Incorporating new technologies into teaching in South Africa

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ABSTRACT

The constantly evolving technology landscape inevitably calls for technological integration in learning and education. It is essential in the world we live in today for every learning method to include the use of new technologies. The study’s primary goal is to examine strategies to integrate modern technologies into teaching in South Africa. The paper strives to understand the state of education in South Africa; the government’s contribution to education so far; teachers’ attitudes and competencies; as well as, and the benefits that new technologies can offer the education system in South Africa. A systematic review of literature that relates to the infusion of conventional technologies into educational settings has been adopted. The research conducted in this paper demonstrated that integrating technology into the teaching-learning process can be a useful strategy for training educators and learners for improved learning and educational outcomes in South Africa. Furthermore, the study's findings revealed that many South African instructors have a negative attitude regarding the usage of modern technologies for teaching. The paper recommended that the government should prioritize funding for education; and concluded that blended learning is best used as the instructional strategy in South African classes.

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Introduction

The top-ranked emerging economy in Africa is South Africa. The country is also included among the world's emerging economies (Grant Thornton International Limited, 2015). Like other emerging economies, South Africa is interested in closing the digital gap within its borders to use technologies in ways that would empower and transform its people. One of these projects was described in the White Paper on e-Education (Education White Paper 7, section 2.23, Department of Education, 2004), which set the deadline of 2013 for all teachers and students to be ICT proficient.

Although admirable, this objective has not yet been reached. It has been stated that one of the key causes of this was the government's predominantly techno-determinist viewpoint, which believed that the change to ICT-capable students and teachers could be achieved by just providing physical access to ICT equipment (Xiao, Califf, Sarker & Sarker, 2013). The sector where technology can have the biggest impact on achieving sustainable Development Goals (SDGs) is education (Sarker, Wu, Cao, Alam, & Li, 2019). Thus, technology is now a necessary component of the learning environment. Scherman, Howie, & Bosker, (2011) opine that, to achieve improved education for all by 2030, technology must be integrated into the educational process.

Technology has evolved into the most fundamental component of contemporary industrial society. Many African nations today highly value and accept the mastery of fundamental technological abilities and concepts (Barakabitze, Kitindi, Sanga, Kibirige, & Makwinya, 2015). Nearly all sectors of society, including education, have undergone a transition from the information era to the knowledge age as a result of the pervasiveness and rapid growth of technologies (Barakabitze, Fue, Kitindi, & Sanga, 2016; Juma et al., 2017).

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To be effective, communication must involve at least two parties - the source individual or group and the receiver or set of receivers. In the same context, teaching requires a source end and a receiving end, which are the teachers and the students respectively, for it to be complete (Ghavifekr & Rosdy, 2015). Therefore, this paper will analyze teaching and learning in relation to the integration of new technologies into education in South Africa.

The rest of the paper is structured so that the study's problem statement is covered in the following section. The third section synthesizes relevant related literature and presents the theoretical framework. The research approach is described in the fourth part. While the fifth section deal with findings and discussion, the final section concludes the study with recommendations.

The primary objective of this paper is to examine the integration of new technologies into teaching in South Africa. According to De Silva, (2021), utilizing new technologies is essential for efficient teaching and learning. Barakabitze et al. (2019) declare that innovative tactics and approaches that put teachers' successful use of technology as a tool to improve instruction and provide learning institutions with the necessary technological infrastructures should be a top concern for Africa's future. This study proffers plausible solutions to notable shortcomings that could hinder a successful integration of new technologies into teaching in South Africa.

However, the sum of resources allocated to education and teacher training generally reflects the importance put on producing qualified graduates who will fill the labour market. This is, directly and indirectly, affecting teachers in South Africa as they tend to deal with the convenience of incorporating technology into teaching in this twenty-first century (Msila, 2015). Hence, investments made in innovative technology for teaching and learning are crucial to South Africa's overall economic health and the productivity of its teachers. These are serious issues that require the utmost attention for the benefit and development of education in South Africa - hence the need for this study.

