perceptions, meanings and descriptions of social reality. The present study sought to examine how the teacher educators taught teachers to integrate technology in teaching and learning during the COVID-19 era and beyond. Since a case study can be of a person, family or social group in their natural setting

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(Denzin & Lincoln, 2000; Cresswell, 2003), this research was a multiple case study of Teachers' Colleges and Faculties of Education in universities around Harare.

This study furthermore used the purposive sampling technique to sample information-rich participants who would be able to give an in-depth view (Shaheen et al., 2016) of the training practices suitable for use in the COVID-19 era and beyond. Information-rich cases contain issues that are important for this research, therefore, purposeful sampling was relevant.

The category that was used for sampling the institution was the functional role of teacher training, while the categories for sampling participants were work experience and functional role. Thus, schools, teachers' colleges, and faculties of education were conveniently sampled. Convenience sampling is a non-probability sampling technique that selects easy-to-reach institutions or participants with rich information about the phenomena (Sedgwick, 2013).

In addition, the target population for this study included experienced teachers (with ten years' or more teaching experience), teacher educators (also with ten years' experience in a teachers' college) and faculty of education lecturers. I did not include deans, principals and heads of schools, mainly because they are not involved in the actual teaching.

Data was generated through an interview instrument. Due to the COVID-19 pandemic, a mixture of research tools was used, namely face-to-face interviews, email, Zoom, WhatsApp and Google Talk to generate the data. I made an appointment with the administrators of the faculty of education of three universities, two teachers' colleges, three government schools and three private schools and subsequently visited the selected institutions to get contact details (e.g. telephone number and email address) of the educators and teachers who had ten years' or more experience in their functional role. In the case of the teacher educators, I managed to get 30 names, contacted them and invited them to join the study. The educators who responded positively to this invitation were contacted again to arrange interviews. Some opted for face-to-face interviews, while some preferred to have the questions posted by their email and two educators from one university faculty preferred to have a Zoom meeting. After having interviewed16 of the educators, I concluded that a saturation point had been reached as there was no more new information from the participants.

The 18 teachers from three government schools and three private schools that had been suggested by the education faculty administrators were contacted next. It proved

to be quite a challenge to arrange appointments with these teachers because most of them did not have email addresses – only WhatsApp facilities. Despite network challenges and lack of mobile data, I managed to secure 12 appointments. However, after having interviewed six of the teachers, I realised that they were now repeating what the others had said and therefore stopped the interviewing process. She did not confirm appointments with the last four teachers since, in my opinion, the study data had already been generated until saturation point.

Data was analysed through content analysis, which,according to Hsieh and Shannon (2016),is an analysis of what was said, written and recorded. The message or answers provided by the participants constitute the content that is analysed to deduct its meaning. After I conducted each face-to-face interview or read each email containing the interview answers or Zoom meeting discussions, I wrote a script reflecting each participant's information. I read the scripts of the educators over and over so as to understand the answers, and subsequently identified and categorised the similar answers to identify a theme emanating from such answers.

The same was done with the data that had been generated from the teachers' interviews. Having reading all 24 scripts and coded and categorised the issues that emanated from the scripts,I identified the following themes:

- Pedagogies with a special emphasis on the use of technology
- Blended teaching and learning
- Challenges faced by teachers during the COVID-19 pandemic
- Challenges faced by teacher educators during the COVID-19 pandemic

Findings and Discussion

Altogether 24 participants – ten teacher educators (TE) from two teachers' colleges and six from the Faculty of Education of three universities; as well as eight experienced teachers (ET) (three from three government schools and five from three private schools) – took part in the study.

Pedagogies with a special emphasis on the use of technology

All ten teacher educators stressed the need for pre-service and in-service teachers to

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acquire pedagogical content knowledge. TE4 and TE7 made the following remark[1]: *The pre-service and the in-service teachers, to be effective in the COVID-19 pandemic era and beyond, need pedagogical knowledge with a special emphasis on the use of technology.*

This finding regarding pedagogical knowledge needs further clarification in terms of what the teacher educators are advocating for. It is therefore critical to understand the meaning of pedagogy. Siraj-Blatchford et al. (2002, p. 10) defined pedagogy as follows:

> "… the instructional techniques and strategies that allow learning to take place. It refers to the interactive process between teacher/practitioner and learner and it is also applied to include the provision of some aspects of the learning environment (including the concrete learning, and the actions of the family and the community)."

