

# Student-teachers' understanding of the role of theory in their practice

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## Abstract

In the current educational context there are calls worldwide for a shift from the perspective which treats theory separately from practice, to a more organically evolving, more grounded conception of theory which integrates campus-based courses with school teaching and learning. This study adopts a guided reflection conceptual framework in making sense of student teachers' understanding of the role of theory in their practice. A qualitative design is employed. The aim was to establish how student teachers think about theory in their teaching. Following a survey aimed at identifying a relevant sample for a guided reflection, a focus group interview was conducted with a sample of twelve 4<sup>th</sup>-year student teachers. Data analysis involved transcribing, coding and classification of the codes into themes. Findings indicate that contrary to popular notions of student-teachers not being sure of what is meant by 'theory' in the practice of teaching, they have very particular and nuanced understandings of the position and role of theory.

## Introduction

The argument that theory learnt as part of campus teacher education programmes is largely divorced from the real challenges of classroom teaching has a long history globally (Anderson and Freebody, 2012; Feiman-Nemser, 2001; Laughlin, 2011; Childs, Edwards and McNicholl, 2013; Gravett, Petersen and Petker, 2014). There have been calls for a change from the old teacher education model which treats theory separately from practice, to one which integrates campus-based courses with school teaching and learning more explicitly and effectively. While there is a plethora of studies focusing on the perceived theory-practice gap (Yayli, 2008; Brouwer and Korthagen, 2005; Allen, 2011; Reidy 2006; Reid and O'Donoghue, 2001;

Roth, Mavin and Dekker, 2014), there appears to be much fewer research, particularly in South Africa, which examines the way student-teachers themselves perceive and understand the place, purpose and role of theory in their teaching practice and their emerging identity as teachers (Dye, 1999). This study focuses on this under-researched niche area in addressing the question: What are student-teachers' understandings of theory in their practice?

Zeichner (2010) makes a strong case that teacher education continues to be characterised by a traditional approach whereby academic knowledge is viewed as the authoritative source of knowledge about teaching. According to Zeichner, evidence from years of research indicates that many university teacher programmes do not make effort to understand how students of education value and make use of the theory they are taught to meet the practical demands of classrooms. The old perspective of teacher education which views academic knowledge as the authoritative source of knowledge about teaching continues to be applied. In this respect educational theory is assumed, in an uncritical way, as forming a central part of teacher knowledge which student-teachers should master in their preparatory courses so that they can use this theory to guide their practice (Dye, 1999; Gravett 2012). As Dye points out, Learning Theory and Child Development Theories have become normative and taken-for-granted in designing teacher education curricular with no critical examination of how student-teachers understand, value and use theory in their emerging practice and as part of their evolving teacher identity. Indeed, as Abend (2008) argues, 'theory' is a word which is thrown around in seemingly unproblematic and clearly uncritical fashion when researchers and academics discuss teacher education. In most cases when academics speak of theory they refer to 'public' as opposed to 'private' theory (Dye, 1999). Gravett (2012) also posits that by 'theory' academics often mean their 'pet theories' or theories arising from their own research interests. This conception and understanding of theory might be different from that held by student-teachers. This study sets out to, first, understand what is meant by 'theory' and then, second, explore the understandings of 'theory' that student-teachers hold. This way, it can be established whether lecturers and student-teachers have the same conception and understanding of 'theory' in teacher education. By extension, inferences can be made by way of suggesting how the theory-practice relationship can be reconceptualised within pre-service teacher education programmes.

## Literature review and conceptual framework

There is a tendency globally in the present-day educational setting for a swing away from dealing with theory disconnectedly from practice, to a more organically evolving, more grounded conception of theory which integrates campus-based courses with school teaching and learning. Thompson (2000) and Wrenn and Wrenn (2009), for example, allude to the disjuncture between theory and practice as unacceptable. As such, Clapton and Cree (2004) and Wrenn and Wrenn (2009, p.261) emphasise the “need for learning models that integrate theory and practice in ways that bring the field into the classroom as well as take the classroom into the field”. In addition they stress that the pursuance for integration should be an intrinsic feature of the student teacher’s educational experience. Gravett (2012, p.2) talks of restoring “the unity of theory and practice in teacher education”, whilst Dye (1999, p.315) expresses the need “not merely for greater legitimation of the practice to theory approach, but for a pluralistic approach to the theory–practice relationship.

