



Work-Integrated Learning in a Changing Educational Context

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ABSTRACT

Teaching, while acknowledged to be a noble career, can be a very difficult path. Preservice teacher educators are tasked with the immense duty of transforming preservice teachers into pedagogues that could and should make a difference to the lives of those they interact with. As teacher educators, we must strive to create continuing support and shared accountability, so that preservice teachers will be empowered as effective educators to extend themselves to ensure that the learners at schools attain their highest goals. This research looked at the way Work Integrated Learning (WIL) aides in this process. After the necessary ethical issues were addressed and permission obtained to conduct the study, final-year undergrad students, inservice teachers, and staff were encouraged to participate in this interpretative study. They were required to respond to an online questionnaire and a sample of participants was interviewed. The results are not unexpected and reinforce the idea that WIL learning has to adapt to the evolving technological culture that pervades all of society.

KEYWORDS

Mentoring; preservice teachers; school-based learning; teaching practice; work integrated learning;

INTRODUCTION

The preparation of educators through effective teacher education programs is a critical element in improving educational outcomes. Teacher education serves as a powerful lever in raising the quality of teaching for learner success. As teaching becomes more complex in response to evolving societal and technological needs (especially with the advent of artificial intelligence in the 21st Century), the training of future teachers must continually adapt to equip educators with the skills necessary to meet these demands. Innovation must include the ability to (re)visualize work-integrated learning (WIL) beyond the current, traditional sense of academics visiting and evaluating our students *in* a classroom. Teaching in the 4IR requires greater thought and application. There is a gradual increase in the complexity in teaching environments as the technological resources increase exponentially. Teacher development institutions must respond simultaneously to these rapid changes.

This paper explores the role of WIL in teacher education, focusing on how these components prepare preservice teachers for the challenges of the modern classroom. The terms teaching practice and work-integrated learning will be used synonymously hereafter. The overarching objective of this study was to explore how preservice and in-service teachers are prepared for, and experience WIL in the 4IR. A second objective was to explore academic staff experiences of WIL at a higher education institution in KwaZulu-Natal, South Africa. The aim was to find ways to transcend the mediocrity that pervades WIL programmes at higher educational institutions.

LITERATURE REVIEW

WIL is a vital component of teacher education. Many professional programmes at Higher Educational Institutions include a work-based, on-site component. The rationale for this is that theoretical knowledge alone cannot guarantee success in the profession. Bowen and Drysdale (2017, p. xvii) capture the essence of WIL when they state that “*work-integrated learning (WIL) has been a globally recognized pedagogical approach for helping students test their skills and knowledge in a real-world work environment*”. Often, this follows a prolonged process of theoretical learning. Simply learning theory cannot guarantee the ability to step into a teaching context, and enact effective lessons that will ensure someone’s knowledge is transformed. All of this is complicated by the innovations unfolding daily. The purpose of WIL is to develop competence, that is, the ability to apply knowledge and skills to the demands of real life. More importantly though, “work-integrated learning is a pedagogical practice whereby students come to learn from the integration of experiences in educational and workplace settings” (Billett, 2009). Work Integrated Learning provides the ideal conduit for preservice teachers to find ways of assimilating theory and practice and to prepare them for the world of work. According to Kiggundu and Nayimuli (2009), WIL provides student teachers with essential experience within real teaching and learning environments, helping them develop confidence and adaptability as future educators. Aglazor (2017) emphasizes the importance of this experience, describing WIL

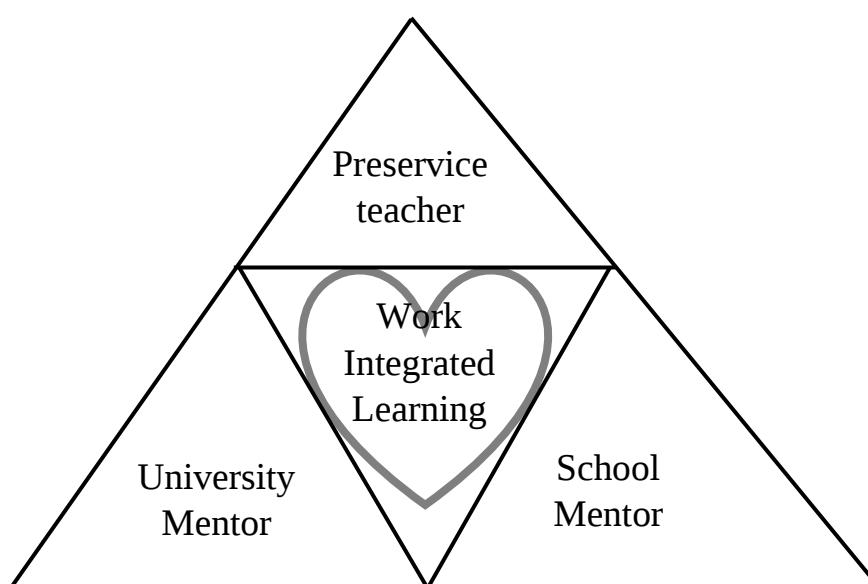
as an opportunity for aspiring teachers to comprehend the intricacies of the “business of schooling,” which includes pedagogical, managerial, and administrative aspects. Koross (2016) points to the increasing complexity of teaching, with demands on teachers to design learner-centred classrooms that address the needs of diverse students. This complexity has led universities and schools of education to explore innovative approaches to teacher education, including the development of more robust teaching practice components (Koross, 2016; Mabungela & Mtiki, 2024; Mpu et al., 2022). The introduction of innovations, particularly in the context of the 4IR, is essential. Teachers must not only be prepared for traditional classroom environments but also for rapidly changing educational technologies that require creativity and adaptability (Dlamini & Tsotetsi, 2024; Mabungela & Mtiki, 2024; Nomnga, 2024).

