# WORK INTEGRATED LEARNING (WIL): SOUTH AFRICAN UNIVERSITIES PREPARING STUDENT TEACHERS FOR TODAY'S POOR SCHOOLS

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ABSTRACT

Plagued by many challenges, the historically disadvantaged schools in South Africa need special attention from initial teacher education programmes at higher education institutions. Recent scientific reports demonstrate that South African learners in primary schools struggle in reading, writing and numeracy. However, along with these challenges, the introduction of digital tools in schools has put more pressure on teachers in all schools. Several educators have been found unprepared for the modern technologies. This case study focused on Work Integrated Learning (WIL) of student teachers at a Gauteng university and how they could be prepared to teach using technology in poorly resourced schools. Eight participants were final year student teachers who shared their experiences from which the study sought recommendations on how teachers could learn to teach in future schools that faced challenges such as poverty of the families and inadequacy of technological resources. The results show that WIL can be a great success in preparing novice teachers to be able to teach in schools that face a myriad of similar challenges. The major findings reveal that WIL is critical in ensuring that relevant initial teacher education prepares teachers who will be able to close the achievement gaps in in disadvantaged schools. Furthermore, teachers who have undergone an effective WIL focusing on poor schools are likely to empower other teachers who will support learner resilience as they improve learner achievement.

**Keywords**: digital gap, digital learning, engaged learning, school effectiveness, work-integrated learning

## INTRODUCTION

Singh and Haugsbakken (2023) point out that the rise of online learning in society has made higher education institutions to think differently in ways in how they can expand online learning for students. At the time of the Fourth Industrial Revolution (4IR), online learning and distance

education have become a boon to a multitude of students. Queiros and de Villiers (2016) state that with the advent of e-learning, online learning is amongst the useful means to reach the marginalised students in South Africa. Similarly, Sharma (2023) affirms that with the introduction of e-learning, students at educational institutions around the world do not solely rely on traditional chalk and board methods. In fact, South Africa's largely rural areas will benefit from the effective utilisation of e-learning methods. Child et al. (2023) assert that some of the students at universities are attracted by the convenience of online learning. The positives of e-learning have also been felt by many schools. Given that many schools in South Africa, especially those in townships (sometimes referred to as historically black areas), have few or no technological resources hence teachers who will serve these at-risk learners need to be prepared well (Torres and Giddle 2020; Mkhize and Davids 2021). If technological education cannot liberate these learners in the Freirean sense, then education will soon be obsolete in a time of technological advancement. Freire (1970) points out that education can either liberate or restrict learners hence education needs to be a practice of freedom. this is the same sentiment shared by Bell Hooks (1994) who argues that schools need teachers who are activists who will break the status quo. In fact, progressive teachers have a burden on their shoulders for they need to be authentic and committed "to the process of self-actualisation that promotes their well-being if they are to teach in a manner that empowers students" (Hooks 1994, 15).

This study poses questions as to how teacher education programmes can empower novice teachers to be able to teach in all schools in a time of technology advancement. Bell Hooks (1994, 2009) supports the idea of teachers building classrooms as learning communities. Therefore, for Hooks if teachers cannot engender engaged pedagogy they would be failing in executing their work. Engaged pedagogy refers to teaching/learning environment that is accompanied by active learning, interactive engagement and validated teaching practices. In schools where there are inadequate resources and teachers unprepared there is likely to be alienation of learners and inability to use their minds. As Hooks (1994, 2002) states, in effective classrooms, learners will have a voice and become active participants as they learn. In today's classrooms where teachers and their learners are not knowledgeable about technology, they are likely to be impotent and unable to pursue meaningful and critical pedagogy as pronounced by Freire (1970) and Hooks (1994) for technology has become sine qua non of education. The case study took place at a university in Gauteng Province, South Africa. Eight black student teachers registered in an initial teacher training programme which utilises both distance and contact sessions were purposefully selected to be part of the study. The demographic limitations include the focus on only one university as is usually the situation with case studies; case studies are

about in-depth exploration of a programme and it enables researchers collect a detailed data.

This study examines two pertinent questions:

- How can work-integrated learning (WIL) enhance the technological skills of novice teachers based in poorly resourced schools?
- What specific skills do teachers need in preparing learners in poor schools for technology?

These questions are examined in several sections and after the introduction and definition of terms the following sub-topics form the study's overview;

- Understanding work integrated learning;
- Research methodology;
- Findings
- Discussion of the findings and
- Conclusion.