The aim of this study as stated earlier primarily is to gauge student teachers’ understanding of how they perceive the relation between theory and practice through guided reflection. This study consequently adopts a guided reflection conceptual framework in making sense of student teachers’ understanding of the role of theory in their practice. The South African Education Policy stated in the Government Gazette (2011, p.53) as one of the key competencies (also referred to as Minimum Requirements for Teacher Education Qualifications (MRTEQ) that novice teachers should “be able to reflect critically, in theoretically informed ways and in conjunction with their professional community of colleagues on their own practice. . .”. In this regard Falkenberg, Goodnough and MacDonald (2014, p.340) refer to the integration of theory and practice as “not a problem of applying theory in practice, but rather a problem of helping teacher candidates develop practical wisdom”. This view is supported by Korthagen, Kessels, Koster, Lagerwerf and Wubbels (2001).

In order to develop a better understanding of the relation and consequent integration of theory and practice, it is important to unpack what is meant by theory in an educational context. Abend (2008, p.173) concerns himself with the meaning of theory, and maintains that confusions regarding this concept have resulted in “undesirable consequences, including conceptual muddles

and even downright miscommunication”. He addresses two aspects, namely, what it means and what it should mean. He puts forward a typology consisting of seven meanings, namely Theory<sub>1</sub> to Theory<sub>7</sub> which he calls ‘lexicographically. . . seven different senses of the word’ (p. 173). This coincides with Dye’s (1999, p.310) research findings that student teachers “use and operate with theory in different ways”. This typology of Abend (2008, pp.177–178) is used in this paper as a lens through which to analyse and describe student teachers’ narratives, especially in terms of which senses of the concept they are more aligned to. Furthermore, the seven categories of how theory is perceived enable us as researchers to critique the assumption by teacher education course designers that theory “is an object out there that our concepts or language can track down” (Abend 2008, p.176).

Guided reflection is commonly considered a form of reflection that occurs between facilitators and practitioners or students in a structured way (De Swardt, Du Toit, and Botha, 2012) such as a focus group discussion as was the case in this research. Guided reflection was used as a strategy to facilitate focused discussions by student teachers about their theoretical and practical experiences that occurred over four years of pre-service training. The rationale for guiding the reflective process was to steer the discussion in a direction that could reveal student-teachers’ understandings of the phenomenon under study. We also realised that it may be challenging for pre-service students to reflect on their experiences without some form of structured guidance (De Swardt, Du Toit and Botha, 2012, p.2; Duffy, 2008, p.335).

According to Leijena, Allasa, Toomb, Husuc and Marcosd *et al.* (2014, p.315) “the premise of the guided reflection procedure is to develop such pedagogical practices in teacher education that are effective in enabling student teachers to construct professional agency and acquire such knowledge and skills they need when they enter into the teacher profession”. Dewey is generally considered the proponent of this theoretical model (Dewey, 1933) which he defines as involving systematic and rigorous thought processes. In addition “it emphasizes student teachers’ personal aims and goals of learning, interaction with others, spoken and written reflection, and time used for prolonged reflection” (Leijena, 2014, p.315). However, guided reflection is not used in the present study in the sense depicted in these studies mentioned above. Rather, we use guided reflection as a methodological framework, and not a teaching-learning tool in the pedagogical sense.

## Methodology

This qualitative explorative study adopts a guided reflection framework to examine student teachers' perceptions and understandings of the role played by theory in the practice of teaching. Guided reflection is described as "a form of reflection which occurs between facilitators and practitioners or students in a structured way" (De Swart, Du Toit and Botha, 2012, p.2). Reflection in its many forms is regarded as a powerful strategy through which participants can examine their own interpretations, look at their perspectives from another position, and turn a self-critical eye onto one's own authority as interpreter and author (Husu, Toom and Patrikainen, 2008, p.40). The researchers engaged participants (student teachers) in a focus group discussion involving a series of questions that required them to reflect on their own interaction with theory, and how they have perceived others' (their lecturers on campus and tutor teachers during teaching practice) engagement with theory.