Various factors influence how a student navigates the workplace, including context, practice, background, and experience. Thus, Work Integrated Learning has become an important component of professional programmes. The South African Board for People Practices (2014, p 3) defined Work-integrated learning (WIL) as the “umbrella term for any purposefully-designed learning programme that integrates theoretical knowledge with authentic practice in the workplace. Svensson and Östlund (2007), as cited in Gellerstedt and Arvemo (2014, p. 83) claimed that “work-integrated learning can be described as a pedagogical philosophy that emphasizes the values and quality gained by integrating theoretical studies with work-life experiences”.

WIL in the context of this study, refers to an intensive programme that links preservice teachers to purposely chosen schools that can provide the students’ opportunities to practice their theoretical learning in an actual or pseudo-school context.

Figure 1.

The heart of Work Integrated Learning



Every student is assigned a mentor, and there is a relationship between the preservice teacher and the university mentor, which begins before the actual WIL practice session. This relationship should and could begin in the first year of a student's study. There is also a link between the student and the school mentor, which begins during WIL. The University Mentor and School Mentor do not have a relationship and seldom communicate with one other. What would be ideal is for the parties to have conversations to offer the preservice teacher the best assistance in becoming most effective in his/her career.

WIL is thus about the future practitioner getting the opportunity to apply the knowledge and skills learned in an academic situation to a real-life classroom situation. But this transition from theoretical learning to practical, hands-on teaching is often a difficult process. Dean (2023, p. 4) raised concerns about *"the initial teacher education curriculum in Australia and the extent to which it addresses the pragmatic needs of graduates in preparation for the school classroom"*. However, Dean (2023, p. 4) also agrees that *"engaging university students in practical experiences in a school and classroom setting is valuable for effective teacher preparation"*. Is this sufficient? Should we not interrogate the extent to which the classroom practical experiences resemble the actual practices of teachers?

Requirements for WIL

The Revised Policy on The Minimum Requirements for Teacher Education Qualifications (Government Gazette, No. 34467, 15 July 2011, p. 23) clearly stipulates what is expected of all students in terms of WIL.

School-based WIL, including supervised and assessed teaching practice, constitutes an essential part of the BEd programme. In a full-time contact programme, students should spend a minimum of 20 weeks and a maximum of 32 weeks in formally supervised and assessed school-based practices over the four-year duration of the degree. In any given year, a maximum of 12 such weeks could be spent in schools, and at least three of these should be consecutive. In part-time or distance mode programmes, students may be physically in schools for longer periods - for example, if they are employed as unqualified or under-qualified teachers. However, the same amount of supervised and assessed school-based practice is required.

The basic requirements for WIL must be fulfilled in terms of the period spent at schools and institutions risk losing accreditation for wilfully ignoring the basic requirements.

THEORETICAL FRAMING

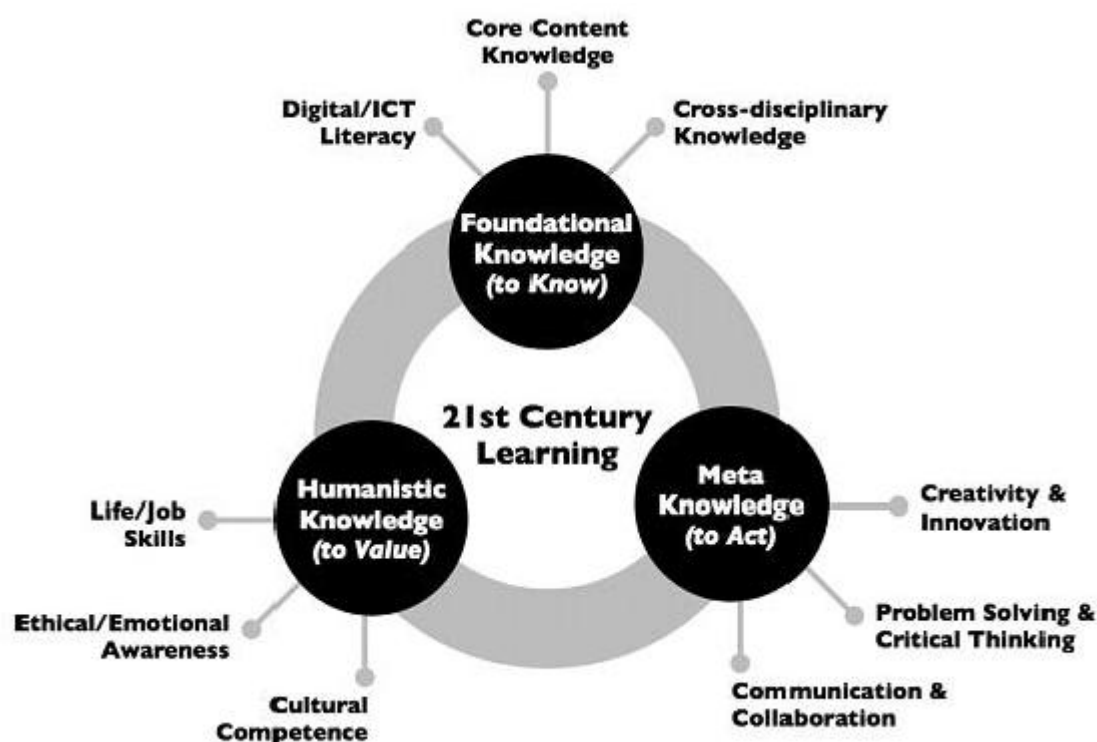
The selection of WIL practices should be based on an underlying theoretical framework rooted in past and current theories on teacher practices, both at the classroom level (teaching practices) and the school level (professional learning communities, with professional development and shared practices to improve teaching) [OECD, 2012].