## SIGNIFICANCE OF THE STUDY

The present study has a potential to suggest new strategies as novice teachers start their careers in poor schools where there is lack of quality technology teachers and inadequate technological resources. Poor schools struggle with material resources such as computers and the learners in these schools experience a digital gap which excludes them and makes them to be underprepared for future. The study is significant because it explores specific ways in which student teachers who will teach at these poor schools can be equipped through WIL placement. There are few studies that focus of underscoring the envisaged scenarios in poor schools. As a consequence of this, novice teachers are overwhelmed in schools and may experience burnout from the first year (Waterford 2019; Mahmoodi-Shahrebabaki, 2019). Teacher burnout is caused by chronic stress associated with work in schools. The study also examines the practical ways in which teachers as activists can revolutionise education by showing that all learners should be prepared for the same future. In time of technological advancements, disempowered teachers will never know how to work with indigent schools as they attempt to close the digital divide and enhance online learning teaching. When the pandemic struck between 2018 and 2021 many schools were caught unawares hence teachers need to be prepared not only in affluent schools where there is abundant digital tools but all schools need practical strategies including schools used by poor families. All this would start with empowered teachers and university teacher programmes are a good place to start. The study hopes to make original contribution as it adds to existing theory.

## DEFINITION OF TERMS

In this study some concepts which may confuse should be understood in the following ways:

***Digital divide*** – this concept refers to the gap between people and regions that have access to modern information and communication technology (ICT) and those that have restricted access. Therefore, this refers to the unequal access to digital technology including smartphones, tablets, laptops and the internet (Ragnedda and Muschert 2013).

***Digital tools*** – this term refers to software, programmes or applications used through a computer, laptop, cellular phone and any other ICT form. Dancsa et al. (2023) point out that digital educational tools are part of digital transformation and online digital tools include websites, programmes, extensions, plug-ins and apps.

***Distance education*** – this is sometimes referred to as distance learning which is the education of students who may not be physically present at an education institution. CourseEra (2023) opine that learning materials and lectures are available online and learners can stay at their holes while taking classes from an institution of learning. Furthermore, distance learning can either be synchronous (real time delivery) or asynchronous (learners advance at their own time).

## UNDERSTANDING WORK-INTEGRATED LEARNING

Work Integrated Learning is defined as work-readiness training and process of placing students into future work environments. To avoid chronic stress of teachers in poorly resourced schools, novice teachers need a thorough preparation in initial teacher training programmes. Student teachers will soon join the schools as teachers hence this study examines the experiences of student teachers registered at higher education institutions and how they could integrate real life experiences that would make them ready to teach in schools. Therefore, WIL is seen as a process that promotes the learning experience into the workplace through experiential learning (Lubbe and Svensson 2022; Matook 2022). Govender and Wait (2017) as well as Matook (2022) posit that higher education institutions today should integrate WIL into curricula to promote student career development. This is vital for novice teachers who go out in the world to teach different schools hence they would need varying skills. Fleisch (2008) demonstrates that there are two kinds of schools in South Africa; on the one hand are schools for the affluent with all the resources whilst on the other it is schools for the poor families. In most cases teachers have not been prepared adequately for poor schools. In fact, it is usually underprepared teachers who go to indigent schools where at-risk learners are. It would help communities if higher education institutions ensured that teachers have acquired work readiness and are able

to transfer theoretical knowledge into the practical implementation (Govender and Wait 2017). Many school principals would like to hire teachers who will be ready to help learners learn effectively in classrooms. Lubbe and Svensson 2022, 39) contend:

> "Work-Integrated Learning (WIL) is a process whereby students transfer theoretical knowledge into practice. Universities, industry , and students regard graduate skill, employability and job opportunities as critical success factors for degree programmes (Ohei and Brink, 2019; Ibrahim and Jaaffar, 2017) and WIL enhances a graduate's chances of employability and job opportunities (Freudenberg, Brimble and Vyvyan, 2010). Through building a student"s practical and basic skills, graduates can become more employable and WIL is being respected as an important instrument to enhance graduate job opportunities(Ohei and Brink, 2019: Ibrahim and Joaffar, 2017; Hamilton et al., 2015)."

