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Differentiating between experience and expertise in mentoring student teachers

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Mentoring is intended to guide student teachers towards pedagogical decision-making within the complexity of the classroom. In this article we focus on the mathematics mentoring practices of 1 primary school teacher at a university-affiliated teaching school in Johannesburg. The teacher had many years of experience and had undergone some development as a mentor over a period of 5 years. With the research reported on here, we aimed at gaining insight into how the teacher conceptualised her mentoring encounters with student teachers and how this aligned with her mentoring practices and processes. Using a qualitative case study design and multiple methods of data collection, the findings point to the mentor teacher making substantial progress towards functioning as an expert teacher. However, the data confirmed a fluctuation in enactment of mentoring between experienced and expert teacher, in both generalised and subject-specific contexts. The implications of the findings are relevant for the thousands of school teachers who mentor student teachers and novice teachers, particularly in primary schools where teachers are often generalists and not subject specialists. The findings could also inform guidelines and policy briefs for training by higher education institutions, the Department of Basic Education (DBE) and the South African Council of Educators in order to support the development of expert mentor teachers.

Keywords: expert teacher; mathematical knowledge; mentoring; pedagogical content knowledge; practice; theory

Introduction

In teacher education, a mentor teacher plays a key role in aiding the process of enculturation of inexperienced student teachers into the practices of the profession (Feiman-Nemser & Parker, 1992). In South Africa, there is an expectation that most teachers are able and willing to provide guidance to student teachers for selected periods during their teaching practice. Here the focus is mainly on lesson preparation and teaching, classroom management and developing professional conduct. In a teacher training school, however, teachers as mentors for student teachers are expected to provide this type of guidance on a continual basis throughout the year to develop everyday routines and connect university coursework with teaching practice. Teachers in teaching schools are thus employed with these specific roles in mind. Teacher training schools have existed in other parts of the world for many years. In Finland (Kansanen, 2014) such schools are referred to as teacher training schools, normal schools or practice schools and in the United States of America (Darling-Hammond, 2008) as laboratory or professional development schools, with teachers in such schools having a well-developed idea of their mentoring role. However, teaching schools in South Africa are relatively new (Gravett, Petersen & Petker, 2014) and teachers, despite many years of experience in combination with exposure to training as mentors, are likely still to be developing an idea of what such a mentoring role will entail.

Working closely with the development of teachers in a South African teaching school, the authors were keen to understand the efficacy of the mentor training provided, how a senior teacher viewed her role as mentor, what influenced this conceptualisation and how her view of her role corresponded with her mentoring practices. We sought to understand how best to support tailored professional development with increased reflexivity at its core for the mentor teacher, and to understand the implications for the field.

Background to the Study

The research site was a university teaching school (TS), described as a "teaching laboratory", in which student teachers can engage in learning from and in practice (DBE & Department of Higher Education and Training [DHET], 2011:18). The TS was established in 2010 at a Johannesburg university working in partnership with the Gauteng Department of Education (GDE). The school operates as a Dewey Laboratory School with Finnish practice/teacher training (Niemi, 2012; Sahlberg, 2011). In the Johannesburg teacher education programme, students are involved as classroom assistants under the supervision of teachers to deliver selected lessons from their second year of study. The mentor teacher works with a group of students from the planning stage, observes them teach and then provides feedback in a way that is envisaged to provide organised and methodical interrogation, analysis and theorisation of practice (Henning, Petker & Petersen, 2015). The centrality of child study is emphasised in the teacher education qualifications at the affiliated university (Gravett et al., 2014) and the mentors are familiar with this focus. Secondly, the mentors are aware of the importance of bringing coursework and practice together in student supervision. As the school endorses the approach of longitudinal learner study, the school admissions policies support this and the learner cohort remains constant. The teacher thus has a good understanding of the learners, their backgrounds and challenges, and should be able to provide expert mentoring that incorporates these aspects.

Mentoring student teachers – differentiating between experience and expertise

We studied the differentiation between experience and expertise to understand the mentoring practices of the selected teacher in this research. There is a common assumption that if school teachers have many years of teaching experience, and are willing to share their knowledge with student teachers, it equips them sufficiently to act as effective mentors. We disagree with this stance. Experience in teaching does not necessarily equate to being a good mentor. Berliner (2001) and Hattie (2003) argue that years of experience do not guarantee that a teacher will be an expert. In describing the notion of experience, we used the heuristic of Berliner (1994) who argues for five stages to show the movement from novice at stage one, through stages two (advanced beginner), three (competent), four (proficient), up to stage five (expert). We reasoned that stages three and four best encompass the characteristics of an experienced teacher. At these levels, teachers are able to make conscious choices about what they envision in teaching and they have a clear plan on how best to reach these goals. They are also able to distinguish the important aspects that they need to pay attention to and what to ignore in the classroom. Thirdly, they are able to make curriculum decisions such as when to move to the next topic and begin to rely a lot on their intuitive sense developed through years of experience in the classroom.

