Teacher Educator Reflections on Preparing First Year Pre-Service Teachers for School-Based Work Integrated Learning in An Online Learning Environment

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ABSTRACT

Due to the COVID 19 pandemic in 2020 and 2021, higher education institutions were forced to embark on online teaching and learning. This came at a point where the entire teacher fraternity was not prepared for this shift from traditional face-to-face interaction to virtual learning. This qualitative, exploratory study was undertaken as a comparative analysis of the teaching, learning and facilitation experiences of three teacher educators. The focus was on teacher educators who engaged in a formal online teacher training program with first year pre-service teachers enrolled on the Bachelor of Education qualification. Data was collected from the teacher educators in the form of interviews and reflective reports prepared at the conclusion of the 2021 academic year. The data was thematically analysed to distil common lessons, challenges and points for the 3 teacher educators with the intention of learning from and improving on practice. The paper addressed three research questions, which guided the study and presents the researchers' findings in the areas of student access to the learning platform, knowledge transfer from online lectures to practical application in the form of portfolio of evidence and the alignment between theory and practice. Recommendations include using a hybrid approach to preservice teacher preparation; using formative and summative assessment in making a judgement on competence and mastery and re-focussing student feedback as reflective essays.

KEYWORDS

Digital pedagogies; paradigm shift; teacher educators; pre-service teachers; school-based work integrated learning

INTRODUCTION

Traditionally, the act of teaching is perceived to be a skills-based activity which requires the teacher to draw from different sources of knowledge. A typical initial teacher preparation curriculum includes both conceptual and contextual knowledge (Dreyer, 2015). Teachers-in-training are required to develop, first as part of their training, and later as an outcome of practice, subject matter knowledge (SMK), pedagogical knowledge (PK), and pedagogical content knowledge (PCK). Subject matter knowledge, also known as theoretical disciplinary knowledge, is crucial in enabling teachers to be effective in the classroom and school environment. Alongside the theoretical disciplinary knowledge, qualified teachers need knowledge of teaching methods referred to as pedagogical knowledge. Pedagogical knowledge includes knowledge of general teaching and learning practices in classrooms, which creates a conducive environment for learning to take place (Zeidler, 2002). At the intersection of subject content knowledge and pedagogical knowledge lies pedagogical content knowledge. Pedagogical content knowledge is the term that describes the process where competent teachers transfer what they know, in their area of specialisation, to the students (Rollnick et al., 2008). This requires teachers to engage in constant reasoning, reflecting and assessing the suitability of their selected approaches linked to a specific context.

The educational benefit of learning from observation is the rationale for making observational practices mandatory and is a requirement in teacher education and training (Weber, 2016). Teacher educators enter into pedagogical relationships with pre-service teachers for the purpose of imparting theoretical knowledge and modelling appropriate behaviour and pedagogical practice for the duration of the course. The pedagogical relationship is based on the teacher educator using instructional approaches in imparting knowledge, whilst the pre-service teachers observe an experienced teacher-in-action. Pre-service teachers learn as much (if not more) from observing, as they do from engaging in set academic tasks themselves (Cuenca, 2010). In addition, as part of the practical component of the work integrated learning process, pre-service teachers are required to spend time in school classrooms observing the behaviour patterns of qualified teachers.

Background to the study

The global COVID 19 pandemic brought an abrupt end to face-to-face interaction between teacher educators and pre-service teachers, for at least eighteen months, at institutions of higher learning in South Africa. Before COVID 19, the use of technology in education was regarded as an innovative optional approach attempted by progressive educators (Dube et al., 2022; Gilakjani, 2013). However, the pandemic forced all educators to online teaching and learning as the only possible safe option to ensure ongoing educational engagement (Adu et al., 2022). Social distancing was one of the many strategies that were used to curb the spread of the virus; and large gatherings were considered as super spreaders of the virus and were, therefore, discouraged. Working from home came as a drastic measure, which brought about a

fundamental paradigm shift in the mode of teaching and learning. As a result, higher education was forced to transition to remote/ online delivery of teaching and learning.

The transition started in March 2020 when the 1st year pre-service teachers had completed registering and had just commenced with face-to-face classes. (1st year Pre-service teachers are students who are entering the university for the first time after completing Grade-12.) In the Faculty of Education, first year pre-service teachers are required to spend a 3 weeks-observation period in a functioning school, as part of their school-based work integrated learning module. The observation provides the pre-service teachers with an opportunity to develop an understanding of the various components of teaching. This practical experience also assists students to attain specific competencies relating to the skills that will make the pre-service teachers ultimately employable and valuable members of the teaching profession.