WIL for student teachers is much sought for by employers today because school leaders like other employers, would like to have employees who would not only have theory, but workers who will be able to apply the theory on practice of teaching. The above then shows that WIL is an excellent strategy to enhance workplace competencies and for teacher-students it is a strategy that has a potential to attain school achievement and learner success (Matook 2022).

Because technology is new in many schools and copious number of teachers are still learning, the student teacher who will join the teaching corps will go into schools already seeing the value of the WIL as they help fellow teachers as well as their learners. Matook (2022) points out that real-world experience (relevant to technological classrooms) in university classrooms allows the student-teachers to see the relevance of what they learn in university programmes utilising WIL. In fact. WIL creates a sense of belonging where their experiential learning shows that learning in school classrooms manifests in something real and authentic.

Several historically black schools have no digital tools therefore amongst others, WIL has to ensure that student-teachers are able to face the ills in poor schools and these include closing the digital gap, engendering critical thinking through digital tools, skilling for success and all these would require effective communication. One can liken the transformation of education into classrooms that use digital tools as Hooks" changing education into a revolution in education (Da Silva 2022). Again, as in Freire's theory, WIL has a potential to turn teachers into change agents of that revolution. Many teachers are conscious of how they were taught where teachers were always at the centre of teaching. The latter does not work in digital classrooms where the learners need to be active. Yet teachers need to find ways of the classroom as not only a place of caring and love but of serious interrogation as well. It is through thorough interrogation and dialogue that teachers can empower all learners as they close the technology gap. If the latter does not happen, learners from indigent families will forever be silent in

classrooms.

Learners should see hope and love in digital classrooms similar to how Freire as well as Hooks perceived them. If children can experience these in technology classrooms, they will see the future as they use education with digital tools as a weapon of freedom. the digital tools also highly enable learning that is linked to the learners" pace of learning. Zahedi (2023) states that technology has a huge positive impact of education. Furthermore, Zahedi (2023) argues that the flexibility accorded by technology enable learners "to learn at their own pace and gives them freedom to choose when and where they learn." Conscientious student teachers in WIL placement should be taught these for this can liberate the learners and make them feel more engaged and motivated to learn as they can use education to suit and fulfil their needs. Digital technologies have a potential to exclude some learners hence university programmes should always be aware of this. According to Haleem et al. (2022) digital technologies should be used for inclusive and equitable education. WIL placements should teach student-teachers to enable their future learners to see the easier side of education because they can now use various software and tools rather than merely pen and paper. This then amongst other make the learners co-creators of education. Student teachers can be made to perceive these positives in classrooms and in turn they should show their learners. For example, in traditional classrooms, instructions do not provide an immediate learning environment faster evaluations and more fruitful engagements (Haleem et al. 2022).

COVID 19 in 2019 to 2021 exposed many schools that did not have the necessary digital tools to continue with e-learning. School closures in South Africa"s townships and rural areas exposed the challenges experienced by poor families children in schools. Important in WIL for e-learning effective teaching is to ensure support of the student-teachers quality experiences to translate their knowledge and experiences into practice especially for indigent schools" unique cultures. Due to their inadequate material and human resources poor schools need special teachers. Bouwer, Venketsamy and Bipath (2021) state that to prepare student teachers for the teaching profession, initial teacher training programmes should utilise WIL. These authors posit that programmes should underscore the integration of theory with practice especially for in teaching proficiently in challenging situations. WIL can play a critical role not only in teaching practice but also in aspects such as teacher leadership and experience of resilience.

WIL is vital for student teachers in preparing them for the changing future regarding digital technologies. Any WIL placement for student teachers will be incomplete without a spotlight on technology. Initial teacher education programmes at universities have to produce creative teachers and digital tools should not merely be another form of teacher-centred

approaches. Trust (2017) spells out the role of teacher educators who need to prepare future teachers for teaching through technology to redefine learning. Then student-teacher need WIL to enrich their experience that foster21st century skills. Du Plessis (2010) refers to WIL as a factor of holistic educational strategy known as cooperative education which incorporates practical teaching.

The Council for Higher Education (CHE, 2011, p.4) upholds the importance of WIL defining it as a "fostering university learning that is less didactic and more situated, participative, and "real world" oriented". Yet other authors highlight the challenges to WIL and these include the difficulty in turning theory into practice. Furthermore, WIL is not documented properly, there may be a lack of resources, competencies of academics and lack of cooperation among stakeholders that have to play a role can hamper the potential of WIL (Tsela, 2016). Haggerty (2021) also mentions a number of challenges of WIL and these include (i) students may experience hindrances to effective WIL based on their gender, race, sexuality and other characteristics which may be irrelevant characteristics. (ii) people with disability may struggle to be places in appropriate work placements.