Previous studies that have used guided reflection as a method report on several steps that inform the unfolding of the process (Husu *et al.*, 2008; De Swart *et al.*, 2012). Furthermore, the studies have demonstrated the value of guided reflection as a method for helping student teachers achieve their learning potential. The present study involved a group of students and researchers who have interacted in a different context as students and lecturers respectively, while working with the phenomenon under study (understanding of theory). The aim of the study was not to reflect students' learning potential but to enable researchers to examine participants' understandings and interpretations of theory.

### Methodological procedure

The guided reflection framework was adapted to inform (i) a choice of questions in the focus group interview schedule, (ii) probing participants' responses in order to enable deeper reflection on the role a particular concept (theory) played in their lives and those they interacted closely with (their lecturers and tutor teachers). The interview questions are framed around specific teaching-theory episodes on which student teachers could share their perceptions. Ideas from scholars such as Schon (1983), Zeichner (2009), Husu *et al.* (2008) and De Swart *et al.* (2012) were used as lenses through which to

understand students' perceptions which were further probed for their understandings and interpretations.

The site of data collection was the faculty of education at Cape Peninsula University of Technology in Cape Town, South Africa. In keeping with ethical principles, all 192 3<sup>rd</sup>-Year students registered for both B Ed Foundation Phase and Intermediate Phase in 2015 were invited to voluntarily participate in the study and 90 students volunteered. This category of students was chosen because they had, by 2015, had sixteen weeks of teaching practice behind them already. The sample was chosen for convenience since all three researchers were involved in assessing the students on teaching practice. Fourth-year students were considered to be too focused on completing their programme to participate fruitfully in the research. Between them, the researchers also taught the students in the sample modules in Education, Professional Studies, Inclusive Education and Mathematics Education. These students were thus in a position to reflect more usefully on their experiences with campus modules and with classroom practice.

Data collection was conducted in two phases. First an open-ended questionnaire was administered. Following the analysis of the questionnaire data, the findings informed the construction of questions that formed part of the guided reflection during the focus group interviews. This paper reports on students' reflections from the focus group interview only which probes and expands on the questionnaire data findings. A sub-sample comprising 12 students was identified from the main sample based on the emerging themes. These students were by this time (2016) in their 4<sup>th</sup> Year.

Analysis of students' reflections occurred in two stages. The initial stage involved coding of their utterances which were later classified into themes. The research addressed the following question: What are student teachers' understandings of theory in their practice? Following up on participants' views gathered from questionnaire data and using such views in constructing an instrument for the guided reflective interview was in line with ensuring trustworthiness of the findings. Furthermore, in supporting a particular finding, participants' utterances are used as illustrative narrative extracts that provide thick descriptions of the interpretations. We were cognisant of the ethical implications of researching on our own students as a result of our positioning as lecturers hence we obtained informed consent from participants. Ethical clearance was also obtained from the ethics committee of the faculty in question.

## Findings

The findings from the focus group discussion revealed a number of issues which were divided into the themes discussed below:

### Student teachers' understanding of theory in Education

Dye (1999, p.306) posits that, "how theory and practice are dealt with as constructs are likely to influence the way in which individual student teachers interpret, identify and internalise them". With that view by Dye in mind, theory was understood by some of the student teachers in this study to mean 'published authoritative knowledge'. It appears that these student teachers did not conceptualise 'theory' as insights which provide adaptable tools to inform their choices and decisions in the classroom. Instead there is technical-rationalism involved in how these student teachers understood the relationship between theory and practice. This group of student teachers did not feel that they theorised about their practice unless they 'applied' specific theories such as those by Vygotsky and Piaget.

In the opinion of this group of students theory is 'out there' and can be acquired and lost over time. This is seen in the following transcript:

*For me, during my teaching practice experience, generally when I've spoken to my tutor teachers and other members of staff. A lot of them have actually dismissed the theories that they've learnt at the varsity and said it's pretty much useless and when you get into the classroom it's a total different situation. When you become a first year teacher, you sort of start from scratch again and you adopt your own approach. I've spoken to him a few times and a lot of the other teachers have also discredited some of the theories so I really haven't come into that contact besides during a lecture when people speak positively about theories. A lot of the teachers dismiss it and don't really give it much thought I've found.*

From the above it can be argued that the 'theory' which this student teacher preferred are those specific 'strategies' that enabled her/him to cope with specific classroom challenges such as learner behaviour and lesson planning. Student teachers such as this one do not seem to consider their own reflection and meta-cognition to be valuable sources of theoretical insight. Some student

teachers thus tend to understand theory from a ‘behavioural perspective’ and not a ‘grounded’ one. Gravett (2012), citing Feiman-Nemser (2001), observes how some mentor teachers in schools take it upon themselves to shield student teachers from the abstract ideas taught by university lecturers who are assumed to be out of touch with what is happening in real classrooms. This way student teachers develop an understanding of theory as ‘university impractical ideas’ which they would rather forget or ignore. These student teachers understand theory as ‘book knowledge’ about ideas, which is less important than the ‘practical knowledge’ which their mentor-teachers share with them.