At the institution of higher learning, where the research was conducted, the pandemic forced teacher educators to learn, not only about how to use online technological platforms, but also the most effective instructional approaches for the delivery of content for online learning for students from technologically disadvantaged backgrounds (Gqokonqana et al., 2022). This necessitated teacher educators to adapt their existing instructional approaches to accommodate for the absence of a crucial element in the training process i.e. observation of best practices by pre-service teachers, whilst accommodating some students' gap in the use of technology for online learning. The pre-service teachers were now unable to observe lecturers demonstrating pedagogical methods that they could use, especially for practical undertakings such as school-based work integrated learning.

In 2020, when COVID-19 restrictions were enforced, online teaching modalities took centre stage in institutions of higher learning. In South Africa, some institutions are highly disadvantaged in terms of resources. This meant these institutions were ill-prepared for the mandatory technological shift in the mode of teaching. Face-to face lectures were replaced with online learning, which meant that the physical connectedness of students with lecturers and students with other students was not possible. One of the principles of the social learning theory by Lev Vygotsky (1962) helps us to understand how people learn in social contexts. With the move to on-line learning, the social aspect of learning was disrupted. Omrod (2016) found that four principles, namely, competence, excitement, self-determination and connectedness, are fundamental needs in online learning. These principles were not initially fulfilled, in these circumstances, because of the various challenges brought to bear by online learning.

During school-based work integrated learning sessions, teacher educators had various experiences whilst preparing first year pre-service teachers for learning, using an online learning environment. Their reflections on approaches that they used in their preparation of 1st year pre-service teachers are dealt with in the following segments. Some of these challenges include, but are not limited to, lack of technological knowledge and ability, connectivity issues caused by load shedding during online classes and linking theory to practice.

The critical questions that drove this research were:

- What instructional methods did teacher educators use in the preparation of pre-service teachers prior to the shift to online-learning?
- How did teacher educators adapt their instructional methods to an online setting?
- What successes/challenges teacher did educators experience during the transitioning from face-to-face to online learning platforms?

RESEARCH METHODS AND DESIGN

This research was qualitative in nature and used a case study design. Qualitative research approaches are used for exploring and understanding the meaning that individuals ascribe to a social and human problem (Creswell & Creswell, 2017). The study's research design and methodology are in line with Creswell (2013), who argued that, before the researcher embarks on the research journey, s/he must consider certain things, such as the research paradigm, research methodology or design and the methods to be employed to answer the research questions. The study followed the interprevist paradigm, which, according to Yanow & Schwatz-Shea (2014), holds that reality is subjective, socially constructed and a composite of multiple perspectives. This is deemed relevant, as research is shaped by the researchers who bring their own subjective views of observed phenomena, based on their personal experiences.

In this research, the problem under investigation was the transitioning of training pre-service teachers for readiness towards their first school-based work integrated learning sessions at schools, using an online platform. The aim of the research was to investigate the experiences of three higher education/university lecturers in preparing pre-service teachers for using an online method.

Participant Sample

In this research, purposive sampling was used. Purposive sampling is a selection process where the candidates who are most likely to answer the research question are selected (Campbell et al., 2020). For the sake of this study, purposive sampling techniques were convenient as they allowed the researchers to select participants who are readily available to take part in the study (Evans, 2014). It is relevant for this study, as it focuses on teacher educators who are already in the university system and who are already teaching the school based work integrated learning at 1st year level. In this research, three lecturers who lecture on the course were purposively selected. The three lecturers were all working with on line courses, preparing the pre-service teachers for their experience of the primary school classroom for the first time during their course. The faculty allocates teacher educators to work in teams in the teaching of different year levels (years 1, 2 &3). The selected three teacher educators are, therefore, relevant for the study, as they have been involved with the training of year 1 pre-service teachers. The participants are between the ages of 45-55 and they are all females. Two of them have more

than 15 years of teaching experience in the university sector. Each participant was allocated a pseudonym in order to protect his or her identity.

Data Collection

Data were collected from individual semi-structured interviews and documentation. Semi-structured interviews are designed to obtain subjective responses from the participants on the phenomenon under investigation (MacIntosh & Morse, 2015). In this research, individual interviews were conducted with a set of guiding questions, which were used to guide the interview. The interviews were recorded and transcribed. The documents, from which data was collected, included module outlines, student assessment guides and e-mail communication from pre-Service Teachers.

Data Analysis

The transcriptions from the interviews were firstly read in order to get a sense of the responses from all participants. Thereafter, the transcripts were re-read and emerging themes were noted. The themes were then coded and grouped according to the relevant research question(s). During document analysis, the documents were scrutinized for information pertinent to the research questions. Qualitative data analysis for this case study is grounded on an interpretive philosophy. Generally, in research, there are various methods of data analysis and this study employed two, considered the most relevant. These are content and phenomenological data analysis methods, only because they are related to this type of study, which is qualitative in nature. Phenomenological data analysis was used to bracket responses that bear similarity to present them together. Data collected was, therefore, analyzed, presented and discussed within the themes and subthemes identified to answer the research questions. All the identical responses to questions were bracketed together and presented together according to similarities. Analysis of interview transcripts were based on an inductive approach. Intrepretive analysis on transcripts was done using content method of analysis.