What TE4 and TE7 meant is that, while the teachers are taught learning theories and principles of teaching, the COVID-19 pandemic has shown that they will need to be taught principles and practices for integrating technology into online learning and teaching. While teachers were taught computer literacy as early as in the 1990s, they have not been taught how to function in a virtual classroom. It is therefore critical that teachers are equipped to prepare teaching materials and methods suitable for online teaching and learning. Probably the best way to do this, is if teacher educators proactively model good e-learning practices in the way they prepare student teachers.

TE3 added that *to be effective in the COVID-19 pandemic era and beyond, teachers will need pedagogical knowledge and skills that are, broad principles and strategies of physical and virtual classroom management and organisation that is beyond subject matter.*

The need for pedagogical skills to work in the virtual classroom was echoed by the experienced teachers, and ET2 said: *For us to be able to operate successfully in the virtual classroom we need additional knowledge and skills of online teaching pedagogical skills, online content skills, online design skills, online technological skills, online management and institutional skills, and online social and communication skills. We also need to have internet research skills. Skills to prerecord videos that are short and effective as well as preparing learning material suitable for online teaching and learning.*

1 Note that all participant remarks have been quoted verbatim.

ISSN 2788-6298

This finding is supported by the literature. For example, Farquhar (2003, p. 3) posits that "quality teaching is defined as pedagogical practices that facilitate for diverse children, their access to knowledge, activities and opportunities to advance their skills in ways that build on previous learning, assist in learning how to learn and provide a strong foundation for further learning". Therefore, it is critical that teachers develop skills to integrate online pedagogical skills and knowledge so as to be functional professionals in the COVID-19 pandemic era and beyond.

ET5 agreed: *If we are to be effective teachers in the COVID-19 pandemic era and beyond as teachers, we need to be competent in using: Microsoft Office (Typing speed very essential), Microsoft Word, Excel, PowerPoint, Adobe Reader, Outlook, Teams, Planning a weekly timetable, planning a weekly load, White Board.*

ET4 added: *While we were taught how to prepare schemes of work and lesson plans, in this era and beyond, teachers need more skills and knowledge in using media technology, identifying websites with suitable content and all work to be converted into a suitable format e.g. PDF. I mean teachers need skills and knowledge to research on the WORLD WIDE WEB.*

What ET4 and ET5 are saying is that, to be effective in teaching online, teachers need skills and knowledge that are beyond basic computer literacy. Since teachers have not been trained to master modern technology that helps them to easily implement computer-assisted instruction (CAI), they need to be equipped with the skills to use the computer effectively in teaching and learning. This finding is strongly supported in a study by Albrahim (2020, p. 15) who lists six categories of skills required by teachers to effectively teach online: pedagogical skills; content skills; design skills; technological skills; management skills; institutional skills. In developing the teacher education curriculum during the COVID-19 pandemic and beyond, teachers' colleges and faculties of education will need to teach these skills as a priority.

Teacher educators put forward the concept of assessment. They argued that, in addition to the assessment skills that teachers need for the traditional classroom, they must understand the concept of On-Demand Examination (ODE). TE6 said: *Both in-service and pre-service teachers as they teach online, they need to understand and implement ODE, where assessment takes place when the learner considers himself/herself ready to take an examination on one or more courses.*

The concept of ODE is supported by Okonkwo (2011) who posits that the On-Demand Examination System (ODES) is an information, communication and

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technology (ICT-based innovation that enables the assessment of students as and when they feel ready. TE9 and TE10 added that teachers will need to

- *monitor pupils' progress as they learn online;*
- *record and report comparative information about pupils' learning progress*
- *select the most appropriate procedures and instruments for assessing pupils' performance as they learn online, and*
- *carry out continuous assessment of practical work online such as reading.*

This finding is supported by scholars as an important online activity. Baht and Bhat (2019) posit that formative assessment is performed through formal and informal tasks aimed at modifying teaching and learning activities so as to improve student attainment. On the other hand, summative assessments are used to evaluate student learning, skill acquisition and academic achievement at the end of a term or semester. Thus, teacher educators need to add these skills to the curriculum to deliver teachers who are competent in the blended learning system that has been compelled by the onset of COVID 19.

Blended teaching and learning

All teacher educators agreed that teachers should continue to be developed through blended teaching and learning. The current model of one year in college, one year on teaching practice (augmented with assignments) and another year in college will continue to be applied in Zimbabwe. This means that all teachers' colleges in the country currently offer a component of Open and Distance eLearning (ODeL) when the teachers are on teaching practice. However, the prticipantsall alluded to the challenge of assessing students' teaching practice. The COVID-19 rules and regulations made it difficult for teachers to physically teach children during the lockdown periods, and thus they have missed out on teaching practice and its assessment.