## RESEARCH METHODOLOGY

This case study took place at a university in Gauteng Province where purposeful sampling was employed to select eight participants. Purposeful sampling is about the selection of information-rich participants hence researchers utilising this look for participants who will have certain characteristics that they are interested in. Creswell (2014) as well as Cohen, Manion and Morrison, 2000) maintain that it might be useful for researchers to identify participants that might provide insight into their research. Furthermore, he states that purposeful sampling involves researchers selecting participants because they believe that they might contribute something in their analysis. In this study the researcher selected student teachers who were in a WIL placement that focused on using digital tools in poor schools. The sixteen schools that the eight participants visited for their teaching practice are all situated in historically black areas and all are high schools that have similar characteristics. The schools were all under resourced and had inadequate digital tools or none. All the participants were in their final year of their teaching degree programme.

Following the ethical principles of research the researcher interviewed all eight participants two times. The first interviews occurred I the first quarter of the year before the first teaching practice whilst the second interviews took place in the last quarter. The participants were also interviewed in focus groups in the first quarter and the last quarter. In

addition to the focus group interviews, the researcher attended four discussion sessions where the student teachers discussed (among themselves) their strategies as they explored the "best practices" in schools that do not have digital tools. They did not consent to the researcher visit their classes stating that the three weeks they are at a school is not enough to show the true picture of what they wanted to achieve. The study followed research ethics and the participants were made aware of the responsibility to the participants. The researcher was open and honest informing the participants about their rights to withdraw anytime when they felt harmed. They were also given the interview transcripts after the interview sessions to verify the data (Struwig and Stead 2004; Newby 2014)

Qualitative data analysis, unlike quantitative analysis examine and interpret non-numerical data. It focused more on interpretive phenomenological analysis (IPA) which explores how people make sense of their experiences. The lived experiences found demonstrate that there are varied experiences and not influenced by pre-existing theoretical preconceptions. Smith and Nizza (2022) point out that IPA is useful in addressing a variety of research questions in different areas. Larkin, Watts and Clifton (2006) point out that IPA uses a hermeneutic stance of inquiry and meaning making. From the key claims of the participant the researcher uses coding with the emphasis on shifting back and forth from the key claims. The codes generated come from the data collected rather than pre-existing theory. Patterns and themes are teased from this data. What is critical in all this is that the researcher was more interested with the quality of experience than causal relationships.

## FINDINGS

### WIL and disadvantaged schools

By their admission, the eight participants learnt a number of skills as they consciously prepared themselves to teach using digital schools in underesourced schools. The researcher used the participants" experiences as demanded by interpretive phenomenological analysis to understand WIL and its influence on student teachers. The facilitators in the teaching programme used WIL because they sought to address the pervading challenges that in disadvantaged schools. According to the participants, the programme leaders realised that student teachers are taught and prepared for "normal schools", yet many black teachers start their careers in historically black schools which have no semblance of normalcy. In fact, all the student teachers stated that in the first two years they went out to observe schools which had few or no resources and their concern was, with the advent of technology, they would never be able to teach in these schools using digital technology. Additionally, the student teachers who

went to rural schools for observation and practice teaching, found themselves in schools where there was no technological tools at all and teachers had never lay their hands on computers.

One participant, Anne, whose previous practice teaching sessions were in an urban area and two others in semi-rural area postulated,

> "When we started the WIL this year, it was because we had asked our tutors to prepare us for the reality in the schools we will go to. They were preparing us for the ideal schools with all the necessary tools. We had to prepare for the reality hence the WIL. The course makes us think about the reality hence in our third year we were able to look closely into the everyday practices of poor schools, at least in theory."

Various other participants concurred with Anne pointing out that technology is crucial especially with the talk of the 4IR. They reiterated that they do not get to use many material resources in indigent schools when they have to teach using digital tools and technology. Furthermore, the participants agreed that all historically black schools struggle and the current widespread use of technology in schools was already thwarting progress in these schools.