However, other student teachers demonstrated an awareness of the relationship between their campus theoretical courses and their subjectivity which enabled them to develop their own theoretical understandings in practice, what Gravett (2012) has termed ‘learning to be’. This emerged in the extract below from the focus group interview:

*Yes. When you’re learning about the scaffolding and different cultures and all those things, you apply it in your classroom. You become more aware of those situations in your classroom and therefore adapt your teaching and your environment in your classroom. I also think like now in fourth year because it’s become like general knowledge to us now, sometimes you aren’t even aware that you are doing it but if you then go back and think about it, you are because right from first year it gets drilled into you. This is what you should do.*

The student above was describing what had become practical wisdom for her with regard to her understanding of theory. Practical wisdom is also referred to as “perception-based knowledge” by Kessels and Korthagen (2001) as cited by Gravett (2012, p.141). Contrary to the conventional perception of the existence of a binary between theory and practice in teacher education, views such as the ones these students were raising appear to indicate a strong awareness of the fact that a teacher needs to first develop personal theories from their practice, before refining these private theories with insights from formal theories.

Similarly, some of the student teachers reported being guided by theory in their teaching, albeit unconsciously. Such student teachers appeared to appreciate the value of theory in practice when they acknowledge how theory informs practice implicitly, as the transcript below indicates:



*I think that you don't realise, even what we've learnt in Education over the four years. I don't remember everything, I can't say in my first year I learnt about this theorist and this one and that one. I know a little bit but the rest of it is unconscious, like you do it without even thinking about it and if you look back like you said earlier, you have done those things.*

The observation above is in line with Gravett's (2012) assertion that theory in teacher education should be directed at nurturing a professional identity through the process of 'learning to be' by which student teachers can develop the requisite outlook, demeanour and disposition of a teacher. When theoretical insights from formal conceptual knowledge become embedded in the practice and rituals of teaching as performance, the student teacher makes use of such insights 'unconsciously. The student above is describing how she learnt from reflection on experience which, for Dye (1999), enables student teachers to value theory. In Dye's (1999, p.307) words: "the valuing of educational theory is embedded within the way student teachers are able to extrapolate, make sense of and use theory in practice or relate theory to experiences encountered in the practice of teaching". Dye goes on to explain that as student teachers become more experienced they will develop and demonstrate implicit patterns of 'doing' and 'being' for dealing with particular demands of practice. All these views appear to indicate that student teachers develop quite nuanced understandings, beliefs and values about theory in teaching, contrary to the normative perception that a conceptual gap always exists between educational theory and teaching practice.

However, Allen (2011) suggests that the perception regarding the existence of a conceptual, perceptual and practical separation between theory and practice is co-created by the role-players involved in teacher education and teacher practice, such as lecturers, students and practicing mentor teachers. Practicing teachers are especially implicated in creating the perception that theory is separate from practice, a perception which might not necessarily be shared by student teachers, as we show below.

The perceptions of student teachers on Teaching Practice regarding in-service teachers' attitudes towards theory in practice

Evidence from the data indicates a trend that when student teachers go on Teaching Practice (TP) their experiences with their mentor teachers practicing in the schools tends to create doubts in these student teachers regarding the

value and place of theory in classroom practice. This doubt can affect the understanding of theory that student teachers have. In this regard one student reported thus:

*We did a research assignment for one of our lecturers and we've had to research how a teacher in Foundation Phase provides for a child whose home language is not allowed. And we are seeing that teachers are not providing that support. And my partner and I are realising it's because they are ignoring some theoretical underpinning concepts, that they are ignoring this poor child. He's sitting in a foundation phase class not understanding and it's because the teacher is not acknowledging theory.*