This research was motivated and influenced by *The Framework of Frameworks* theory (Refer to Figure 2), as espoused by Kereluik et al. (2013). This theory is the result of the analysis of 15 different theories, and this review led to the identification of three broad categories with

three subcategories within them. The three broad categories are Foundational Knowledge, Meta Knowledge, and Humanistic Knowledge (Kereluik et al, p. 129). Foundational knowledge is the essential knowledge required for WIL by the preservice teachers, mentors and school personnel. This includes core content knowledge (including disciplinary knowledge), digital/ICT literacy and cross-disciplinary knowledge. This forms the core of the students WIL. The second category, Meta Knowledge, is the knowledge of the process of working with the foundational knowledge. Acting on this foundational knowledge can occur in terms of three subcategories: Problem Solving & Critical Thinking, Communication & Collaboration, and Creativity & Innovation. The final category is Humanistic knowledge. This form of knowledge refers to how the preservice teacher values the Foundational knowledge. The three main subcategories that arose under this broader rubric are: Life/Job Skills/Leadership, Cultural Competence, and Ethical/Emotional Awareness.

Figure 2.

Synthesis of 15 different 21st Century learning frameworks into one visual image



(Kereluik, et al., 2013, p. 130)

METHODOLOGY

This study employed a qualitative method, within the interpretivist paradigm, to generate data on the experiences and perceptions of pre-service teachers, in-service teachers and academic staff, regarding the role of WIL in teacher education. A Google Form survey was developed with specific questions relating to the actual experiences of the pre-and in-service teachers. It

comprised 34 questions and was developed by the researcher and, it was further validated by academics involved in WIL at six other institutions and it was presented at a workshop attended by researchers, to establish the document's reliability and validity. The questionnaire was also adapted to include staff members. The fourth-year student population exceeded 1300 students, but one module comprising 83 students was purposefully selected because these students had all just completed their final year 12-week WIL session at schools. This was also convenient for the researcher who had easy access to them due to the proximity of the institution. Eleven academics at the same institution were approached for consistency of data. Thirty-two newly qualified in-service teachers were also approached to respond to the questionnaires. Eventually, only 5 staff members (1 male and 4 females), 22 final-year (10 females and 12 males) (preservice teachers), and 26 in-service teachers (17 females and 9 males) responded. The survey questions addressed various aspects of WIL and the integration of digital technologies into teacher preparation. Twelve final-year volunteer students were also interviewed further about their experiences.

Data was qualitatively analyzed using the interpretive paradigm. The data was grouped into broad themes initially and these were gradually reduced to fewer, more succinct themes. The thematic approach was discussed with participants at conferences and there was agreement that the themes were appropriate. The questionnaire was directed towards the main research question, namely, how preservice and in-service teachers are prepared for, and experience WIL in the 4IR.

Sample questions asked are: *Are preservice teachers taught to critique, reflect, and explore the evaluation reports and engage with feedback? Are Schools of Education doing enough to make prospective teachers become digitally literate? Should preservice teachers use cellphones or other devices to record lessons for discussions when they return to university?* The questions measured exactly what the research question expected and, through consultations with other researchers, it was evident that the results could be reproduced under similar contexts in different or the same location. The responses from the students were free of any fear because anonymity was established from the outset. No names were recorded, only pseudonyms and interviews were conducted telephonically.

RESULTS

Knowledge of WIL

The evidence indicates that all participants have experienced WIL in some form, either as students, academic supervisors/mentors, or as both a student and teacher mentor. All pre-service and in-service teachers (I will call them students hereafter) have experienced at least 12 weeks of being in schools. This was sufficient time for them to have a fair perception of the functionality of a teacher.

The survey responses indicate a clear understanding of WIL among participants. Most respondents defined WIL as the integration of theoretical classroom knowledge with practical

experience in real-world settings. This form of experiential learning enables pre-service teachers to apply teaching methods in actual school environments, enhancing their pedagogical skills and preparing them for their future careers as educators.

Participants emphasized that WIL allows students to bridge the gap between academic knowledge and the practical demands of teaching. Many noted that WIL provides an opportunity to refine their teaching strategies, gain hands-on experience, and build confidence in their ability to manage classrooms effectively. Furthermore, the responses indicated that WIL plays a crucial role in preparing teachers to navigate the challenges of a highly digital society, where the use of technology in classrooms is becoming increasingly important.

WIL in the digital society

Participants also perceived WIL as fitting well within a highly digital society due to its ability to blend academic learning with practical experience in real-world environments that increasingly rely on digital tools. Many respondents highlighted the importance of WIL in adapting to digital methods of learning, which fosters a more interactive and dynamic experience for students. By leveraging digital platforms, students engage with the curriculum more effectively, whilst enhancing their ability to work with technology in professional settings.

WIL plays a significant role in preparing students to navigate the demands of a modern digital workforce in well-resourced schools, where the use of technology is unlimited. It helps bridge the gap between academic knowledge and practical application, particularly in sections of the curriculum that cannot be easily demonstrated using physical manipulatives. Students gain exposure to digital tools and resources that they might not encounter in traditional classroom settings, such as virtual collaboration platforms and industry-specific software, enabling them to stay relevant in their respective fields. Students claim that they want to become relevant in the digital age, as one participant stated: *It allows students to adapt to digital tools, collaborate in virtual settings, and stay relevant in rapidly evolving industries.*

Some respondents emphasized the role of WIL in equipping future teachers with the necessary digital skills to thrive in classrooms that increasingly rely on technology. This includes familiarizing students with tools like interactive whiteboards, projectors, and e-learning platforms, which are integral to the modern education system. However, challenges remain, particularly in rural or under-resourced schools, where access to digital tools is limited, and the full potential of WIL in a digital society is not yet realized.

Despite these challenges, WIL allows students to gain critical soft skills and practical experience that enhance their employability. For instance, by working with digital tools in a structured learning environment, students develop competencies in problem-solving, communication, and collaboration, all of which are essential in today's digital workplaces. WIL also provides students with opportunities to experiment with new technologies in a safe environment, thereby allowing them to refine their skills before entering the workforce.

WIL is well-suited to a highly digital society, as it integrates technological advancements into the learning process, preparing students for the evolving demands of their future careers.