More so, numerous studies have examined the benefits of technology-based teaching and the usage of technologies in education. The same is true of technological advancement and application in both developed and developing countries educational systems. What distinguishes this research is the urge for the integration of new technologies into South Africa's educational system, which is justified by the existing situation.

A systematic literature review has been adopted in this study to provide a state-of-the-art resolution to issues involving the integration of modern technologies into teaching in South Africa. A systematic review is an analysis of previous research. Thus, it tries to compile all available data on a certain subject in order to respond to a particular research question. Systematic reviews try to locate all studies that fulfill the eligibility requirements using a rigorous search strategy, analyze the validity of the findings of the included studies, and synthesize the studies' conclusions in a systematic manner (Liberati et al., 2009).

Moreover, if researchers wish to find out the efficacy of an intervention, a systematic review is an excellent choice of review (Charrois, 2015). The foregoing, the primary purpose of this study was to examine the incorporation of new technologies into teaching in South Africa. Consequently, a substantially organised synthesis of relevant literature served as the foundation for this study's findings and conclusions.

Accordingly, for this paper to achieve its primary purpose, the following research objectives were formulated:

i. To discuss the positive effects of new technologies on teaching.

ii. To examine the attitude of teachers towards the incorporation of modern technologies in teaching.

iii. To probe the composition of the South African educational sector with respect to the incorporation of new technologies into teaching.

**Literature Review**

This section analyzes earlier research and other pieces that are pertinent to the current investigation. It gives the theoretical context for this current piece of work. More specifically, the section tries to examine, evaluate, and create familiarity with and knowledge of current research in relation to related research that has already been done.

**The Positive Effects of New Technologies on Teaching and Learning**

Domalewska (2014) illustrates the beneficial educational effects of contemporary technology for the classroom. The author makes the case that modern technology enhances and supports formal education. Technology–supported learning enables the integration of learning with cultural experiences and student requirements, and it significantly contributes to the development of independent lifelong learners who have the knowledge and abilities essential to succeed in the current, fast-changing world (Domalewska, 2014). Thus, the students of South Africa can benefit a whole lot from new technologies when effectively applied in classes.

Besides, in all educational institutions, technology appears to be accelerating the rate of educational change and promoting student-centered learning (Barakabitze et al., 2015; Barakabitze, Fue, & Sanga, 2017). It is important to note that constant exposure to technological possibilities alters learners' views. Specifically, the more positive they grow about using technology, the more probable it is that students will improve their technological abilities and be inspired to participate in more in-depth categories of learning (Barakabitze, 2014). Technology can make it easier for students to get knowledge and other teaching resources (Aduamoah, Campion,
Therefore, when technologies are properly deployed by motivated instructors, the gap between privileged and underprivileged schools can be closed.

Also, the findings of Sabancı and Ozyıldırms (2014) indicate two outcomes: (i) that when technologies and good manners are employed equally, great student behaviours become the norm. And (ii) that unwanted behaviours are probably going to reduce, and teachers can concentrate on helping students learn better when all types of educational materials utilized with and in technology are intended to satisfy students' interests and requirements.

Castano-Munoz, Duart, and Sancho-Vinuesa (2014) argue that new technologies have the potential to improve communication, and engagement can also assist students in overcoming time and space constraints. These scholars also emphasize that technology-based learning will be very effective when it is employed as a kind of in According to Sarker et al. (2019), technology aids in problem-based learning. Instead of only learning texts by heart, this learning method promotes proficiency.

With the use of technology, the flipped learning strategy focuses on enhancing interactions between students and teachers, as well as, among students themselves. In this method, students are permitted to utilize digital devices in classes to get pertinent information and related materials instead of in the classroom (Wekerle, Daumiller, & Kollar, 2022). Therefore, this educational strategy aids students in getting ready at home before classes.