There was a general agreement amongst the student teachers that teaching which is not guided by theory and in turn feeds into theory is inadequate and poor. The student teachers acknowledged that a teacher is unable to re-package the curriculum content or adjust teaching methods and pace to suit the content and the learners in the absence of theory to inform practice, as the transcript below shows:

*It's not what we see in class and it's something we should implement. I don't know if everyone does but you can tell by looking at your tutor teachers, how they teach something and how you have been taught to teach it. And I think there the theory does come into play because the tutor teachers forget that theoretical knowledge. You're still new in it and you can see the differences. It's also knowing that you need to adapt that content and not use the curriculum as a Bible. And I think that's the problem, where teachers aren't taking the curriculum and adapting it. They're just using it how it is, this is what must be done and they don't go . . . oh these children will benefit if I teach it in this way. They just go, . . . I need to teach the content, need to teach the content.*

Hence, these student teachers did not seem to have always witnessed good practice from their mentor teachers when it came to demonstrating how theory informs practice while, at the same time, practice generates theory. There was the perception amongst the interviewed participants that in-service teachers still operated in a behavioural paradigm, as the following shows:

*I think a lot of my teachers are still in the behavioural shift. I don't think they fully understand how to adapt CAPS for social constructivism so they're still very much drilling, memorising not*

*really allowing children to learn themselves by discovery but more they feel that they need to have to teach in order for children to actually get information.*

It was the view of these students that established in-service teachers miss out on valuable teaching moments by not taking theory seriously.

*In my opinion in my experience they don't (use insights from theory). The teachers that we have currently in schools, maybe not the ones that just graduated or are new teachers but the ones that I've had as mentor teachers they haven't. and I think that they should because then you see that they miss out on those things that we've just said about like the guided reinvention and the scaffolding and all those things that we've just spoken about.*

Some of the student teachers understood 'theory' in multiple and composite terms and advocated the utilisation of broad theoretical insights and orientations in teaching. In this regard one student teacher said:

*I think that you don't have to necessarily refer to one specific theory because every teacher's different so you have a specific way that works for you. So by having a general informed idea of what theories you agree with, you implement that. The way you teach them, the environment you create. So it's not subconscious but I think it is necessary to have that knowledge of the theories when you teach. Because you also know what to look out for to see if a learner's struggling. You might see the foundation phase levels missing or they're missing just that one step so now you have to go back 'coz you know Vygotsky's got his levels and whatever.*

It is the argument forwarded in this paper that, contrary to the much researched concept of the theory-practice gap, the student teachers in this study demonstrated an understanding of the role, purpose and place of 'theory' in their teaching. If we consider the typology by Abend (2008) we can see that these student teachers think of 'theory' not only as Theory 4 (knowledge of authoritative, seminal theorists such as Piaget, Bruner and Vygotsky), but also as Theory 5 (A broad perspective of understanding and interpreting the world). The student teachers are aware that they develop their own personal theories by 'adapting' the authoritative theories for particular learning/ teaching contexts, in line with Abend's (2005) Theory 7 (theory as ways in which reality is socially constructed). These student teachers understood that lecturers could not teach them everything and that they

needed to also learn in practice through their own reflection, thinking and experiencing. This is seen when a student teacher observed that:

*I fully agree with them to a certain extent and then there's also, I feel like most of the theory helps, it's going to help but I feel like we learn while we are in the classroom but maybe we pick up things that we haven't learnt at university. I'm actually fortunate that my parents are both teachers and therefore for me I can sit and tell them you know what guys, this is what I've learnt today and I'm gonna apply that. And sometimes they tell me you know what, that actually might not work like that. Because depending on the situation you might not be able to apply it exactly the way it's been given to you in theory. I definitely agree but I also think we need that theory to be able to see whether we can teach that way or not teach that way. I have found that it has definitely helped us.*

Taking the above extracts into consideration, it can be argued that what exists in teacher education in this case is not a theory-practice gap but, rather, inconsistencies in the way teacher educators and practicing teachers understand theory. These students actually expressed frustration at the way they were not given adequate space and opportunity to practice with and reflect on the theoretical approaches learnt in their university courses, since their mentor teachers insisted that the students teach in the same traditional way the mentors did. We see this frustration in the words of the student teacher who said:

*I just wanna say that they're teaching in a behaviourist way but they're not even willing to try and teach in a new way. Often when you go to TP they go okay I know that university expects you to teach all these beautiful lessons but you teach it that way but then I'll teach it my way. So they don't even want to try and learn from you or adapt a social. . . And if you do teach it your way then they then go and reteach it almost as if your way wasn't good enough. Just because it's not how they taught it and they would expect certain things like they would expect a certain word. They would look for that word in the exam and you didn't perhaps use that word so they will reteach which makes you feel useless. If their way of teaching was so good then the state of teaching would be much better*

However, some student teachers felt that their lecturers on campus were not succeeding fully in making these student teachers understand why they had to

learn educational theories. Examining this issue of student teachers' perception of the way lecturers view and use theory in practice is important since this might determine whether inconsistencies exist in the manner in which these two parties understand theory in teacher education. We examine this issue by exploring the student teachers' views regarding how theory was utilised by subject didactics lecturers in various subjects.

The perceptions of student teachers regarding teaching of theory on campus

When asked about whether their subject didactics lecturers taught them 'theory' during lectures some student teachers reported that:

*I think they do in certain subjects and in certain parts of the subject. Like when we learnt that, it might not be in every single thing that we learn but in certain things we learn, they do apply the theories and things face to face like when you should teach it and how you should teach it. And they model how you should do it, so I think not in all but in certain subjects.*

So, whilst there was general agreement amongst the student teachers that some lecturers 'taught' them 'about' theory and 'demonstrated' how, where, when and why to use that theory, this was not done by all the lecturers. This tended to compromise the value that some of the student teachers placed on theory and their understanding and beliefs about the role and purpose of theory in their practice. Still, there was ample evidence from the data to suggest that most of the participants understood both their personal 'private' theories and the formal 'public' theories to be important for good classroom practice. We explore this issue briefly below.

Theories understood by student-teachers as important

Although the student teachers in this study did not remember all the theories learnt and the theorists by name, the data shows an awareness of a variety of learning theories and teaching approaches and their relationship to practice. The transcripts below shed light on this claim:

*Definitely for me would be scaffolding and moving from known to unknown. Just working on knowledge that they have and building on*

*knowledge that they have from other concepts to bring it through and make a connection so that they don't feel that it's separate topics alone (Interview participant).*

*I would also say for me when we learnt Pythagoras in Maths. You don't tell them, they figure it out on their own. So you give them the tools to find their rules discover it on their own. So you don't give them what it is from the beginning, they find it out on their own. (Guided re-invention) (Interview participant).*

*The one thing that I also found was group-work, I think it's Vygotsky (Social constructivism) and that I find the best. Like things that I learnt at school I maybe didn't understand but I think being here and the way our desks are arranged that you're always in a group, you're always talking, you're always getting help from other people (Interview participant).*

These student teachers appeared to be sufficiently aware of the different formal theoretical orientations in educational theory, their implications for classroom practice and for their own beliefs about effective teaching and learning.

## Discussion

Some interesting issues are raised in this study. The perception that a gap exists between theory and practice in teacher education programmes as well as in the practice of teaching generally is well-researched and reported on, as some of the literature reviewed for this paper indicates. What is not as well-researched and reported on is the issue coming out of this study, namely that student teachers are quite aware of the value, importance and relevance of 'theory' in their practice. It can be argued, from this realisation, that the much discussed theory-practice gap in teacher education is actually a misconception. The challenge is presented not by the existence of a 'gap' as such, but by the different ways in which different stake-holders view, interpret and understand 'theory' in teaching and learning. The findings of this study appear to confirm Gravett's (2012) conception of educational theory as constituting two sides of the same coin which involve student teachers 'learning about' formal knowledge of teaching and learning while, at the same time, 'learning to be' teachers. These processes necessarily occur simultaneously and cannot be conceptually separated. A great deal of research

occurred in the developed world in the later part of the twentieth century on the issue of the relationship between theory and practice. Waghorn and Stevens (1996, p.70), for instance, found out in a study with Australian student teachers that these students were quite aware of “the discrepancy between how they teach and how they would like to teach”. They conclude, in this study, that student teachers develop strong beliefs and theoretical understandings about teaching and learning. However, the researchers also conclude that despite these well-developed beliefs and understandings, student teachers were powerless to use their repertoire of tools in practice schools because of the pressure from mentor teachers to teach in particular ways. Waghorn and Stevens end by noting that:

*[T]heories of teaching held by student teachers are overlooked during the teaching practice component of their programme and that student teachers' theories of teaching and learning based on research can be reversed by prevailing conditions in classrooms.*

While the present study confirms the findings by the above authors, it also reveals that student teachers develop some coping mechanisms such as teaching in the way they know works best in a particular context and ignoring the humiliation of having the mentor teacher reteach the lesson. The student teachers in this study were aware of the short-comings of the methods used in class by many of their mentor teachers and were able to use insights from their professional knowledge to critique these methods. When the student teachers speak of theory becoming a second nature to them, a part of their emerging teacher identity, they are speaking about how they have developed some key pedagogical concepts and principles that enable them to develop personalised beliefs about teaching and learning. These personalised models are partly a result of the student teachers' need to cope with critical incidents they encounter in their teaching which compel them to reflect in practice using insights from what they have formally and informally learnt. Waghorn and Stevens (1996) as well as Dye (1999) all value guided reflection as a way of enabling student teachers to analyse particular moments in their teaching in a way which provides them an opportunity to theorise about practice and evaluate and interrogate their models and beliefs about their teaching. This study argues that the student teachers reported on here illustrated these processes.

Student teachers are theorists. This study has shown that student teachers have nuanced and well-articulated understanding of theory in teaching and learning. However, they require the guidance of their lecturers and good

mentor teachers if they are to learn powerfully from the perceived discrepancy between what they learn in their campus courses and what they experience in classrooms and schools. What appears to be required are insightful lecturers who use guided reflection to assist student teachers in structuring, ordering, clarifying and crystalising their experiences of teaching using their understandings and insights from learned formal theory. This process should begin with the premise that student teachers already possess certain understandings of teaching based on personal theory. Coursework can then be designed around this assumption in such a way that the ‘personal theories’ are first foregrounded through guided reflection before ‘formal theory’ is introduced as a lens through which each student can interrogate, question and critique their own assumptions and beliefs about teaching and learning. This way the students will deepen their understanding of theory in the practice of teaching.

## Recommendations

Based on the discussion above a few issues appear to stand out as requiring attention in teacher education. First is the issue of what student teachers bring with them to pre-service teacher education programmes and how teacher educators can make the most out of this anecdotal knowledge in designing courses and modules. University coursework should strive to tap more into the personal beliefs and values student teachers already hold since these have a powerful influence on how teacher identities, professional demeanours and understandings of theory as formal conceptual and practical knowledge all develop. If we acknowledge that the most effective learning is that which starts with the known before moving to the unknown, as some of the student teachers in this study mentioned, then we need to also acknowledge that theory is best learnt in action. In addition, we need to acknowledge that personal theorising underpins the acquisition and understanding of formal conceptual knowledge (Gravett, 2012).

To make university coursework more meaningful and relevant for student teachers in their development of formal theoretical and professional knowledge about teaching we suggest that the period that students are in schools on teaching practice (TP) be extended in faculties such as the one reported on here. By spending more time in real classrooms student teachers will have more time to explore their beliefs and intuitive personal theories while simultaneously critiquing their knowledge of formal theory in context.



This process can be assisted by lecturers through guided reflection utilising portfolio-type action research-based assignments (Kwenda, 2014; Robinson 2014). Such guided reflection would enable student teachers to make sense of what they are doing, where, when, how and why. This way the student teachers would develop a deeper understanding of theory in practice. A longer TP period would also enable the student teachers to develop a rapport with their mentor teachers so that a more open relationship develops. This would encourage co-teaching and cross-pollination of ideas and beliefs about teaching and learning. Some of the student teachers in this study complained about how their mentor teachers were set in their ways and resented the 'new' approaches student teachers used in class. A longer TP stay would remove this mistrust and animosity. This way the inconsistencies characterising the way student teachers and their mentor teachers understand theory might be eliminated. University lecturers would also need to collaborate more formally with school-based mentor teachers in order for these stake-holders to narrow the perceptual and conceptual gaps in their understanding of theory and its role and purpose in practice. Further research into individual student teacher beliefs and experiences during teaching practice as variables influencing their understanding of theory in practice is required in order to shed more light on this theme.

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