FINDINGS AND DISCUSSION

The three research questions and subsequent discussion and findings will be discussed in this section.

What instructional methods did teacher educators use in the preparation of Pre-Service Teachers prior to the shift to online-learning?

As alluded to earlier in this paper, teacher training curricula is designed to develop a set of competences in pre-service teachers over a set period of time (Cuenca, 2010). This process starts in year 1 of the qualification. In 2018, the Faculty of Education at the institution, where the study was conducted, rolled out a newly re-curriculated Bachelor degree in foundation phase studies, in line with the policy on the minimum requirements for teacher education policy ((Department of Higher Education and Training, 2015). The introduction of the re-curriculated

qualification in intermediate phase studies followed in 2019. This necessitates a discussion of practice prior to the move to online learning.

It must be noted that, prior to the move to the online platform, more teacher educators were allocated to the course. The preparation of Year 1 pre-service teachers prior to COVID 19 was the responsibility of 9 teacher educators organised into 3 teams under the leadership of a lead teacher, in 2018. The introduction of the re-curriculated qualification in intermediate phase studies followed in 2019. With the introduction of the intermediate phase qualification in 2019, the team-teaching approach was abandoned and phase groups were taught separately. In the time-period 2020 – 2021, a team of 4 academics taught the module to a combined group of foundation and intermediate phase students with a marked increase in student numbers. The following section will provide a discussion of the teaching and learning practice prior to the move to online learning.

Instructional approaches – Team Teaching approach (2018)
In 2018, six (6) teacher educators working in three teams were assigned to teach approximately 150 year-1 pre-service student teachers. Each team was led by a 'lead teacher' or team leader. Contact sessions, 90 minutes in duration, were time-tabled to take place on Monday afternoons in the second semester. These sessions were conducted over a 6-week period at the start of the second semester. The purpose of these sessions was to introduce and orientate Pre-Service Teachers to School Based Work Integrated Learning.

The team leader used a variety of instructional approaches depending on their individual teacher's character and preference. These methods included direct instruction; blended learning; group work; active learning, reading, reflective writing, plenary discussion, journaling, presentations, role-plays, and group tutorials. All members of the team would be present in the venue, with the team leader facilitating the session, whilst the other two team members acted as resource persons in support of the main facilitator.

One of the aims of the module was to develop the individual pre-service teachers' academic and reflective writing skills in the form of journaling. Pre-service teachers were required to continuously reflect, in writing, on key learning points, after each of the six sessions and every day during their 3 weeks at the school. The journals were submitted as part of the portfolios. Pre-Service Teachers were required to develop during their practical experience.

Group interactions were an important aspect of the individual student's engagement with the content of the modules. In addition to lectures and daily writing activities, students were required to form discussion groups to debate and 'sound out' thoughts and ideas. Each group was required to submit a group poster reflecting their school-based work integrated learning process after their observation period at the school. These posters formed part of the assessment regime for the module.

The assessment regime for this module was aimed at fully supporting the desired attributes in Pre-Service Teachers. Every aspect of the pre-service teacher's experience was

valued and assessed, as can be seen in the assessment regime extracted from the learner guide below:

Table 1. *2018 Assessment of SBW 121E – Extract from Learner Guide*

Formative Assessment Tasks		
Attendance at Contact Sessions		
Attendance of contact sessions of this module are mandatory. A mark reflecting attendance will constitute 10% of the mark toward this course.	Formative	10%
Host Teacher Review: Professional Conduct		
Your host teacher will complete a 10 item assessment of your professional conduct, indicating whether or not you arrived on time, behaved appropriately, and treated children, teachers and others in the school community kindly and with respect. The mark of this assessment will account for 20% of your mark toward this course. See Host Teacher Assessment in your Student Guide for this course.	Formative	20%
Written Assignment / Group Project		
There will be one written assignment or group project assigned by your lecturer team	Formative	10%
Summative Assessment Task: Portfolio Submission		
Organisation and neatness of portfolio		5%
Evidence of careful notetaking (observation schedule and note book)		10%
6 reflective pieces (180-250 words) (5% each)		30%
Summative Reflection (750 words)		15%

Instructional approaches – One lecturer – one class (2019)

With the introduction of the intermediate phase qualification in 2019, the 6-member staff team assigned to work with the Foundation Phase Group in 2018 were split into 2 groups of 3 staff, one for the foundation phase and one for intermediate phase. Only one of the staff members involved with the group the previous year stayed on as part of the teaching team. In 2019, the idea of a 2 -3 member team working on one class with a group was amended due to an increase in student numbers and the lack of staff members. The instructional time remained the same as that of 2018.