In other literature that expands on the characteristics of teachers who in Berliner's (1994) model are at stage five, Hattie (2003) highlights five major dimensions of expert teachers developed from an extensive review of literature and a synthesis of over half a million studies. Expert teachers are able to identify essential representations of their subject; guide learning through classroom interactions; monitor learning and provide feedback; attend to affective attributes; and influence student outcomes. An expert teacher also possesses integrated subject knowledge. In other words, an expert teacher is able to link new content knowledge with prior knowledge and make adaptations to the lesson to accommodate learner diversity (Hattie, 2003:5). Despite the similarities between experienced and expert teachers, there are fundamental differences. According to Hattie (2003:15) these are "in the way they represent their classrooms, the degree of challenges that they present to students, and most critically, in the depth of processing that their students attain." As Hattie (2003) points out so poignantly, years of experience is not enough. We agree and argue that while we acknowledge the effectiveness of experienced teachers in promoting children's learning, more is required for those teachers appointed as student teacher mentors. By way of illustration, studies of experienced teachers' classrooms reveal orderly environments where emphasis is on what the teacher does and says to create systematic learning experiences for children. Expert teachers, on the other hand, place more emphasis on effectively scanning classroom behaviour, making greater references to the language of instruction and children's learning – this type of emphasis can lead to less smooth and ordered classrooms, but where there is ample room for adaptation and adjustment to promote learning.

However, teacher expertise is impacted by a number of factors. An important one raised by several scholars (Berliner, 2001, 2004; Bullough & Baughman, 1997; Lin, 1999) is that expert teachers find it difficult to make decisions about teaching and learning if they do not know the learners well. Bullough and Baughman (1997), for instance, showed how, when an expert teacher moved to another school, she was not entirely adept in the new environment. In another study (Berliner, 2004), teachers who were asked to teach learners they had not met before, reported that they were unable to apply the routines that had been developed in their own classroom, a skill that enabled them to spend more time on teaching and responding to individual children's learning. Thus, while expert teachers' actions in the classroom may appear effortless and automatic, they are actually a result of "reflection, conscious deliberation and theorization" of their practice (Tsui, 2009:36) based on a thorough understanding of the learning needs of each learner in their classes (Horowitz, Darling-Hammond, Bransford, Corner, Rosebrock, Austin & Rust, 2005). We do not equate experience with teacher expertise, but we do recognise that "experience is the *sine qua non* of expertise" (Caspari-Sadeghi & König, 2018:7). Learning from past experience is important in building both episodic and case knowledge which forms the basis for developing expertise (Berliner, 2004). One cannot develop expertise without experience in the classroom to learn from, and practice specific skills, routines, automaticity, and develop domain-specific knowledge (Berliner, 1994; Caspari-Sadeghi & König, 2018). We are of the view that the learning gained from experience contributes to the building of teacher expertise (Berliner, 1994). Teacher mentors should thus have a clear developmental path from being an experienced teacher towards the development of traits associated with expert teachers.

In addition to Hattie's (2003) general dimensions, we reason that subject-specific knowledge should also be accorded importance. While different pedagogies and strategies apply to different subjects (Hudson, 2007), primary school teachers, especially Foundation Phase teachers in South Africa, are generalists, and are expected to teach all subjects. Hudson (2007) argues that when this is the case, as was observed with primary

school teachers in Australia, teachers will not have expertise in all areas. Hence, when they become mentors they may not have the expertise to guide pre-service teachers learning in all subjects effectively and equally. This may mean that additional training is required or that different mentors may be required for different subject areas.