Sipho postulated:

> "For the past two years, I have been taking my practice teaching in semi-rural schools. Really, there is nothing in those schools. Teachers are despondent for there is nothing to support them. As I asked teachers about technology, they chuckled telling me that they still struggle getting resources such as textbooks and I am talking about computers. It was that time I felt that we have not been prepared well by our teacher education programme. The programme should prepare us for such realities in our schools. It is for that reason that I am finding WIL talking to these challenges. We need the right and relevant skills."

Dineo concurred:

> "What WIL has done with us is eye-opening. In fact, this is how teaching should be, we should always think of the real situation in the schools we will be going to. Teacher training should prepare all prospective teachers for the actual challenges such as less parental involvement, colleagues who might not have been adequately trained, learners who experience several challenges at home and district officials who might not be involved."

The participants relating to digital tools and teaching using technology are non-existent in all the schools that the participants visited for their practice teaching. They found many teachers less skilled in using computers than learners. In fact, sometimes it was not that there were no computers in the schools, in two schools there were computers but the school principals refused to let teachers use these. Seipati explained that the principal in her host school was worried that the computers may be damaged or will be stolen by vandals so these were locked in the storeroom. Therefore, thirty computers in a school with 32 teachers were locked away whilst teachers desperately needed computer skills.

## Skills needed in poor schools

The eight participants stated that digital training was needed not only by learners in their host schools but this was needed by teachers who incidentally found technology introduction a government ploy to dismiss teachers. What they also noted in their schools was the absence of a meaningful guidance to the adoption of technology. Seipati affirmed:

> "Even school management teams found that the computers were deskilling them. In fact, they seem to discourage teachers, making jokes that technology was a government ploy to dismiss everyone. One of the principals kept on downplaying technology in schools pointing out that effective teachers were never to be replaced by any digital tools."

Other participants concurred stating out that in earnest, school managers were not really opposed to the introduction of technology but were only spurred by fear. Technology needs those at the helm of organisations to lead as the participants attested. Peter had visited two township schools and in each of the two there was only one computer used by support staff. He pointed out:

> "In the schools we go to, it is easy to pick up that technology is not part of the schools" key areas. The school managers have not prioritised digital tools but it is understandable because the school has no technology tools at all. When I asked two heads of department in one school they pointed out that none of the teachers had any reasonable knowledge in operating computers. "

Albert shared a similar story as he intimated that in his two rural schools he visited many teachers had no knowledge of what the 4IR was and more than 60 per cent had never lay their hands on the computer claiming that they were to retire soon and there was no point in learning new skills. It is because of these experiences that we appreciated how WIL has made us to be prepared for our schools. It is learners who struggle and the digital skills gap widens when these children are compared with their peers from other better resourced schools.

Teresa who had been to a rural school and a township school claimed:

> "The problem with the schools we go to is that you see the absence of commitment from business and district officials who should be supporting the schools. Well, business should work with schools although this is not happening in township schools. The districts are also to blame because I do not think they are committed enough in guiding schools. The skills shortage in technology needs an intense team effort where various role-players help in enhancing teachers and learners" skills in a number of ways".

Khabo liked the idea of having a few teachers trained in each school, so that they in turn train others in the effective use of digital tools. Khabo opined:

> "In my one host school there were three teachers who were already into technology as they had attended a certificate course on using technology in the classroom. They were ready to teach others. However, few teachers attended their classes. A huge number (26 in a school of 39 teachers) stated that they were to retire soon and the technology skills won"t be of assistance in

any way".

Other participants also added that some teachers did not want to know anything about computers because they did not want any additional responsibility of having to teach others. The learning about digital tools then was perceived as "a trap, which would only bring extra responsibility".

## Using resilience

Given all the challenges that prevail in many poor schools, the student teachers maintained that all teachers today need a variety of skills to teach in diverse school settings including those that do not have many resources, especially skills linked to digital tools" usage. The participants also pointed out that they learnt much about the importance of the concept, *resilience*, which enables them to practice teaching in schools that hardly had effective materials and human resources. They described resilience as the learners" ability to cope despite the challenges that lead to adversity. They maintained that resilience could help teachers and learners improve performance and in addition this would be good to build a positive school climate and culture. The participants shared their experiences on their professional development when it came to promoting school resilience. Peter declared:

> "I went for teaching practice for the first time this year and I witnessed the despondence of teachers. many feel that their schools are not meant to attain learner success. We should all visit these poor and underperforming schools, to see how our learners will never make it in future like their counterparts in more advantaged schools. We need to hear the teachers" stories and witness the learners" experiences."