Through hands-on experience, WIL helps bridge the gap between theory and practice, ensuring that students are well-equipped to succeed in the digital era. The majority of the participants were convinced that the institution is doing enough to equip them with the skills to meet the digital demands of the 21st Century.

Experiences with School and University Mentors

Many preservice teachers reported positive experiences with their school mentors, and assessors, highlighting the significant role they played in their development as future educators. Mentors were seen as pivotal in helping students manage classrooms, understand educational guidelines such as CAPS and ATP, and develop effective teaching methods. Some found their mentors supportive and friendly, giving them time to observe others teaching to learn from them, and offering guidance on lesson planning and delivery.

However, experiences were varied. While many school mentors were hands-on, others were more detached, sometimes leaving students to handle classes independently without adequate observation or feedback. Some students viewed this as being positive because they felt that it showed that the mentors had trust in their abilities. But some academics had opinions that differed. One academic claimed: *some mentors (referring to teacher mentors) don't fully understand their role, they think students know what is expected and they leave them to be on their own for the entire duration after they introduce them to the students. As soon as students arrive the mentors believe that they are on holiday.* Another academic stated: *some mentors are just doing it for the sake of compliance and ticking the box*, which implies that they are not entirely dedicated towards the students' development and this is contrary to the generally accepted ethos of WIL.

The student participants felt that the academic mentors were usually more formal in their approach. While they instilled a sense of anxiety due to their role in grading, their feedback was mostly seen as constructive, providing students with the guidance they require to refine their teaching skills and better understand their strengths and areas for improvement.

Some students noted that while their mentors were helpful in guiding them toward becoming effective educators, there were occasional discrepancies in how mentors approached their roles. In some cases, mentors did not follow the expected protocol of allowing students to observe before themselves teaching the classes, which was challenging. One student communicated a useful anecdote of his experiences at two different schools, which showed the contrasting styles of school mentors. His message was:

My first school was a Post Model C [well-resourced public school] primary school and my second school was a rural school. My first mentor was amazing. I observed her teaching and after each day, we would meet up and she would explain why and how she did certain things so I could understand how to get information across to grade 7 learners. When I started teaching, she still gave me her utmost respect and time and we met up every afternoon so she could give me feedback for each lesson, until she barely had anything to critique. She observed every single

class i taught up to the very last day. The second mentor let me be, she only came to class with me once and I didn't observe her teaching style. I did everything myself.

This narrative endorses the earlier claims by the academics that some school mentors don't provide adequate support during WIL.

Despite these challenges, most students appreciated the support and advice they received. Many mentors were seen as key figures who helped students improve their lesson delivery, classroom management, and professional conduct.

I learnt a lot, I learnt that different schools have different resources and the true functionality of the school is guided by the resources that they have. But despite this, some are able to think outside the box and apply new innovative approaches with the little they have in their lessons.

This was not a widespread comment and was not something that everyone experienced. That is significant because it showed that there are teachers who, despite teaching in poorly resourced schools, they are still able to find innovative teaching methods.

During evaluations, preservice teachers reported that the focus was on assessing teaching quality, offering feedback on lesson plans, and helping students adopt innovative teaching strategies.

Overall, the role of mentors, in their role as guides, assessors, and evaluators was crucial in shaping the teaching practices of these student teachers. The guidance, support, and feedback the students received helped them grow both professionally and personally, preparing them to meet the challenges of the classroom with confidence. While some areas, such as the frequency of mentor visits or the degree of involvement from certain mentors, could be improved, most students had a positive experience, and their mentors played an essential role in their journey towards becoming competent and effective teachers.

University mentors versus school mentors

Most of the participants felt that there is a superficial difference between the university and school mentors. One candidate felt that *both opinions play a pivotal role in the development of a student teacher*. But one student expressed an extreme view that *the university mentors can sometimes expect more from a student teacher and expects(sic) us to teach like them*. If this claim by the preservice teacher is true, the assessment criteria need to be re-evaluated so that students are assessed as preservice teachers and not at levels beyond the basic expectations of a learner teacher. terms confuse the reader.

There was a serious claim made by a student that is important to note and should influence the discussions around the improvement of WIL.

The university academic primarily assesses and evaluates preservice teachers' performance, while the school mentor focuses on providing support, guidance, and mentorship in the school setting.

This claim was articulated by other students in different ways, implying that university academics are simply resolute in their desire to evaluate and assess the students through

observation of classroom practice and the scrutiny of their portfolios, whilst the school mentors are there to assist with collating the documents for their portfolios and, motivating the students during this period of WIL. The envisaged goal of WIL is that both the academic and the teacher mentor will provide the necessary guidance and motivation during the students' professional development.

Yes, university assessors are very strict when it comes to school work and how(sic) the portfolio looks like (sic). But school mentors motivate you to get the necessary documents in your file without being strict or too harsh about it

In my experience the school mentor is very able to assist me in teaching in the classroom and able to offer advice and constructive criticism in many aspects of the classroom and content. In my experience with the university tutor there has been less advice and input with regard to improving my teaching

The university assessor just grades your teaching and provides you with feedback whereas a school mentor guides you on how to go about teaching, provides you with ideas and feedback.

Only twenty-four students indicated that their university and school mentors actually talked to each other. Three out of the five academics spoke to teacher mentors when they visited schools. Such conversations are important for the academic to develop a holistic understanding of the student before issuing the final summative assessment. Other students stated that the academic would *never talk to the teacher. They only talk to HODs or the teaching practice coordinator*. That is a flaw in the process. There should be open channels of communication between the academic and the mentor teacher.

One of the three academics who claimed to speak to the teacher mentors stated that *as an academic who assesses students, I talk to the mentors if I find that the mentor has heaped praises on a student whilst I have a different opinion of the same student. Also, if I find the student to be struggling I do engage the school mentor*. This is exactly how the WIL ought to unfold for the total development of the student.