One of the attributes of expert teachers is that they have deeper representations of subject matter knowledge, including pedagogical content knowledge (Berliner, 2001; Hattie, 2003). In this study, for us to understand how the content and pedagogical knowledge influenced the mentoring process, it was necessary to unpack what expertise meant for the subject featured in this mentoring process, namely mathematics. For example, expert teachers are able to guide learners to think logically and to question answers as learners need to learn to "question ideas and use mathematical arguments to justify their ideas" (Findell, 2008:20). As such, they serve as role models to student teachers by always providing justification for their reasoning and not expecting students to simply accept their answers as true just because the teacher said so (Findell, 2008). To do so, we believe that an in-depth understanding of both the content and pedagogy is needed. We find the work of Ball, Thames and Phelps (2008) useful in outlining the pedagogical content knowledge (knowledge of content and students, and knowledge of content and teaching) needed for teaching mathematics, and differentiating between knowledge unique to the work of teaching (specialised content knowledge), and the common content knowledge needed by teachers and non-teachers alike. Common content knowledge (CCK) refers to mathematical knowledge and skills that are not unique or limited to teaching (Ball et al., 2008) and can be used by other professionals in their daily work. Specialised content knowledge (SCK), on the other hand, is mathematical knowledge and skills specific to teaching, such as providing explanations for common rules, finding examples to make a specific mathematical point, or modifying tasks and connecting content to topics in earlier or later years. We worked from the premise that mentor teachers must themselves have excellent mathematical knowledge in order to effectively assist student teachers in combining "their study of mathematics with their study of educational theories so that they will learn to teach mathematics efficiently" *(*Asikainen, Pehkonen & Hirvonen, 2013:87). We thus took for granted that a mentor teacher's pedagogical thinking and understanding of the structure of mathematical knowledge should form an important part of the mentoring conversations with students.

A third element of expert teachers is that they are more likely to be reflective about their practice. The work of Argyris and Schön (1974), who differentiate between teachers' espoused theory and theory-in-use, informed our views. "Espoused theory refers to the worldview and values that people believe guide their behaviours" while "[t]heory-in-use refers to the worldview and values reflected in the behaviours that actually drive [their] actions" (Argyris & Schon, 1974, in Savaya & Gardner, 2012:145). Argyris (2002) explains that the theories in use are similar to single-loop learning, whereby premises and inferences are kept tacit, and defensive reasoning is used to inhibit inquiries into one's actions, resulting in a deeper lack of awareness of incorrect practices. In mentoring, an expert teacher would need to be aware of the alignment between what he or she declares or/articulates (espoused theory) and what students observe (theory-in-action) in order to make the thinking behind the actions clear (Collins, Brown & Holum, 1991). If teachers are unaware that their theories-in-use rather than their espoused theories drive their actions, it may have a negative impact on reflections to improve practice and this may confuse student guidance in the process. We are of the view that if mentor teachers make their thinking clear to student teachers, they will be able to reflect on their own thinking, values and actions. In this way, student teachers will be able to gain "deeper insight into the cognitive aspects of teaching" and understand the complexity of teachers' practical knowledge (Meijer, Zanting & Verloop, 2002:407).

Research Methodology

This study can be classified as a qualitative case study (Merriam, 1998:19) as it involved "intensive descriptions and analyses of a single unit or bounded system." The bounded system included a teacher education programme and an affiliated primary school, known as the teaching school. The elements of the case comprised the mentor teacher, the student teachers under her supervision and aspects of the clinical/classroom setting – it, therefore, involved detailed descriptions and analyses of such a bounded system (Merriam, 1998). It would not have been possible to have an accurate picture of how the mentor teacher conceived her role without considering and including the setting, context and boundaries within which the phenomenon occurred. The following research question guided the investigation: *How does a mentor teacher's conceptualisation of her mentoring role align with her mentoring practices?*

The mentor teacher was purposely selected based on a number of criteria. She had 24 years of experience in Foundation Phase teaching and had been involved as a mentor to student teachers in the teaching school since its inception 5 years ago. She also held a leadership position in the school management team and was responsible for curriculum leadership in the Foundation Phase. She

thus had detailed knowledge of the structure and day-to-day working mechanisms within the teaching school, as well as the structure of the university practicum. Based on these criteria, we reasoned that she would supply rich and thick data for the study (Patton, 2002).

In this study, we referred to her by the pseudonym, Ruth. We used multiple methods of data collection in a phased approach over a 6-month period. In phase one we observed a full mentoring session, which included three components: a reflective discussion with students on lesson planning; the actual lesson taught which may or may not have involved input from the mentor teacher, and a discussion after the lesson where the mentor teacher engaged with the student teachers. Data collection took place within the teacher's classroom in the teaching school and included observations, document analysis, and a video-recorded discussion between the mentor teacher and her mentees (a group of student teachers). In phase two we conducted a semi-structured interview with the teacher. We should mention here that Ruth's responses to the interview questions presented here are quoted verbatim without any editing.