Last of all, Duval, Sharples, and Sutherland, (2017) stress that there is a chance to create collaborative learning with numerous collaborative technological instruments. It can be done anytime, anywhere, anything, the authors emphasize. With the use of some communication platforms like Skype, Facebook, Google Docs, Dropbox, and the student can easily communicate with peers, teachers, and the learning community and discuss the subject under study Sharing ideas, gaining knowledge, and exchanging experiences all aid in enhancing creativity and accelerating learning. Hence, modern technologies can benefit educators, researchers, trainers, teachers, and students - all in one platform.

The Attitude of Teachers towards Incorporation of Modern Technologies in Teaching in South Africa

Teachers' attitudes and beliefs play a significant role in predicting the use and integration of contemporary technology in teaching and learning. The findings of Nibalema's (2014) investigation of teachers' attitudes toward adopting contemporary technology as pedagogical tools show that teachers are not aware of the potential of contemporary technologies in their instruction.

Additionally, earlier research by Apiola, Kristiina, Saila, and Matti (2012) found that among new ICT students and teachers in most African countries, the preference for teacher-centric instruction, memorization as a method of self-study, and discouragement of critical thinking are quite typical attitudes. It is important to note that successful leadership is a crucial component of any innovation and incorporation of contemporary technologies in education, particularly in the African region.

Sherman, and Howard (2012) identified several first and second-order impediments to educational technologies integration in Western Cape schools. Teachers' lack of awareness of the importance of instructional technologies in teaching and learning was one of the secondary hurdles to educational technologies integration. Therefore, it is crucial to enlighten instructors about educational technologies and the advantages of using them in the classroom.

According to Govender and Govender (2009), just 15% of teachers used computers for instruction, despite having access to them, and 68.1% lacked fundamental computer literacy. Furthermore, in disadvantaged communities in the Western Cape, Chigona, Chigona, Kausa, and Kayongo, (2010) conducted in-depth interviews with three principals and nine educators from three separate schools. They discovered that most teachers only made limited use of the technologies that were accessible because teachers were hesitant to utilize it since they were never sure, that it would truly work when the time came to use it. The elements influencing the integration of educational technologies in schools were examined by Nkula and Krauss (2014). They contend that successful integration of educational technologies depends on matching instructor attitudes with their use.

In research, Howie (2010) found that South African schools were provided with technology regardless of whether they wanted it or not, unlike schools in nations that have successfully incorporated new technologies into teaching and learning where, if they wanted technology, schools had to present a thorough plan for how they would use it. This simply emphasizes how important teachers' input is when integrating instructional technologies.

Thus, the purpose of this study was to explore the integration of new technologies into teaching in South Africa. The study also considered to what extent teachers' attitudes and the current education structure in South Africa affect the primary objective of the subject matter of this research.

South Africa's Education and Modern Technologies in Teaching & Learning

Despite the potential of modern technologies for teaching and learning, many educational institutions in Africa only have a few ICT facilities, such as a few computer laboratories with a small number of computers and a meagre electrical supply (Mathevula & Uwizeyimana, 2014). To solve the issue of Africa's poor coverage of telecommunication services, governments all over the continent established a Universal Service Fund (USF). Additionally, the USF's capacity to accomplish its goals is hampered by a lack of
accountability, inadequate ICT stakeholder participation, the limited reach of universal service, and improper political interference (Arakpogun, Wanjiru, & Whalley, 2017).

In South Africa, for instance, integrating new technology into education is not given the same priority as other goals like raising enrollment rates, lowering the percentage of children who are not enrolled in school, and ensuring that there are enough qualified teachers. In addition, many African nations are integrating new technologies into education very slowly due to a variety of issues, such as a lack of formal policy, funding, enough infrastructure, and qualified teachers (Mathevula & Uwizeyimana, 2014).

Below are statistical data, key indicators, and problems that validate the need to incorporate new technologies into teaching in South Africa.