Lisa asserted:

> "In some of these schools, the situations are dire. You pick up frustration of role-players as you delve in the culture and experience the climate. Few young teachers would make it if they were never prepared for the conditions that prevail in struggling schools. As I observed the school I was in, I really doubt if any management team would survive without preparing teachers psychologically, especially against teacher burnout. But on top of the list is resilience. When teachers and their learners are not resilient, they will be powerless in their schools especially in a time when they do not have digital tools and teachers who have no skills."

The participants related stories of how they observed and conversed with physical science teachers who taught without any science apparatus. They found it so disparaging having to observe and listen to these teachers who used narration in teaching experiments. Additionally, all the participants highlighted poverty of the learners" families as hampering to their education. Teresa asserted:

> "The conditions in many of these poor schools reflect inadequate resources. Even outside the

> classroom, the conditions are bad, the toilets, the playgrounds, the fallen fences and broken windows all tell a story of gloom. In fact, I felt so awkward to be expecting learners to bring computers to school when they struggle to have writing pens and textbooks. I could see clearly how enthusiastic novice teachers can be disillusioned in their first years when they cannot try out what they had learnt in initial teacher education programmes."

The participants maintained that the learners" failure in poor schools is a result of adverse circumstances at home and school because these add to learner failure to achieve. They also claimed that the socioeconomic status of families lead to lack of interest in schoolwork. And al maintained that poor schools need strong teachers who will themselves be resilient and in turn be able to teach that resilience to the learners. The student-teachers also reiterated the importance of WIL because in their programme, they had started finding ways of engendering academic resilience in learners.

Sipho highlighted:

> "The challenges are not concealed. As soon as you enter the classroom and witness the problems, you become bewildered as a teacher. At first I was always saying few learners if any, would make it in the current digital age. I anticipated the demise of township schools with this technology. Yet, I have come to realise the power of resilient teachers and learners. In my own classrooms, some learners used their cell phones to teach others. Low quality schools with inadequate resources need to speed such resilience from communities, parents, learners and to teachers."

Additionally, participants concurred that some learners may be able to learn against odds to succeed without any preparation in resilience. Yet, the participants pointed out that the nature of technological changes forces the school system to look at resilience anew because technology is new for many teachers as well.

## DISCUSSION

### Empowering Novice Teachers for e-Learning and e-Teaching

Empowering teachers for engendering the culture of e-learning and teaching is critical in the preparation of new teachers for the use of technology. WIL acknowledged that this was even more important for teachers who have never learnt technology or through technology. Higher education institutions should take it upon themselves to improve society in a time of 4IR. The engaged university concept could help improve communities, schools and other societal formations. WIL can open doors where empowered novice teachers can lead in revolutionising digital transformation and teaching and learning improvement in schools (Sharma 2023). In a continent like Africa where there are scant resources, higher education institutions should lead in the process of improving society. WIL could enhance university relevance in society. Jakoet-Salie and Ramaloba (2022) affirm that digitalisation pervades all processes of higher education

teaching, learning, research and work hence faculty and students have to acquire digital skills. Empowered student-teachers will be a boon to any school they join because they will have skills to empower colleagues. Higher education institutions need a number of innovations to address challenges in society and their solution has to be reflected by teaching and research. Jakoet-Salie and Ramaloba (2022) state that digitalisation is not a new challenge in higher education but it is also a powerful tool for addressing key challenges in the 21st century. Wang et al. (2019) posit that empowering teachers to lead the poor schools , WIL could enable student teachers to be prepared as effective future teachers. Progressive schools could then use new teachers" skills to develop other teachers during professional development programmes.

During the COVID lockdown in the years 2019 and 2020 in South Africa, many of these teachers schools were not operational because not only were the learners not prepared for technologies but the teachers themselves were not familiar with the use of computers and technology in general (Mkhize and Davids 2021). In fact, COVID demonstrated that technology was no longer a luxury for affluent schools but a skilled needed by all schools. It also showed that it should not be a choice for teachers to study technology but that all should study through technology and understand technology (Matook 2022). The student-teachers found the practical exercises they did during their study were preparing them not only for e-Teaching but for e-learning as well. As indicated above, they realised that remote learning has many challenges especially for historically disadvantaged communities. Several teachers highlighted that their learners are from indigent families with no social capital and were more likely to lay hands on the computer when they were in school. Even when the learners were in their schools they were likely not to have enough time to practice computer use because the computers are less in number. The participants stated that they got to know how important it was to learn to empathise with the learners as they amongst others, tried to close the technology gaps (Haleem et al. 2022). With the advent of 4IR it is not adequate to use writing boards as was the case in traditional classrooms (Da Silva 2022). Today teaching and learning is challenged by use of computer programmes. The question is how do teachers cope?