We are aware that Foundation Phase teachers are generalists and are expected to teach (and mentor students and novices) in all subjects of the school curriculum. In this research, we focused specifically on the mentoring of mathematics as one of the key areas of growth in primary school teacher education. We were particularly concerned with the important role of early mathematics teaching and learning for the success of learners later on in the schooling system (Aubrey, Godfrey & Dahl, 2006) and its value as a gateway subject for science, technology and innovation careers in South Africa. In this respect, we sought an in-depth understanding of how the teacher made her tacit knowledge visible to students and about her concomitant choices with respect to content and pedagogy in mathematics. Challenges with respect to validity and reliability in single case studies were addressed by the use of member checks, triangulating data from various data collection sources and employing an audit trail to ensure that the results "[were] consistent with the data collected" (Merriam,1998:206).

Using the constant comparative method of data analysis, we worked inductively to code and categorise all data sets (Creswell, 1998; Patton, 2002). Our aim was to confirm the emerging findings (Merriam, 1998) and to provide supporting evidence (Creswell, 1998) to form a general picture of the data, or what Henning, Van Rensburg and Smit (2004) describe as thematic patterns.

Findings

The findings show that even after mentor training and almost 7 years of operating as mentor in a teaching school, the teacher's mentoring practices in mathematics fluctuated between the roles of experienced teacher and expert teacher, with her mostly drawing on her experience in mentoring students. On the other hand, there was evidence that the mentor teacher leveraged her experience, both of the curriculum and of children's development, to shift towards operating as an expert teacher. The teacher's conceptualisation of her mentoring role and her practices were somewhat inconsistent and she recognised the need for further personal development.

Moving Unevenly between Experience and Expertise in Mentoring Practices

The mentor teacher, Ruth, seemed to be in a state of flux, sometimes mentoring like an expert teacher, but mostly as an experienced one. The data clearly show how she, in her mentoring, emphasised what she was doing in the classroom – a quality that Hattie (2003) regards as usually being associated with experienced teachers.

There was evidence of this in what Ruth said during the interview and in the video recording (**v**ideo recording **p**ackage **l**esson **p**lanning from the recording with the **m**entor [VP/LP/M-1]) when she advised student teachers on what to do to assist learners in achieving the lesson objectives:

> *Sometimes they might have an idea but not put it across the way I would put it. But it's understandable considering the experience that I have and they have, it's two different things. ... what makes me content many a times when I talk to them, it's understanding that they can see the way that this is how you are supposed to do it.* (**Fifth** page of the **t**ranscript from the interview with **m**entor [TM5])

On the other hand, expert teachers focus their attention on the multi-dimensionality of the classroom and its effects on teaching and learning (Hattie, 2003). The data show little evidence of Ruth explaining the reasoning behind her actions, as she neglected to make her thinking clear to the students (Collins et al., 1991). This was evident in her oral feedback during the mentoring sessions, with the focus on generic comments about how students could improve on the management of learner behaviour in the classroom. This resonates with Hattie's (2003) ideas of a teacher who is not yet an expert and who tends to focus mainly on correcting existing disruptions (Hattie, 2003):

> *You called on them quite a few times. It's not supposed to happen like that because it looks like you are glorifying that child.…So sometimes when they do their own thing, you just pretend that you don't see them but now go to the specific child and*

> *tap them on the shoulder and move on*. (**V**ideo recording **p**ackage on **m**entoring **s**ession recording with the **m**entor [VP/MS/M-1])

On curriculum knowledge, however, there was a distinct shift as Ruth's actions and discourse showed evidence of mentoring as an expert teacher, especially when she drew on her contextual knowledge about children. She used the official mathematics curriculum documents as a point of departure for leading the students towards developing their pedagogical knowledge, curriculum knowledge as well as suitable classroom management strategies and mathematics teaching strategies. The video recordings (VP/LP/M-1) also reflect the actions of a mentor who encouraged the student teachers to develop "a pedagogical stance rooted in knowledge of child development" (Feiman-Nemser, 2001:1018) as she discussed with students how the policy statements might be used in conjunction with their knowledge of the learners' mathematical development to achieve the set curriculum outcomes.

One of the dimensions of an expert teacher identified by Tsui (2009:8) is the ability to "engage in reflection and conscious deliberation" by making explicit tacit knowledge gained from experience, or "practicalizing theoretical knowledge" (2009:21). It is clear from the data that Ruth was reflecting on both her teaching and mentoring practices. She conceived her mentoring role as continuously changing and in this respect considered herself a lifelong learner in the mentoring process. This was evident from her descriptions of her role: "*when you are a mentor teacher it doesn't mean that you know it all*" (T/M-34). There were also other pointers: "*because once you here, … you stagnant here, then you are just going to repeat the same idea over and over and over which is not 5 years of teaching, it's 1 year of repeating five mistakes*" (T/M-28).