**Indulgence in Learning and Department of Basic Education (DBE) Matric Results**

The General Household Survey (GHS) 2018 by Statistics South Africa (STATS SA) as reported by South African Market Insight carried out in 2019 detailed that 15% of children aged 5 years old were not in education; 54.2% of children aged 5 years old were in primary school; and 30.25% of children aged 5 years were in pre-school. 45.7% of youth aged 19 years were not in school nor in any form of technical and vocational education and training (TVET); 41.4% of youth aged 19 were still attending secondary school (high school), and only 6.4% at age 19 were enrolled in university.

![Figure 1: Percentage of Youth in South Africa in various Educational Facilities from age 5 to 24](image)

It was recorded that the department of basic education (DBE) class of 2019 achieved a pass rate of 81.3%, up from 78.2% recorded in 2018. In 2017, a total of 1,052,080 learners were enrolled in grade 10, and only 409,906 learners passed matric in 2019. As was documented, and shown by the figures and map below, only 44.55% of prospective matriculants passed with grades high enough for admission to bachelor’s degrees.

**Access to Funds and Youth Unemployment**

Two of the basic economic indicators of any country are access to education and employment rate. Access to education can be affected positively or negatively by the availability of funds to cater to school and learning needs. The employment rate plays a major role as this affects the availability of funds and the dependency rate of the entire population (Grant 2017). Put down by South African Market insights in 2019, as written by Statistics South Africa (STATS SA) in its report titled “Higher Education and Skills in South Africa,” more than half (51%) of youth aged 18-24 claimed they did not have financial means to pay for their tuition.

Furthermore, 18% of those aged 18-24 who were not attending educational institutions indicated that their poor academic performance prevented them from participating. The report, which uses data from General Household Survey (GHS) 2017, indicates only 33.8% of youth aged 18-24 were attending educational institutions. Among those 22.2% were attending school while 11.6% were attending post-school educational institutes.

Gender disparity still loomed despite the uptrend in the participation rate as also the problem of participation equity for students from low-income backgrounds. Female participation in 2016 at public higher educational institutions (universities) was 58% and 57% at
TVET colleges. Most students were enrolled in undergraduate National Qualification Framework (NQF) level 7 programs at universities.

The report further states that the number of graduates from public higher universities more than doubled from 92,874 in the year 2000 to 203,076 in year 2016. The number of graduates from TVET and private colleges stood at 135,492. The higher education system still has challenges in terms of success rates and poor completion rates. Many students drop out without completing a qualification. About 47% of youth aged 20-24 years who held bachelor’s degrees or qualifications equivalent to NQF level 7 came from the highest household income quintile. Only 7.4% of youth who held qualifications equivalent to NQF level 7 came from the lowest household income quintile. Around 36% of youth holding postgraduate degrees or qualifications equivalent to NQF level 8-10 came from the highest household income quintile.

**Nature of South African Capital Expenditure in the Education Sector**

A report by Statistics South Africa (2018) titled “Higher Education Continues to cut Capital Spending,” states that capital expenditure by South Africa’s higher education institutions has continued to fall, for the second consecutive year. It states that the country’s 20 universities and 6 universities of technology recorded a 5.4% drop in capital expenditure in 2017 compared to 2016, which spiraled downward from R6.22 billion to R5.89 billion. This followed a 0.7% drop in 2016.

According to Grabowski, Oztanriseven, and Franklin, (2022), capital expenditure is the money spent by an institution or organization to acquire, maintain, or upgrade fixed assets (buildings, land, equipment, vehicles, and furniture). These Long-term assets generally enhance the operating capacity and efficiency of the institution. They usually have a life span longer that a single accounting period. The 5.4% drop in 2017 was largely a result of decreased spending by the University of Witwatersrand (Wits), the University of South Africa (UNISA), and Walter Sisulu University. These three institutions spent less on buildings, transport equipment, office furniture, and other machinery and equipment.