TE7 said: *Those student teachers attached to private schools have been able to have teacher educators attend their Google virtual classrooms as they observed them teach. However, these are just a small number attached to few Harare and Bulawayo private schoolsthat have the facilities.*

Blended learningcombines different methods of instructional technology and

classroom teaching. At the Zimbabwe Open University (ZOU), blended learning has been carried out in several ways including (but not limited to) the following: traditional classrooms; CD-ROMs; TV; Radio; Managed Learning Environments (MLE); MicrosoftTeams; Google Talk. The blend has often involved a combination of any of the above learning methods, depending on their ability. While blended learning has traditionally been used at ZOU due to its adoption of the distance mode of teaching and learning, the level of technology use in blending learning has inevitably been increased by COVID-19. The pandemic caused a far greater increase in the use of Microsoft Teams for lectures and tutorials than it did for face-to-face lectures and tutorials.

All the teacher educators commented on the future model for teacher development during and beyond the COVID-19 pandemic and agreed that teacher training will be driven by the use of technology. TE8 argued: *To develop the teachers, teacher educators will need to create digital networks, create new educational landscape and be experts in the use of online learning and teaching tools.*

TE3 added: *Teacher educators and the teachers already in the schools being asked to teach online will need to understand the concepts of synchronous and asynchronous learning. They also need to understand how to develop instructional materials specific for online teaching and learning.*

The COVID-19 pandemic has literally forced the global village to teach not only children at all levels of schooling, but also pre-service and in-service teachers, through the model of Open Distance eLearning (ODeL). The irony of this development is that the majority of teacher educators and teachers were never trained to use the ODL or ODeL modes of teaching and learning. Open and distance learning (ODL) is the teaching and learning mode where the students may not always be physically present at the school/college/university campus. As a teaching and learning model it can comprise full-blown distance learning, or a combination of distance learning and traditional classroom instruction. Traditionally, ODL involves correspondence courses where the student is separated from the teacher and correspondence occurs via landmail. Open and Distance e-Learning (ODeL) is different from ODL because it has appropriated the modern technology of computers, the worldwide web, smartphones, tablets, conferencing, Zoom and Google Meet, which has culminated in virtual learning or e-learning. With ODeL, the teachers and students can be either at a distance or meet in the classroom, and they can use the model of computer-assisted

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instruction.

To summarise, both teacher educators and experienced teachers noted the enormity of the challenges to be faced in using the ODeL teaching and learning mode in Zimbabwean schools.

Challenges facedby teachersduring the COVID-19 pandemic

The major challenge exposed by COVID-19 and mentioned by all participants was the lack of access to the internet. As ET1 said: *Connectivity is a major challenge at schools and in the community. Most households do not have money to be connected, let alone having smart phones.* ET6 added that *the unplanned move to online classroom platform resulted in a poor user experience due to lack of training, and little preparation. Teachers do not have the online teaching skills.*

ET2 went on and rated the situation in some government schools as pathetic when it comes to online teaching and learning: *Some students were without reliable internet access and computers to use for their schoolwork. Some struggled to participate in online learning. Students from a privileged background had a computer to work on; those from disadvantaged backgrounds did not.*

Challenges faced by teacher educatorsduring the COVID-19 pandemic

The lack of technological resources was echoed by the teacher educators. TE1 remarked that *in our college there is a lack of resources (computers, WiFi, data bundles) for both lecturers and student teachers. There is also lack of computer skills by lecturers and students.*

This is a common finding, especially in developing countries (EdTech Hub & E-Learning Africa, 2020; Kilfoil, 2015).

Conclusion

It is concluded that the current model for developing both pre-service and in-service teachers in Zimbabwe will need to be adjusted to emphasise the equipping of trainees with technological and pedagogical skills for teaching online. Teachers will need to be equipped with additional skills relating to virtual classroom teaching strategies, while colleges and schools need to be equipped with modern technology and resources.

ISSN 2788-6298

Furthermore, teacher educators as well as teacher trainees will need to acquire the skills for using the ODeL model of teaching and learning – during the pandemic and beyond. That is, they will have to master the necessaryknowledge and skills to integrate ICT in blended learning and teaching.

Recommendations

It is recommended that the experienced teachers and teacher educators attend staff development activities so as to acquire the skills for developing virtual classroom teaching and learning strategies. Also, the technological infrastructure in Zimbabwe should be upgraded to allow lecturers, teachers and students easy access to internet services.

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