In 2019, the instructional approaches to developing the desired competences followed more of a lecturing approach, with the lecturer responsible for preparing and presenting material. One of the drawbacks of assigning one teacher educator to a group of Pre-Service Teachers was that there was only one instructional leader present in a session. The content

stayed the same but the assessment regime changed, as it proved to be over-ambitious and bulky.The following extract, from the assessment rubric for 2019, reflects the shift in assessment focus, in comparison to what was expected from the 2018 cohort.

Table 2. *School-based work integrated learning experience rubric - 2019*

COMPLETE & NEAT: (Compliance with formatting requirements)	No	Yes
Instructions for structure adhered to: labelled file + Contents Page + 5 Signposted Sections		
Overall neat/professional presentation		
Declaration of Professional Ethics		
Section 1: Attendance Register with School Stamp		
Section 2: Daily Record with School Stamp		
Section 3: Host Teacher's Summative Evaluation		
Section 4: Observation Essays (9)		
Section 5: Summative Reflective Task		

OBSERVATION ESSAYS					
0 – No Evidence**; 3**- Poor; **5**- Adequate; **7**- Good; **10**- Excellent					
The Classroom Environment A well substantiated description and reflection on the organisation of the classroom environment. A well substantiated description and reflection on a typical classroom day. A well substantiated description and reflection on the classroom management strategies used by the host teacher.	0	3	5	7	10
Children and Learning Learning Interactions: Speaking Learning Interactions: Reading and Writing Thriving versus struggling learners Language	0	3	5	7	10
Teaching and the Organisation of Lessons Mathematics Lesson Home Language/First Additional Language	0	3	5	7	10
Self-Reflective Task An authentic self-reflection report indicative of what was learnt, what gaps were identified and a clear strategy on how the gaps will be addressed.	0	3	5	7	10
TOTAL (100 marks)					

How did teacher educators adapt their instructional methods to an online setting?

In 2020, the team involved in the teaching of SBW 121E were faced with taking new entrants into the profession through their first exposure to the practical component of teacher training in an online-setting. The members of the SBW 121E team included two teacher educators, with a foundation phase focus and two teacher educators, with an Intermediate phase focus. In 2021, the teaching team membership changed to four members on the team. The instructional time per week stayed at one 90 minute lecture per week.

For content, which was more generic in nature, both phase groups were combined into one online session. Each member of the team was responsible for teaching one of the 4 generic curriculum themes to the entire first year student cohort, using the online platform. Every member of the teaching team attended every session. Each session had a lead teacher, with the rest of the team playing a supporting role, which included alerting the presenter to raised hands and issues raised in the chatroom. The fifth theme, which was phase specific, was taught by either the 2-member team, representing the Foundation Phase, or the two-member team, representing the Intermediate Phase, on the same platform on different days.   For this presentation, the students were split and only attended one of the sessions. The on-line setting required that sessions be created on the e-learning platform and all participants be sent the link in-order to join sessions. The team leader was responsible for creating sessions and uploading all content.

The decrease in staff and the increase in the number of first year Pre-Service Teachers resulted in the online environment approach changing to predominantly lecture mode. The lead presenter would present content and only stop if alerted by the team, if there was a hand or a question raised in the 'chat box'.

What were the successes/challenges teacher educators experienced during the transitioning from face-to-face to online learning platforms?

The shift to online learning was not without its successes. Firstly, the teacher educators worked successfully as a team and all content was uploaded onto the e-learning platform. This included everyone assisting with team teaching and assisting each other with technical issues. The shift to online learning meant that the teacher educators had to quickly improve their technological skills and competence. Teacher Educator 1(TE 1) noted, "*Wow, if I remember what I knew then [before COVID 19] and what I know now there is no comparison. I am so much more competent. I have even become used to teaching 'faceless' students.*"   While some of the teacher educators had limited experience with the online platform, they had to adapt too.   Teacher Educator 2 (TE 2) noted:

> I had used the online platform but mainly for putting up notes and readings. I had never used it for teaching and assessing. Fortunately, we had some experts and our institution was able to provide us with some training. I also learned from my colleagues. The ones

who were more advanced than me. When I had a question, I would ask them and they would help me.

Furthermore, the on-line learning also meant that the teacher educators were not tied down to a specific venue and teaching slot, which allowed for more flexibility and scheduling of classes during optimal connectivity times.

Student migration and attendance to the online platform was successfully done, the issue of data was circumvented (but not eliminated) with cell phone providers providing zero rated data and with funded students, each receiving a laptop. Furthermore, lectures were recorded and students could go back and ensure that they understood the lecture, a resource that they did not previously have at their disposal.