Teacher preparation

As part of an intensive professional development programme, all participants were happy to have academics teach, what they considered were ideal lessons. A student stated:

We should be taught on what we should really be like by looking at our lecturers and seeing how they do it. I feel like sometimes we are expected to do the right thing yet we were never showed a perfect example of how a classroom should be like, or how a lesson should be taught. We are told what should be like but we never see a demonstration. Even a one-hour video demonstration in our first year could make a huge difference.

Other participants felt that students themselves should be allowed to present lessons at university and these must be critiqued by their peers and academics during the method modules.

Student teachers make presentations, sharing their skills they learned in the different schools that they were deployed in. They can be placed in groups where they perform a lesson. Lecturer and colleagues can then comment.

Another student also recognised the value of allowing the fourth-year students to present lessons to the first-year students, which may indeed be a useful way to present additional practice opportunities for the students.

Open up opportunities like allowing us to teach content to the first-year students.

These lessons can be supplementary lessons, held out of the normal teaching programme so that they do not impact on module delivery. One additional purpose of these lessons at the university is summarised by a student:

We must all be taught how to use computers and technology in our lessons for when we go out to schools. We need to present lessons using the technology during the semester before we go to schools.

Academics shared similar views about students presenting to their peers and staff.

I think beyond understanding the expectations of school-based WIL, have students present a lesson and all engage in critiquing the lesson. The assumption that we all know what to do to mentor students is not true.

Another staff member opined that an entire module should be dedicated to simply getting students to prepare and present lessons.

Students should have a module where they prepare lessons and teach those lessons to peers.

This would be followed by an intensive period of reflexivity and critique, enabling all students and the academic to engage with various aspects of planning and preparation, presentation and assessment.

Every participant felt that it would be ideal to get each student to record at least one lesson (what they would consider their best lesson) from a WIL session and present that in class for discussion. Many students justified this by saying:

- *Certainly, showcasing their best lesson upon returning to campus can be a valuable opportunity for us to share successful teaching practices, receive constructive feedback, and contribute to a collaborative learning environment among students and staff.*
- *Professional development opportunities: presenting their best lesson to students and staff can serve as a form of professional development, enabling them to receive feedback, reflect on their own teaching practices, and refine their instructional strategies.*
- *They will gain more confidence! The more you teach in a room full of many people, you actually gain confidence in yourself. Which is a good thing.*
- *This will allow them to share their ideas and to get constructive criticism which will enable them to improve and look at things from a different lens*

One student had an alternative suggestion. He wanted the worst lesson to be presented to the class. Whilst this might work for some students, the possibility that many will be embarrassed is a reality.

I would say they should choose their worst lesson, present it to their lecturer's and peers so they can be assisted in turning the worst lesson into the best.

Academics supported the idea of the students presenting their best lesson except for one who stated:

My answer would be yes and no. I would rather say pre-service teachers be trained to critique themselves. Teaching is not only about the lesson, they need to learn to critique the assessment they administer and feedback they give to learners. also, I would not only say their best lesson even their bad lesson so that they get feedback on how they can improve it.

The general consensus, however, was that some form of class presentations and discussions take place.

Assessment of students during WIL

The participants were asked whether the rubric used to assess students is too general and thirty of the participants felt that it is not too general. The response indicates that they are happy with the rubric but their justification for their choice indicated that they were not very happy with the rubric. Some students stated:

- *a rubric that is general may not provide students with clear guidance on what is expected or how their work will be evaluated*
- *Because sometimes they don't take into account subjects like mathematics which is different from other subjects.*
- *the rubric is too general because it does not provide clear criteria for what constitutes successful performance. This can lead to confusion among students about expectations and make it challenging for them to understand how to improve. General rubrics may only provide high-level feedback, lacking specific guidance on areas of strength and areas needing improvement. This can limit the usefulness of feedback for students in understanding how to enhance their performance.*

Academics also struggle with the general rubric as well, as corroborated by academics in the words:

- *From my experience, I found that I had to include other aspects that were relevant for the pre-service teachers that I was assessing. These aspects were not included in the generic rubric.*
- *It needs to be specific to the subject*

Preservice teachers' experiences

Twelve of the fourth-year students were interviewed and asked questions that related directly to their experiences during WIL.

The first question encouraged them to think about the experiences they had as pre-service teachers at the last school that they visited for WIL. They had spent three months at the school. They had to specifically think about and list three of the experiences they had whilst observing their mentor teachers. This type of reflection was not easy for the students but it was evident that the comments were deeply considered.

One student, for example, noted that her mentor teacher

has been teaching for over 10 years. The tricks, skills and knowledge that she has is inspiring, she knows how to break down a complex topic for learners in order to make it simple. She used various textbooks to get different types of exercises and learners wrote class test every week, based on the content that was taught. She was also very disciplined, and learners respected her as she set boundaries and was also firm with her instructions.

The experience of the mentor was noticed by the student and she recognised that her mentor created an environment that utilised three critical aspects that teachers require: the ability to simplify complex topics, the use of multiple source materials and her classroom management. These are skills that can be spoken about during lectures but the practical demonstration has a greater impact.

Another student, who might have been placed in a better-resourced school, found his teacher very innovative. His mentor teacher was

highly effective at making lessons interactive and engaging. He used various teaching aids and technology like interactive whiteboards and math apps to keep students interested and actively involved in the lessons. He consistently asked probing questions that encouraged students to think critically rather than just memorizing formulas. This approach showed me the importance of helping learners understand the "why" behind mathematical concepts, not just the "how". He also created an environment where students felt comfortable asking questions and expressing when they didn't understand something.

The recognition of the teacher's ability to encourage critical thinking was useful for the student and it would have been ideal for the student to lead such a discussion in his class at campus for all students to understand and benefit from this insight.

The idea of a mentor teacher's reflective practice was also an idea that could have been explored with students to encourage them to become reflexive practitioners. This is what was observed and reported by a student: *My mentor often reflected on her lessons, discussing what worked, what didn't, and how she could improve.*

These experiences of the fourth-year pre-service teachers had great value but according to the students, no opportunities were presented to them to have these discussions where they could share some of the valuable lessons gathered during WIL.