The Kensington publication (2020) highlights four factors pertinent in preparing teachers and learners for e-learning and these are; engaging in compassionate and constant communication, helping teachers to get the tools and technologies they need, supporting teachers" health and well-being as well as embracing and learning from the experience. All the skills learnt by the student teachers are relevant and should be made part of in-service training for teachers who are already teaching. The District officials and their schools could make use of higher education special programmes to upgrade the teachers" knowledge. The WIL

experiment could help schools immensely if higher education institutions

## Skilling Teachers for Learner Success

Participants in the study maintained that WIL was supposed to ensure that they would be able to teach their learners for success. The pressure the participants felt was to prepare the learners with 21st century modes of teaching and learning. What concerned many participants was that the new ways of teaching that were deskilling any of them should not alienate their learners Torres and Giddle 2020). They maintained that it would be a disaster if their learners would be helpless as their teachers hence the schools should supply teachers with relevant tools (Mhkize and Davis 2021). The teachers also maintained that their administrators needed to ensure that they are ahead of their learners in technology. Developing their skills in using the new age teaching tools was of vital importance to the participants. It was crucial in the programme for them to be taught with technology integrated so that they could see ways of teaching and learning using the digital tools (Hooks 2007). The participants also wanted to know how to teach learners who were to be the best. In the programme they learnt that meaningful communication is critical for the online learner. The participants highlighted values that they picked up in their practical and these included patience and good motivation. Effective teachers know that successful online learners need new skills if they are to perfect online learning. Some of the skills learners needed are discussed by many authors. Roper (2007) states that learners need to develop time management strategy, they need to stay motivated, use effective communication strategies, make connections with their peers and make questions useful to their learning.

The participants were also interested in ways of forging strong relations and meaningful interaction between learners and the teachers. Many found eLearning to be an opportunity for them to learn with their learners. Whilst others found this a challenge that could be detrimental in their classrooms, others felt that it was a positive opportunity to be learning with their learners. These mean that attitude or behaviour cannot be overlooked in online learning. Teachers need to work closely as they assess ways in which the learners regard online learning. Therefore, as teachers work with their own attitudes, they should be aware of how their learners behave towards online learning. Basar et al. (2021, 122) point out:

> "Behaviour is strongly influenced by an individual"s attitudes. Positive attitudes result in positive behaviour and negative attitudes always cause negative behaviour (Hazwani et al., 2020). This observation corresponds with the nature of students" engagement with e-learning (online learning). Several studies have highlighted the challenges and opportunities associated with e-learning during the pandemic (Mailizar et al.,2020). Researchers endeavour to understand the

> benefits and obstacles that various stakeholders involved in e-learning have experienced... Therefore, further research is necessary to identify the challenges that restrict students" abilities to achieve their goals."

Participants maintained that for online learning the motivation of learners should be different because of the skills required which differ from traditional classrooms. The participants ensured that the WIL addressed the envisaged challenges that would be presented by ICT devices. Among these were isolation that may come with remote teaching as well as the quality of devices for many learners.

## Engendering Creativity and Innovation

All the participants were concerned about remote learning when it came to the utilisation of innovation and creativity among learners in online classrooms (Sharma 2023). Many participants were aware that digital tools because of their nature have a potential to enhance creativity and innovation if teachers know how to guide their learners. In fact, all stated that teacher training programmes should teach educators ways of using computer programmes to facilitate education that supports creativity (Hooks 2003; 2007). Alt, Kapshuk and Dekel (2023) argue that online education is congruent with future problem-solving programmes for higher education students. Furthermore, Alt et al. (2023) contend that because of uncertainty of the future, students need to think critically as they use innovative strategies so as to adapt to the fast-changing reality. The Work Integrated Learning taught the student teachers to move towards creativity and innovation. In fact, teachers today should be prepared to facilitate virtual learning that ignites the curiosity of the learners and without creative thinking, then technology will fail the learners. Abedini (2021) argues that creativity or creative thinking are critical cognitive skills that should interest teachers globally and this should be used by learners to find solutions to challenges in their society. Therefore, teachers should ask themselves questions such as how to respond to health problems using technology, how can technology bring solutions to mathematics, reading, writing and improving their communities.