The pandemic, over the past two years that this study covers, caused severe psychosocial stress leading to depression, fear, lack of resources and economic instability (Maruta et al., 2021). The resumption of classes meant that the online/e-learning platform provided a distraction, as both the teacher educators and the pre-service teachers could concentrate on online classes with their academic studies resuming, albeit in a new format.

However, despite these successes, a number of challenges were encountered. The move to the e-learning platform was successful, but it only worked as long as the teacher educators and pre-service teachers had connectivity and the necessary technological skills. Even though they are provided with a laptop, many students had not had the advantage of being exposed to technological skills or sufficient technological skills that they needed to make the shift during their high school career. The majority of the pre-service teachers had come from disadvantaged areas and had never operated a laptop, let alone attended online classes. Initially, many students could not log on, were not in the correct course room or logged on late. Teacher Educator 3 (TE 3) noted: "They arrive late and proceed to query matters which was dealt with at the start of the session. This disrupts the flow of session. Late arrivals disrupt the flow of the class."

In addition, based on the individual's access to a stable internet connection, as most participants connected from home, staff and students alike experienced connectivity challenges, as well as intermittent load shedding in 2021. TE 2 noted:

> I was in the middle of my lecture, using the online platform, and had assigned a group task. It was a disaster. I put the students into groups and then had to redo the groups as the Pre-Service Teachers experienced load shedding and one or two groups only had one participant in it. It did not work at all. At other times, student's connectivity is low and they have to reconnect all the time. This means that sometimes they miss 10% of the lecture. I sometimes find it easier to just lecture.

The teacher educators also noted that additional technical issues included pre-service teachers not being able to activate their microphone or not able to hear presenters and losing connectivity. Furthermore, the impersonal nature of listening to a lecturer through a computer

screen is an additional shift that students needed to make. Due to issues of bandwidth, everyone, including the presenter, worked 'invisibly' with cameras switched off. Only the projected presentation could be seen on the online platform. The lack of human interaction can be alienating, for both the pre-service teachers and for the teacher educators, as they are used to being aware of the classroom atmosphere and facial expressions in order to gauge the effectiveness of their lecture.

The issue of answering question(s) was an added disadvantage. When the lead presenter posed questions, the support team would identify who needed to answer the question. The pre-service teachers' reaction, when they were called upon to answer the question or were unwilling to answer, would often be to disconnect; leave the session or use the excuse that their microphone did not work. TE 1 noted:

> I found it frustrating when students ignore questions in the online setting, they just keep quiet. At least when I am in a classroom, I can ask someone, or I can physically move to the student and ask them to answer the question. We do not have this in an online setting.

Student attendance at these sessions was low. The pre-service teacher would report that they were attending other lectures, or incorrectly logged onto the incorrect lecture not dealing with their teaching phase. This was not desirable, as the attendance numbers reflected incorrectly. In addition, pre-service teachers took advantage of the fact that lecture sessions were recorded and did not always attend classes and sometimes missed information that was dealt with in a previous session.

The decrease in staff to student ratio adversely affected the course. In 2020, six staff were allocated to teach on the course. This number decreased in 2021, with only 4 teacher educators being responsible for in excess of 300 students. The decrease in allocated staff members was not an issue during virtual lectures, however, it became a challenge during the assessment of the 300 students' portfolios.

Kolb (1984) refers to a cycle of learning as including knowledge internalization, application of knowledge, and analysis and synthesis of knowledge and activity. School based work integrated learning is in essence a cycle of learning. It requires pre-service teachers to actively engage and reflect on their experiences. Traditionally, preservice teachers learn theories, pedagogies and practical strategies from lectures and within lectures, prior to their work integrated learning sessions at schools. The lectures provide an opportunity for lecturers to demonstrate good practice that they expect the pre-service teachers to use. The work integrated learning component is, therefore, essential in providing an opportunity for the application of learned knowledge and is a key element that allows for experimentation between knowledge and practice. One of the major challenges of moving to the e-learning platform was the fact that, in 2020, pre-service teachers were unable to do their teaching experience within an authentic school setting. This meant that pre-service teachers could not experience hands-on teaching, gain experience and develop their professional skills, such as classroom

management and planning and assessing (Ersin et al., 2020) and applying the knowledge from lectures.

In 2021, first year students were able complete their school-based work integrated learning component, however, this was during what was known as the "third COVID wave", which meant that COVID infections were high at schools, with teachers and learners becoming infected and schools having to close while they were being sanitised.   The following communique (Figure 1) was received in 2021 from the first-year class representative.

Subject: SPREAD OF CORONA VIRUS IN SCHOOLS

Dear Dr Roy

We hope this e-mail finds you well. Today has been the first day of our school experience as first year B-Ed students. It has been quite the experience, one to remember! Unfortunately there is a concern that keeps rising.

The spread of COVID-19 in schools has become inevitable. We are based in a small town and regardless of the size of the town or city, schools are eventually going to close respectfully. The school that we are currently at had grades 4 - 6 tested. Only the grade 7 classes will be attending school until further notice.