The students were very attentive to negative characteristics displayed by the mentor teachers as well. These observations were fundamental to their development as teachers from a very

early stage. These were some of the significant remarks made by the students about their mentor teachers

- *She does not participate in the school activities like briefings and sporting events.*
- *She had favourite chapters in maths that she tried to stick to, which consumed so much time.*
- *He focused on other things whilst I was there. I was more of a substitute teacher because he said that he was grateful that I came to his class because to him I was like a relief teacher.*
- *The mentor teacher relied heavily on traditional teaching methods, such as using the chalkboard, without incorporating much technology. In a world where digital tools can enhance learning, this seemed like a missed opportunity to engage learners more interactively.*

Students also shared negative experiences about the institution. The first related to what one student considered to be the disorganized start of the WIL session. He started his school experience late *even though I requested to start at the original start date I was told no*. The other issue revolved around the university tutors. Tutors created immense stress in the way they insisted on visiting more than one student in the same school on the same day. Often this was not possible and students had to plead with mentor teachers to reorganize timetables to accommodate them.

Students as teachers

When asked about what they felt they had done well during the WIL, none of the twelve students indicated that they felt they had taught well. There were some characteristics that they showed confidence in but they did not talk about their classroom practice. They spoke about the following aspects and these were all important points in their evolution towards becoming confident, practicing educators.

- *I was able to create a safe space for learners in the classroom.*
- *I was able to manage the classroom, and engage learners in the process of teaching and learning.*
- *I had a good relationship with teachers and learners*
- *I was able to manage classrooms*
- *I was able to test learners understanding*
- *I started to become confident*

Preservice teachers' insecurities

There were a number of insecurities that they spoke about but the most common was related to time management. Every student indicated that they struggled with their preparation for specific lessons. They either completed their lessons too early or could not complete their lesson during the allocated time period.

- *I sometimes found it difficult to complete my lessons within the allocated time, either rushing through material or not having enough time for a proper summary at the end of the lesson.*
- *Sometimes I plan my lessons in a way which leaves not enough time for the learners to do activities. I've not learned how to practically decide how much time learners need for a specific task.*
- *I tended to move too slow. I would spend so much time in one aspect alone.*

Classroom management was also a significant issue mentioned repeatedly by students. These issues are addressed theoretically during particular modules but WIL allows the students to experience the realities of the varying contextual factors in the different schools. Again, when the students return to campus and share these experiences, understanding and learning about particular environments may be reinforced.

- *At times, I felt insecure about managing student behaviour, especially when dealing with disruptions. I found it challenging to balance maintaining control while keeping the environment positive.*

Among the other insecurities listed by the students, was the issue of the advancements in educational technology and the students' inability to harness this potential to create great lessons. There was an acknowledgement that academics used different software in class but few opportunities were afforded to the students themselves to practically engage with it on a hands-on basis.

- *I don't really do much in terms of ICT and I only use the traditional method of teaching. I have to learn how to use GeoGebra and other software and most teachers don't even use this software in schools so we cannot learn from them.*
- *In cases where we need to explore new topics, simple deductions and corollaries, we need to improve the way we teach as teachers; we must be able to use projectors, laptops and software like GeoGebra and Sketchpad to teach this type of mathematics.*

Finally, designing assessments was an issue that some students raised. They were convinced that designing assessments is not part of their study programme.

I struggled with designing formative assessments that accurately measured student understanding. I often wondered if my questions were too easy or too difficult.

Perhaps the discussions about assessments as part of teaching and learning must be more rigorous.

As the final question, the students were asked to reflect on their perceptions of the experiences their learners had during the teaching they provided over the WIL period. When the learners seemed particularly engaged, what behaviours did the student demonstrate that helped keep the learner in rapt attention? When the learners seemed disinterested, what behaviours did the student demonstrate? How did the student feel during those exchanges?

There was a general tendency to recognise that too much talking created boredom and disruption. The reaction was to adapt the lesson to create greater interest.

- *I made sure that as a teacher I do not do too much of talking but instead I give learners short activities. Introducing maths games in the classroom also helped to keep the learners engaged.*
- *When the learners seemed disinterested it made me feel like I do not belong here, as though I was wasting my time, as well as theirs. When they were disinterested, I would find ways to connect the content with general real-life things.*
- *Sometimes, when I relied too heavily on direct instruction, students became disengaged. They seemed bored when there wasn't enough interaction, and I realized that I needed to change my teaching methods.*
- *When students were disinterested, I felt a sense of frustration and doubt, questioning whether my lesson plan was effective. I became more self-conscious about whether I was delivering the content in an interesting way. During these moments, I realized the importance of being flexible and adjusting my teaching strategies in real time to better suit the learners' needs.*
- *When I introduced real-life examples, visual aids, or interactive materials like graphs and videos, the learners showed heightened interest. These tools made abstract concepts tangible and easier to understand, which kept their attention focused.*

The transcript demonstrates the sense of helplessness that students experienced when they discovered that the learners were not completely engaged in their lessons. It is the recognition that something different has to be done to keep the learners occupied and interested was useful and encouraging.

DISCUSSION

The results indicate a link between the preservice teacher, the educating institution and the schools. Zegwaard et al. (2023, p. 38) affirmed this by defining WIL as “an educational approach involving three parties – the student, educational institution, and an external stakeholder – consisting of authentic work-focused experiences as an intentional component of the curriculum”. Further, Zegwaard et al. (2023, p. 38) stated that “students learn through active engagement in purposeful work tasks, which enable the integration of theory with meaningful practice that is relevant to the students’ discipline of study and/or professional development”. The participants in the study corroborated these findings, especially those related to active engagement.

Kay et al. (p. 412) also emphasized the idea that newer models of WIL “identified through this project, enable universities to respond to the changing nature of work and workplaces resulting from increased globalization and automation, by equipping students with the skills required”.