The report states that the biggest spenders on fixed assets in 2017 were the University of Pretoria which took the lead, contributing R738 million (13%) to total higher education capital expenditure. Stellenbosch University and the University of Mpumalanga took second with (10%) and third (9%) spots respectively. The report further states that the bulk of capital expenditure (63%) was directed toward the construction and maintenance of buildings such as laboratories, lecture halls, and residences.

**The Priority is given to Basic Education in the Budget of South Africa**

A report by UNICEF titled “Education Budget Brief South Africa” (2018) states that the share of basic education in total government expenditure is reduced from 16.8% in 2014/2015 to 16% in 2020/2021. In terms of the Education for All (EFA) international spending benchmark, consolidated education which includes basic education, technical colleges, and the higher education sector consumes between 21% and 23% of total government spending over the period, 2014/2015 to 2020/2021.

According to the report, South Africa meets the international benchmark for spending (as a % of GDP and a % of total government expenditure), it further states thus: this does not imply that such spending is adequate or that the country has successfully translated input gains into recognized achievement goals. This is depicted in Table 2 below.
Table 1: State of Basic Education Spending in South Africa as Reported by UNICEF

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014/2015</td>
<td>16.8%</td>
</tr>
<tr>
<td>2015/2016</td>
<td>16.3%</td>
</tr>
<tr>
<td>2016/2017</td>
<td>16.7%</td>
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<tr>
<td>2017/2018 (revised estimate)</td>
<td>16.7%</td>
</tr>
<tr>
<td>2018/2019 (MTEF)</td>
<td>16.5%</td>
</tr>
<tr>
<td>2019/2020 (MTEF)</td>
<td>16.1%</td>
</tr>
<tr>
<td>2020/2021 (MTEF)</td>
<td>16%</td>
</tr>
</tbody>
</table>

Teachers’ Perspective and Blended Learning

The teachers are another center of focus in considering how new technologies can be incorporated into teaching in South Africa. Since educators’ roles included more than just imparting information and knowledge, students still require their physical presence in the learning process since they also serve to develop character and teach students how to better understand and navigate life. Technologies cannot take the place of teachers in the crucial duty of serving as role models for students. Therefore, the optimal learning program to be applied in South African schools is a blended learning program.

Ostrowick (2018) outlined five levels of ICT teacher professional development namely Entry, Adoption, Adaptation, Appropriation, and Innovation levels. Ostrowick (2018) further explains thus:

(i) Entry level: The teacher is computer literate and can use computers. However, frustrations and insecurities are common in the introduction of ICT.
(ii) Adoption level: The teacher can use various ICTs, including computers, to support traditional management, administration, teaching, and learning, and is able to teach learners how to use ICT.
(iii) Adaptation level: The teacher can use ICT to support everyday classroom activities at an appropriate teaching level, assess the learning that takes place and ensure progression.
(iv) Appropriation level: The teacher has a holistic understanding of the ways in which ICT contributes to teaching and learning.
(v) Innovation level: The teacher can develop entirely new learning environments that use ICT as a flexible tool so that learning becomes collaborative and interactive.

The lack of these factors poses a barrier to the successful incorporation of new technologies into teaching. Jantjies (2019) maintains that teacher training is among the five things South Africa must get right for modern technologies in schools to work. The author asserts that it is not a once-off process. It must be continuous and further maintains that many of the teachers in the education system received very few or no technology infused learning experiences while they were studying.

Sherman and Howard (2012) maintain that while barriers to teachers’ ICT use, in general, are fairly well studied in the developed world and in technology-rich environments in non-Western settings (Tondeur, Hermans, van Braak, & Valcke, 2008), only a few studies have examined barriers in South African schools, the first-order barriers identified by researchers working in South African schools (Chigona & Chigona, 2010; Fanni, Rega, Van Zyl, Tardini, & Cantoni, 2010) include: Low technical capabilities; limited access to computer labs created by strict timetables and high student-computer ratios; inadequate technical support and school policies.