The schools try their best to adhere to COVID-19 protocols.

Yours in education

Figure 1. *Email from the first-year class representative*

The Figure 2 illustrates the COVID infections and subsequent educational disruptions that occurred in a local school during the work integrated learning period.

COVID 19 – SCHOOL and CLASS CLOSURES

DATES	REASON/CLASS
Monday, 2 August	Grade 5 – ▆▆▆▆▆▆▆ class
Friday, 13 August	Grade 2 – M▆▆▆▆▆▆ class
Friday, 13 August	Grade 3 – Mrs Barnes' class
Friday, 13 August – Tuesday, 24 August	Grade 1 – M▆▆▆▆▆▆'s class
Monday, 16 August	School was closed for deep cleaning and fumigation.
Monday, 16 August – Friday, 20 August	Grade 2 – ▆▆▆▆▆▆▆ class
Friday, 19 August – Tuesday, 24 August	School was shut down for 5 days due to the current COVID cases at the time.
Wednesday, 18 August	▆▆▆▆▆▆ Petrus (FORT HARE STUDENT) tested positive. Grade 4 – ▆▆▆▆▆▆▆

Figure 2. *COVID-19 infections and subsequent educational disruptions in a local school*

A number of students became infected with COVID 19 while they were at schools and this impacted on their school experience too. The following e-mail (Figure 3) from a student states that she had to self-isolate, as the host teacher was positive for COVID 19.

Good Morning Ma'am,
I hope that you're in good health.

Yesterday was my first day at ▆▆▆▆▆ Primary School, and my host teacher received COVID-19 results later the afternoon testing positive. I have been in close contact with her and spoke to the principle and he advised me to isolate for the next 10 days and test when I show any symptoms.
I would like to know what the way forward would be with regards to my School Experience and what are the necessary documents I need to send to the University due to my absence at school.

Regards

Figure 3. *E-mail from a student*

An added factor during their first experience at school was the fact that many teachers became infected with COVID. This meant that many Pre-Service Teachers did not have a mentor teacher to assist them with the transition into the classroom. In addition, despite having no prior experience, school principals and leaders often placed these students in charge of classes themselves. The School Based Work Integrated Learning was, therefore, a period of stress, fraught with a number of disruptions for many Pre-Service Teachers. As a result of this, even though they did manage to attend schools, the period was disrupted and the learning was, therefore, not consistent.

The submission of tasks, using the online platform, was an added challenge. Pre-Service Teachers were not used to this platform and often submitted their work in a format that could not be opened on the online platform. Furthermore, the online platform did not accept late submissions. This resulted in additional work for the already burdened 4 teacher educators, as they now had to communicate each issue to the Pre-Service Teacher. Not all Pre-Service Teachers responded to the communique, which resulted in a number of students receiving a zero mark for the course, which then had to be amended later. In addition, not all teacher educators were comfortable with the shift to marking online nor were they adequately conversant with the e-learning platform and, as a result, downloaded students' tasks, which resulted in the downloaded work being deleted from the system.

Figure 1 below shows the increase in student numbers from 2018 to 2021. In addition, the number of pre-service not meeting the 50% pass requirement increased, which meant that the failure rate in 2021 was much higher than in the preceding years. Furthermore, the failure rate amongst Pre-Service Teachers tends to be lower among students registered on the Bachelor in Foundation Phase Teaching (FPT) than students registered on the Bachelor in Intermediate Phase Teaching (IPT).

Table 3. *Student numbers from 2018 to 2021*

Year	No. of Teacher educators	No of Student enrolled	Students who achieved a course mark less than 50 %
2018	6	150	5
2019	6	300	2(FPT)
			10 (IPT)
2020	5	352	4(FPT)
			5(IPT)
2021	4	402	62

DISCUSSION

What instructional methods did Teacher Educators use in the preparation of Pre-Service Teachers prior to the shift to online-learning?

This research revealed that, at the university where the research took place, there has been a significant increase in the number of students enrolled on the course, but the staff compliment was not increased exponentially. The Council for Higher Education (2016, cited in Johnson et. al., 2016) notes that this phenomenon is a current trend in South Africa as well as globally. This has the added challenge of students who enter university not always being the strongest students academically (Taylor, 2021). This means that more and not less staff are required to address the deficit and prepare students for their school-based learning.

Human resource allocation

There was a significant increase in the number of Pre-Service Teachers, but the teacher educators allocated to the course decreased from 2018. The preparation of Year 1 Pre-Service Teachers prior to COVID 19 was the responsibility of 9 teacher educators organised into 3 teams under the leadership of a lead teacher in 2018. With the introduction of the Intermediate Phase qualification in 2019, the team-teaching approach was abandoned and phase groups were taught separately. In the time-period 2020 – 2021, a team of 4 academics taught the module to a combined group of foundation and intermediate phase students, with a marked increase in student numbers.