This is a critical finding and it resonates with students' claim, in this research, that they do not have sufficient exposure to technology in a rapidly changing world.

Jackson (June 22, 2018) claimed that technology needs to be embedded into the WIL learning design, with technology playing a role in all three pillars of preparation, reflection and feedback. This may mean that the student could work, in some instances, from their computers to create rich instances of learning by preparing their lessons, recording, viewing and reflecting on these lessons and getting feedback from academics and school mentors, as they view and assess these recorded lessons as well.

But technology can also be used in the classrooms by the students to make their teaching better. Meagher et al (2011, p. 260) claimed that

“Engagement in such a cycle allows preservice teachers to gain the benefit of exemplary practice in task design and the use of advanced digital technologies, focusing them on this aspect of practice without having to deal with early pedagogical aspects that arise from teaching the class themselves (i.e., classroom management, questioning, etc.). The implementation of such a cycle in conjunction with a methods class would allow preservice teachers to develop a more inquiry-based approach to their teaching and to see how the use of advanced digital technologies can facilitate that approach.”

The students complained of their uncertainty with the use of technology and felt insecure with its application in the classroom. Meagher et al (2011) show in their research that these insecurities can be eliminated if some focus is directed towards digital technologies during the methods lectures.

Boguslav and Cohen (2024) also, through their research, declared that *“Lambeth University is at the forefront of measuring PSTs’ instructional skills”*. This finding was based on the fact that the “university employs trained and certified raters who do not know the PSTs they rate, resulting in high inter-rater reliability” (p. 180). Of greater significance though, is the idea that raters are randomly assigned to videos to observe and evaluate. This eliminates, in the South African context, the tedium and difficulty, of traversing large distances to visit the students at schools.

Alahmad et al (2021, p. 82) reiterated the findings in their research that pre-service teachers are not sufficiently confident in the 21st-century classroom. They concluded that *“on the basis of the research results, we conclude that student teachers perceive their efficacy and capacity to teach 21st CS to be at a mid-level.”* The task of teacher educators is to ensure that these students leave university with sufficient confidence to enter school classrooms, despite the evolving technological revolution.

CONCLUSION

The adaptation of the 5E Instructional Model (Bybee & Landes, 1990) may provide a useful insight into how we can view the WIL experiences of the participants in this study (refer to Figure

3). The first three steps, namely Engage, Explore, and Explain are processes that will unfold in the first three years of the four-year degree.

The WIL experience requires that the student Engages and interacts meaningfully with identified academics, carefully selected teachers, and schools classified as exceptional. For students to imbibe the necessary pedagogical skills, the ideal models must be made available to them.

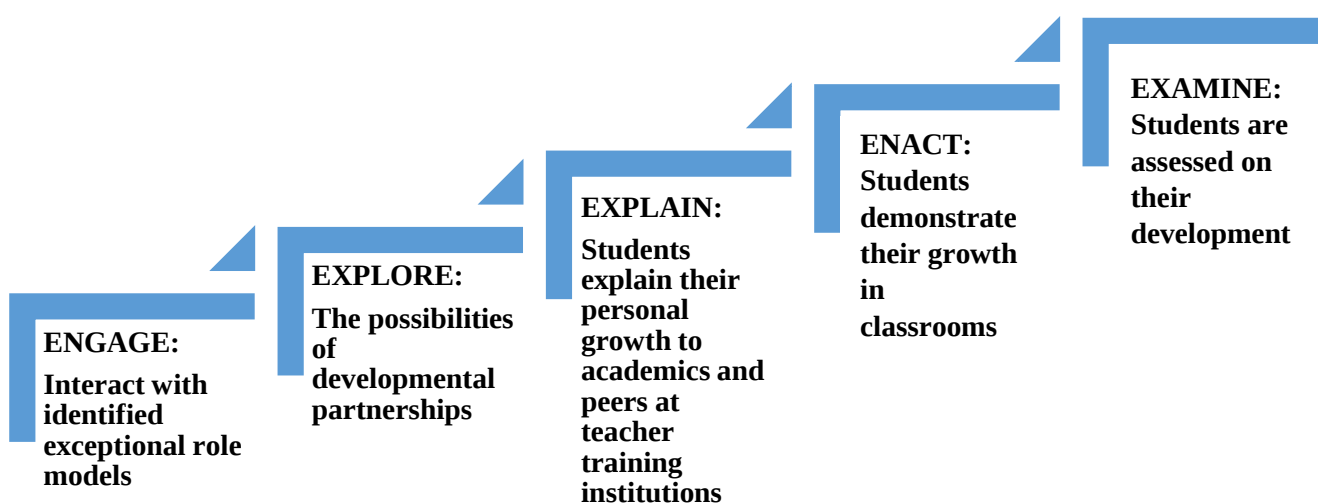
In engaging with these role players, the students must be encouraged to Explore the possibilities of creating partnerships (with teachers and academics) that will enable them to refine and develop their pedagogical skills. This is the mentoring partnership that guides the students through the WIL process and their future practice as teachers.

In the process of engaging with the important role-players and developing particular skills, it is essential that the students Explain, through understanding, their personal growth as a teacher to their peers and academics at the teacher training institution. This requires deep reflection and a critical examination of all their reports and discussions with all mentors. The portfolios should be used to support arguments presented in these explanations.

The next two processes should occur in the final year of the undergraduate programme and these are to Enact and Examine.

Figure 3.