WIL"s role is also pivotal in preparing learners for the future. Teachers should always acknowledge that in the 21st century classrooms should always reflect ways of sharpening the mind of the learner. The rapid shifts in technology should changing the way learners think, work, live ad play (Henriksen et al. 2021). Yet, what came up in the study several times was that in many schools, the historically black schools, there will be constraints for the majority of learners come from indigent families and in poor schools. Effective educators will be conscious of how to utilise creativity and innovation in ways that align with the realities of praxis

(Henriksen et al., 2021). Educators whether in poor schools or affluent schools should be able to engender innovation and creativity after all learners are being prepared for the same futures that need skills of the 21st century.

## Closing the Digital Learning Gap

In a country like South Africa, given the huge gaps in socioeconomic status of learners it is important to ensure that novice teachers follow the mandates of their Constitution which emphasises social justice and equity. Education is supposed to be a leveller in society although some experts have pointed out that education serves two kinds of learners; the affluent and the indigent (Fleisch 2008). The indigent are usually black and are usually trapped in historically disadvantaged schools situated in historically black areas or township under apartheid. The affluent are in private schools or better resources public schools outside the township where only affording parents can send their children. This in itself demonstrates the unfairness of education in South Africa. As people talk about the impending 4IR, they also need to think how to close the technology gap between the rich and the poor. In the study the student teachers were aware of the huge gaps hence they used WIL strategy to help them address the technology gaps in their classrooms. It is better when teachers are aware of the challenges brought by the digital learning gap. Cator (2019) states that closing the digital learning gap should be top priority for schools otherwise education will undermine equity and social justice. Additionally, if this is not addressed poor families may find that education is not for their children. Education need to be used in meaningful ways and this includes technology education that would support lifelong learning. Amongst the strategies the student teachers thought about in their teacher education programme was how to close the digital gap using the bare resources that their schools may have. Trucano (2014) suggest a few practices that may ameliorate poverty as it attempts to enhance productivity. Tucano's initiatives include:

- Using old technologies in new ways – this includes radio and television.
- Sharing one device with a number of learners.
- Caching on-line content for offline use.
- Promoting literacy and learning and supporting teachers with mobile phones.
- Using low-cost video to support peer learning and support.

All these are some strategies that can be used in remote areas especially rural and poor in South Africa where parents are likely to be non-literate and not have the material resources such as televisions, telephones and texts. The above would not better the education of the poor and lead to equity however, they would ensure that all children are learning. Virtual education should

not widen the digital learning gap in schools. Schools should harness the power of the technology they have however small, to close the gap in quality education. In the hands of effective and creative teachers the digital learning gap will always be minimised (Hooks 1994; 2003; 2007). Technology will not replace effective teachers" work; hence effective teachers will use technology judiciously.

## CONCLUSION

This study demonstrates that WIL in initial teacher education programmes would prepare and enable novice teachers to plan well for successful careers in basic education especially in undersresourced schools. The WIL ensures that novice teachers in schools with no or inadequate digital tools are not daunted by the poor conditions in schools. Among others, WIL enables the novice teachers to be able to instil resilience in both teachers and the learners and it also enables the novice teachers to see how education could be used to entrench principles of social justice and democracy thus ensure that learners from poor families would be able to get effective education. In this study, WIL was a process to bring about technological education that is more inclusive than exclusive. Apart from engendering resilience among all the schools" role-players, novice teachers need skills which include ways of maximising the use of readily available tools such as cell phones to replace computers as well as cooperative learning where learners in classrooms are able to share the few resources such as phones available. The student teachers were also equipped with skills of how they could support train the trainer programme so that the learners would be able to support one another in the absence of the teachers. The conclusions show that in the 21st century schools that utilise technology teachers should be prepared well by teacher training programmes in higher education institutions to offset potential challenges in their classrooms. The programme was necessary especially given the fact that many student teacher were going to teach in disadvantaged schools situated in townships and rural areas. Yet, all programmes that embrace WIL should face the realities in schools as they acknowledge that there may be lack of information in schools where student teachers are placed and it may also be difficult to find competent teacher mentors to guide the student teachers. However, WIL has a potential to teach novice teachers exposure to both opportunities and challenges in schools.

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