Instructional Changes

The move from a face-to-face instructional time approach to the online platform was a necessity, given the COVID pandemic. The instructional time for the classes stayed the same, except for online sessions. However, prior to the pandemic, the preparation of the students for the practical experience at schools was face to face instruction. In these sessions, the relevant staff members could model appropriate pedagogical approaches face-to face, with the student observing. Modelling appropriate practices has long been seen as an appropriate method for preparing pre-service teachers (Couso & Garrido, 2017; Lunenberg et al., 2007; Aleccia, 2011). Modelling appropriate teaching practices to preservice teachers provided the teacher educations with the opportunity to demonstrate specific and appropriate teaching practices during lectures. The shift to online learning in 2020 and 2021 meant that the modelling of classroom techniques and teaching was no longer an option and alternative methods had to be implemented. Pedagogical strategies used for teaching on an online platform are not always pedagogical strategies appropriate for the face-to-face nature of a school classroom. On-line learning incorporates a different skill set from face-to face learning (Okeke et al., 2022).   While virtual learning is effective, it lacks the modelling of appropriate classroom strategies for pre-service teachers.

Assessment practices

The assessment of the module, in 2018, included both formative and summative aspects, with every aspect of the training being valued. The development of reflective practice through daily journaling, during the preparation period and practical school experience, was a crucial aspect of the module. Allowing pre-service teachers to be placed in schools for a period of time has been actively promoted, as it provides the opportunity to observe a teacher in action, for the student to teach and reflect on their teaching and translate theoretical ideas into practice (Sasaki, 2020).

In 2019, there was a shift in assessment practices with less formative assessment and a reduction in the number of summative tasks. The assessment changed in 2020, from pre-service students not undertaking School Based Work Integrated Learning experiencing, and, instead, producing four (4) assignments as the means of a summative assessment. This meant that one of the major components of hands-on training in the classroom, which was meant to prepare them to manage their own class in the future, was absent. While simulated learning was used to address the fact that pre-service teachers could not do their school experience, these measures cannot replace the reality of teaching a classroom of children (Ersin et al., 2020). Furthermore, the 2020 cohort of students have had less practical experience of being in a classroom, which could have implications later on.

In 2021, pre-service teachers did attend schools, however, the assessment was in the form of an e-portfolio. The online assessment process was handled differently by individual members of the teacher educator team. The majority of the team opted for online assessment with a rubric, whilst one of the team preferred to have submission printed out. The teacher-educator, who had to print out the forms highlighted the fact that they lacked the necessary skills and knowledge to adequately deal with the e-platform. This could adversely affect the effective functioning of the course. Lee et al. (2020) found that teacher educators did not always have the necessary technological skills to support the online learning, assessment and engagement of students. Many pre-service teachers did not know how to upload the document in an appropriate format, resulting in the assessment process being more complex. This indicated that, a year later, pre-service teachers were still not conversant with the on-line platform.

RECOMMENDATIONS

School based work integrated learning is an integral part of any pre-service teacher's training and, therefore, an appropriate staff-student compliment is essential. In order to negate the alienating and impersonal nature of the e-learning platform, a hybrid approach should be implemented, with both e-learning and face-to-face lectures being conducted. Furthermore, the pairing of a Bachelor of Education 4th year student with a first-year student as a mentor would assist in, not only humanizing the course, but also providing the student with added guidance. In order to mitigate the problem that students have of submitting their work using the e-

learning platform, more detailed guidance and training should be provided to the pre-service teachers. The use of formative as well as summative assessment, as well as the use of reflective essays should be used as part of the assessment process.

CONCLUSION

No one was prepared for COVID 19 and the shift to an e-learning platform, however, teaching pre-service teachers using the online learning platform presented a number of challenges. Therefore, in order to not only ensure that we enter and stay abreast of the 4th industrial revolution and potential future pandemics, as well as ensuring that pre-service teachers have sound pedagogical knowledge, a hybrid or blended approach be used for the teaching of courses.

REFERENCES

Adu, K. O., Badaru, K. A., Duku, N., & Adu, E. O. (2022). Innovation and Technology: A Panacea to Teaching and Learning Challenges during the COVID-19 Lockdown in South Africa. *Research in Social Sciences and Technology*, 7(1), 69-89.

Campbell, S. G., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., & Walker, K. (2020). Purposive sampling: complex or simple? Research case examples. *Journal of Research in Nursing*, 25(8), 652 -661.

Creswell, J.W. 2013. Research design: Qualitative, quantitative, and mixed methods approach. *Thousand Oaks: Sage publications.*

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches.* Sage publications.

Johnson, L., Becker, S. A., Cummins, M., Estrada, V., Freeman, A., & Hall, C. (2016). *NMC horizon report: 2016 higher education edition* (pp. 1-50). The New Media Consortium.