As for the second-order barriers, Sherman, and Howard (2012) state that regardless of previous training, teachers’ belief in their personal capacity to teach effectively with computers may be a crucial determinant of whether they use ICT. Teachers’ attitudes and beliefs about technology have been shown to influence the use of ICT in their classrooms. In relation to second-order barriers too, the SITES 2006 researchers discovered that teachers’ predilection for conventional learning has impeded the development of the students’ 21st-century abilities and that South African teachers’ use of ICT has remained continuously low (Blignaut, Els, & Howie, 2010).

Recent research works have identified different types of blended learning. Beaver, Hallar, and Westmaas, (2014) have identified four models of blended learning to be:

i. Rotation Model: In this model, students rotate between learning paths or “modalities” - one of which is online learning - either on a fixed schedule or at the teacher’s discretion. In practice, these rotations might mean that a student stays at her desk, but switches between paper-and-pencil instruction and online learning on a tablet or laptop. But it also might involve students trading the classroom for a computer lab for a particular lesson. Mohammed Abdel-Haq (2021) identifies four popular sub-classes of the rotation model such as, station rotation; lab rotation; flipped classroom and individual rotation.
ii. Flex Model: The flex model features students working on a customized schedule that rotates between modalities, one of which is online learning. Unlike individual rotation, however, the flex model is fluid instead of fixed, allowing for real-time changes in schedules to meet ever-changing student learning needs (Moran & Myringer, 2002). This blended learning approach also allows for creative classroom/school configurations, for example by combining study space, breakout rooms, learning labs, small group work rooms, and social areas (Salleh, Baharum, & Shamsudin, 2017).

iii. A La Carte Model: The “A La Carte” model – also known as the “self-blend” model – allows students to design their educational experience by selecting specific online courses to supplement their traditional in-school coursework (Chukwuemeka, Joyce, Anekwe, Ochuba, 2020). For the online coursework component, the teacher-of-record is virtual, and learning occurs either in the school or off-site. Nass, Skuliabina, Kamalova, & Nass, (2021, November) state that this approach may be employed when schools do not have certain courses available on-site for example specific Advanced Placement courses, language courses, or new approaches to teaching foundational courses that meet specific student needs.

iv. Enriched-Virtual Model: In this model, students learn primarily online, but split their time between the brick-and-mortar school campus and an off-site environment. It is a “whole school experience,” which means that it is a comprehensive approach to schooling (as opposed to the course-by-course approach in the self-blend model). The teachers-of-record are primarily virtual, although teachers or paraprofessionals provide supplemental support in the brick-and-mortar environment as well (Fitria, Ruslan, & Mappeasse, 2021).

Rizvi, Gulzar, Nicholas, and Nkoroi, (2017) state that the adoption of blended learning depends largely on how teachers move from their traditional roles to the role of online facilitator, the additional skills and the forging of a new professional identity might not come easily to all practitioners. Blended learning is the practical shifting of role components which entails learning new skills, new tech languages, and new modus-operandi in dishing out teaching jobs. The idea of blended learning can be almost perfectly achieved if these first order and second order barriers are dealt with. It will hence pave way for the introduction of new technology into teaching.

Discussion

Modern technology offers numerous tools for putting into practice the well-known theories that are essential for producing learner-centered environments and producing rich and engaging learning environments (Mechlova & Malcik, 2012). The Behaviourist theory will be examined for the sake of the current work.