Adapted from the 5E Instructional Model (Bybee & Landes, 1990)



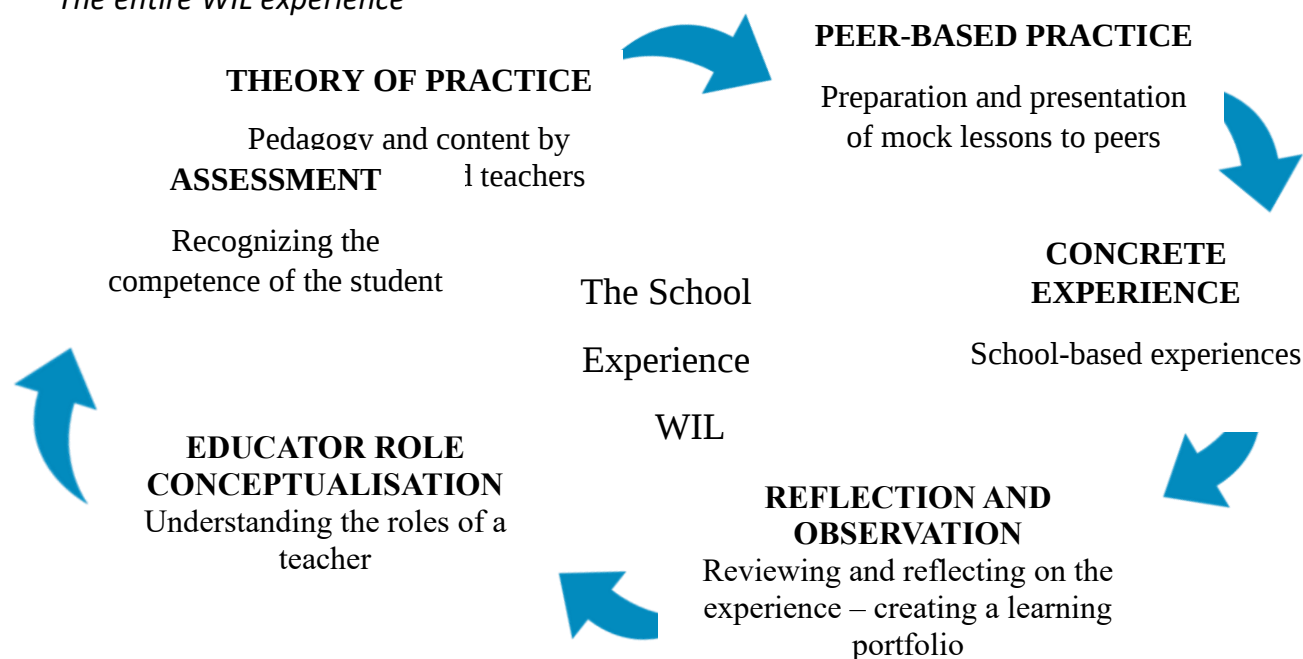
In fourth year, during the extended WIL period, the students ought to demonstrate growth over the previous three years, as development is expected to have occurred. This requires that the same university mentor follow a student for at least the final two years of study to monitor the evolution of the student. Expressing this growth in the classroom as a teacher as part of WIL will demonstrate how well the student has progressed from previous years' engagements in the programme.

Finally, at the end of the compulsory extended WIL period, the students will have to be assessed on their abilities to function as a teacher.

The entire WIL experience is summarised in Figure 4. Much of the undergraduate programme prepares the student with the theory related to classroom practice. However, theoretical knowledge does not guarantee effective enactment of what has been learned. Students must be afforded opportunities to rehearse their mode of classroom presentation, in front of their peers and academics. A constructive critique of their performance should be developmental in nature. These mock lessons should be recorded and interrogated carefully so that the student understands where growth is required. Armed with sufficient experiences through these interactions, students are now ready for concrete school-based experiences. All that they have learned should now be recalled and applied with the guidance of the academic and the school mentor/teacher. During and after each lesson and at the end of the entire WIL programme, the students must reflect on their observations and practice opportunities must be made available in class for the reflections to be discussed. At this point, it is hoped that the students begin to fully grasp their roles as teachers. The students should be assessed on their growth and development over the four years.

Figure 4.

The entire WIL experience



WIL for teachers is a complicated process but with careful nurturing and guidance, it is possible to create effective, successful teachers. The process is rigorous and requires planning from a program and discipline perspective. The students in this study were able to reflect on and recognise their strengths and weaknesses and this demonstrates the possibilities for active discussions, in and out of class, for their personal development.

The data indicated that the classroom practicum experience complemented the theoretical and practical knowledge previously gained. It provided the preservice teachers with the opportunity to understand teaching in different contexts and how methods, materials, language and content must be manipulated accordingly. There was a distinct absence of

research competences displayed by the preservice teachers, mainly because significant emphasis was not placed on research related lesson planning. There were research assessment tasks but these were seen as being different from that of a lesson plan.

Looking ahead

There are a number of factors that teacher educators need to consider regularly when considering program improvements.

- There has to be regular reflection on offerings that should be revitalised and strengthened. These reflections should involve all role-players.
- Innovative WIL programs must be considered in addition to the traditional students visiting schools and being assessed by mentors who visit them on site. This innovation must include scenarios different from those that currently exist. Have online and other forms of non-synchronous teaching prioritized as part of the program so that we can overcome the effects of disasters and pandemics.
- There has to be a part of the WIL program that prepares preservice teachers for teaching in the 4IR, which requires thought and application.
- Which modules prepare students to mitigate any loss of teaching and learning time at schools? Have students been taught to trim the curriculum so that learners still get the best education under differing circumstances?
- Included in this vision is the idea that in the 4IR, students should submit all documentation via e-portfolios. Paper-based reports and files must become extinct.
- Student assessments must be comprehensive enough to guide students to become better teachers. A tick-box assessment sheet is not sufficient.
- What are the different forms of evaluation? In the context of 4IR, how should the role of the assessor be modified?
- The efficacy of the role of assessors was compromised by the number of students to be visited per day. This can be changed if assessors evaluate and provide feedback using technology.
- How can feedback be immediate? How can assessors link into lessons when necessary and view lessons and guide the student as is necessary?

There must be a clear understanding by all preservice teachers that high-quality teaching is not determined by a formula. High-quality teaching is

- dependent on a clear understanding of sound pedagogy which has been researched, tried and tested consistently across a number of schools;
- continually reflected upon by the preservice teachers for effectiveness;
 - research driven and dependent on empirical evidence

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