Couso, D., & Garrido-Espeja, A. (2017). Models and modelling in pre-service teacher education: Why we need both. In Springer International Publishing AG 2017. *Cognitive and affective aspects in science education research* (pp. 245-261). Springer, Cham.

Cuenca, A. (2010). Self-Study Research: Surfacing the Art of Pedagogy in TeacherEducation . *Journal of Inquiry & Action in Education*, 3(2), 15 - 29.

Department of Higher Education and Training. (2015). Revised Policy on the Minimum Requirements for TeacherEducation. *Government Gazette*. The Government Printing Works.

Dreyer, J. (2015). A positive and enriching teaching practice experience. In M. J. Taole (Ed.), *Teaching Practice, perspectives and frameworks* (pp. 3-10). Van Schaik Publishers.

Dube, B., Makura, A., Modise, A., & Tarman, B. (2022). COVID-19 and the Quest for Reconfiguration of Disciplines: Unpacking New Directions. *Journal of Culture and Values in Education, 5*(1), i-viii. https://doi.org/10.46303/jcve.2002.12

Ersin, P., Atay, D., & Mede, E. (2020). Boosting preservice teachers' competence and online teaching readiness through e-practicum during the COVID-19 outbreak. *International Journal of TESOL Studies*, *2*(2), 112-124.

Evans, B. (2014). Qualitative descriptive methods in health science research. *HERD: Health Environments Research & Design Journal*, *9*(4), 16-25.

Gqokonqana, O., Olarewaju, O., & Cloete, M. (2022). Blended Learning Challenges during COVID-19: A Case of Cost Accounting 2 Students at a Selected South African Higher Education Institution. *Research in Social Sciences and Technology, 7*(2), 87-107. https://doi.org/10.46303/ressat.2022.11

Gilakjani, A. P. (2013). Teachers' Use of Technology and Constructivism. *International Journal of Modern Education & Computer Science,* 5(4*).* 166-184.

Jones, L., Durham, C., & Cataneo, A. (2021). Rising to the Challenge: Preparing Pre-service teachers During a Global Pandemic. *The New Educator*, 17(4), 375-393.

Kolb, D. A. (2014). Experiential learning theory: Previous research and new directions. In Robert J. Sternberg, Li-fang Zhang (Eds.). *Perspectives on thinking, learning and cognitive styles* (p. 227 - 248). Routledge

Lee, S., Saavedra, J. & Chakroun, B. (2021). *Skills development in the time of COVID-19: Taking stock of the initial responses in technical and vocational education and training.* Geneva: International Labour Organization and World Bank

Maruta, N. M. (2021). Psychological Factors and Consequences of Psychosocial Stress During the Pandemic. . *Wiadomości Lekarskie, LXXIV (9) part 1,* .

Okeke, A. O., Onu, W. O., Ukalla, G., Anekpo, C. C., Ngwu, N. A., Ugwu, C., & Joannes, A. N. (2022). The Predictive Influence of Interest in Online Learning of Pharmacy Students' Achievement in General Biology. *Journal of Pharmaceutical Research International*, 19-30.

Omrod, E. E. (2016). The flipped classroom: a critical appraisal. *Western Journal of Emergency Medicine*, *20*(3), 527.

Rollnick, M., Bennett, J., Rhemtula, M., Dharsey, N., & Ndlovu, T. (2008). The place of subject matter knowledge in PCK - A case study of South African teachers teaching the substance and equilibrium. *International Journal of Science Education, 30(10)*, 1365-1387.

Sasaki, R. H. O. N. N. I., Goff, W., Dowsett, A., Parossien, D., Matthies, J. U. S. T. I. N., Di Iorio, C., ... & Puddy, G. E. M. M. A. (2020). The practicum experience during Covid-19– Supporting initial teacher education student's practicum experience through a simulated classroom. Journal of Technology and Teacher Education, 28(2), 329-339.

Taylor, C. (2021). *The explanation of behaviour*. Routledge.

Vygotsky, L. S. (1962). The Development of Scientific Concepts in Childhood. https://doi.org/10.1037/11193-005. Havard University Press.

Weber, N. D., Hersh C., W., Brown, D. B., & Kelly, L. J. (2016). Informing Teacher Education through the use of multiple classroom observation instruments. *Teacher Education Quaterly*, 91 - 106.

Yanow, D., & Schwartz-Shea, P. (2014). Interpretive analysis and comparative research. In *Comparative policy studies* (pp. 131-159). Palgrave Macmillan, London.

Zeidler, D. L. (2002). Dancing with Maggots and Saints: Visions for Subject Matter Knowledge, Pedagogical Knowledge, and Pedagogical Content. *Journal of Science TeacherEducation*, 13(1), 27-42.