The Behaviourist Theory

Watson (1928) established behaviourism in the early 20th century. This was the first cohesive learning theory to be put forth. The experiments of Ivan Pavlov and classical conditioning served as the foundation for Watson's research. Over the following few decades, a range of viewpoints became apparent, including those presented by Thorndike, Tolman, Guthrie, Hull, Skinner, and others. In the modern day, the term “behaviourism” is often connected with Skinner (1988), who gained notoriety by putting Watson's theories to the test in the lab. According to Skinner, humans not only react to their environment but also manipulate it to bring about particular outcomes. As a result, they take part in a feedback loop as a crucial component of a bigger system. According to Skinner, who created the operant conditioning hypothesis, human beings act in certain ways because, in the past, certain actions have resulted outcomes.

To sum up, the systematic design of instruction, behavioural and performance objectives, programmed instruction, competency-based instruction, and teacher accountability are educational techniques with these ideas at their core. Learning and reinforcement for “proper answers and behaviours” are particularly extensively emphasized in training for skills and occupation.

Conclusions

In this section, the author discusses the key findings of the current work's systematic literature review. As a result, three-fold important discoveries were made in relation to the study's stated aims.

First and foremost, the author of this paper's meta-synthesis of pertinent literature has shown that the incorporation of technologies into teaching is indeed a step forward since it frees teaching and learning from the pressures and restrictions of location and time. Additionally, using contemporary technology in the classroom helps students get ready to deal with challenging scenarios they may run into in the future. Additionally, it improves communication between students, teachers, and other students. The findings of Sarker et al. (2019), which show that modern technology supports problem-based learning, support these findings.

Furthermore, the study's findings revealed that most South African instructors have a negative attitude regarding the usage of modern technologies for teaching. This has either made access to educational technologies challenging or neglected by teachings on few occasions where they are accessible. This is evident in the findings of Sherman and Howard (2012); Ndibalema (2014); Msila (2015) who assert that one of the major barriers to educational technology integration in South Africa was instructors' unfavorable views and ignorance of the value of instructional technologies in teaching and learning.
Finally, the outcomes of the current study’s literature evaluations have shown that the government of South Africa and educational institutions do not prioritize the integration new technology into education. As a result, the funding set aside for education has been rather small. This is supported by the study and report by Statistics South Africa (2018) state that priority has not been given to the integration of ICT into educational systems in South Africa. Furthermore, hence technology education motivates learners to develop their self-skills and to-build their own solutions to solve everyday problems.

This paper recommends that government should first set up the necessary infrastructure, such as making sure that ICT training is as highly available as possible for both instructors and students, before properly integrating new technology into education. This can be accomplished by establishing common public ICT training centers within all educational settings, including basic, secondary, and higher education. These ICT training facilities will accommodate students’ technology acceptance, adaptation, and capability.

Also, additional ICT-focused higher education institutions or schools for teacher preparation should be built within or next to existing ones. It is recommended that there be at least two ICT training facilities for teachers in each province, located in key areas. The mandatory graduation and qualifying requirements should include attendance and excellent performance for this approach to have a substantial impact.

Additionally, admission should be either free or heavily discounted. All schools in all provinces, both elementary and higher education institutions, shall have fully operational computerized libraries with internet connectivity (and controlled usage). For research purposes and to acquire the most recent material, teachers should have access to personal computers, tablets, or smartphones. Students in elementary schools should have access to ICT tools outfitted with solely educational applications that don’t need an internet connection to function and are designed to fit the curricula of the schools.

Moreover, the South African government must engage with people who live in rural areas with limited access to schools, teach them how to use smart gadgets for learning and set up online learning environments for them with supervised free internet service. In some circumstances, it is appropriate to meet with students and teach them via social media and programs that have been specially created. Furthermore, in the budget, they should prioritize funding for education. There should also be structural planning in place to support the ongoing application of the policies that would support this goal. This study concludes that blended learning is best used as an instructional strategy in South African classes.

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Informed Consent Statement: This is a SLR paper, no informed consent was sort after or obtained. Furthermore, the paper carefully applied the procedures of SLR approach required in the study.

Data Availability Statement: The data presented in this study are available on request from the corresponding author.

Conflicts of Interest: The authors declare no conflict of interest.

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