Ruth also acknowledged the evolution of her mentoring experiences over time. In the excerpt below, she problematised her existing practices towards the development of her personal practical theory of teaching:

> *I always used to think that … when you mentoring somebody, that person must be like you … where you find yourself having to say: You know, you did this right; you did this wrong, or look at this, and this one is fine. But now if it's like that, I've got my flaws as well.…So from then, I made sure that you know what I need to polish, because now there's somebody that's watching me.* (T/M-26)

She also seemed to understand that in order to maintain a supportive and consistent relationship with the student teachers the learning experiences should include what Hudson (2010) refers to as the possibility of professional development on the part of the mentor in "advancing their own mentoring skills" (Hudson, 2010:39). There was evidence of this in the data from the interviews: "… *as a mentor teacher, I'm thinking that if I can get more exposure which I'm trying to do with just take out an article and just go through it and see how other people are doing it*" (T/M-27).

Such reflections show that she was mindful of the importance of her own development and growth in teaching and in mentoring and was becoming more cognisant of the alignment between what she espoused to students and what students observed in her actions (Collins et al., 1991), although this was not always evident during the mentoring. In order for this to be effected, Ruth would need not only to understand the importance of making her thinking more visible to students, but also to learn how to articulate her thinking explicitly to them.

Subject-specific Discourse Evident in Mentoring as an Expert Teacher

The data show the presence of subject content knowledge and specialised subject matter knowledge of mathematics influencing Ruth's practice. Ball et al. (2008) distinguish between CCK and specialised mathematical content knowledge (SCK) and both were evident in the mentor's repertoire. We surmise that the evidence of robust mathematics content knowledge was due to many years of classroom experience as a teacher and from guiding novice teachers as a curriculum leader. For instance, Ruth exhibited SCK when describing how she taught number concept development in mental mathematics to a Grade 1 class, in combination with making her thinking explicit to student teachers. She explained how she unpacked and scaffolded the mathematical knowledge needed to understand addition using different methods. In doing so, she recognized that "teaching requires knowledge beyond that being taught to students. For instance, it requires understanding different interpretations of the operations in ways that students need not explicitly distinguish" (Ball et al., 2008:400):

> *I always tell the students that when you teaching maths … you need to ignite something in them.…you can't come and say: Today, let's count, tomorrow, let's count, … It ends up being something that is okay it's a routine.* (T/M-20)
>
> *I'll show my learners different ways of adding. It's (not) just 1 plus 1 and that's it. Then I say, if I have 1, then I see a 2. What else must I get? … If I remove this number, then you see this number, what do you think I must add here to put that number on? I want to go to the number 5. I've got 1, 2, 3. What else do I need? Or if I want to go to 5 and I'm standing at 2. To ensure that it's right, if I say 1 plus 2 equals 3, but if I say 3 take away 2 equals 1, so I know my answer is right. I teach them skills so that even if whatever number they can get, they can be able to manipulate it.* (T/M-24)

Another example of Ruth drawing on SCK was when she demonstrated her knowledge of the structure of mathematics from the development of

an elementary perspective of concepts and how these were related to other concepts in an integrated manner (Flores & Carrillo, 2014). This was clear from the video recordings on the use of a problem-solving approach to teach rand and cents to a Grade 3 class. Ruth explained that the algorithm to multiply two numbers together related to place value and the distributive property. She also explained how this content area could be used to integrate teaching money in the content area of numbers and operation with the content area of patterns, functions and algebra:

> *Make a pattern with money … 2 rands, 4 rands, … 5 rand, … 25 rands? What did I skip … 20? You then teach the rule of the pattern. Learners must include the R or c before the number*. (VP/LP/M-1)

Her mathematics-specific advice on the use of place value to teach the addition of rands and cents was yet another example of Ruth exhibiting SCK in her mentoring. She informed students that a "*child should think about place value before they start adding*" (VP/MS/M-1) and "*when adding 100 rand plus 50 remind them of place value*" (**seventh** page of the **p**racticum **d**ocuments with the **m**entor [PD/M-7]). She provided this feedback to students immediately after they presented the lesson, thus encouraging reflection on enactment (Korthagen, 2010). She then immediately followed this with encouragement to students to reflect critically on their actions, referred to by Schön (1995) as reflection-on-action. We view this as making her tacit knowledge explicit to students, demonstrating an understanding of the "place-value system in a self-conscious way that goes beyond the kind of tacit understanding of place value needed by most people" (Ball et al., 2008:400).

Ruth was able to balance the use of SCK with the use of CCK in her mentoring conversations. There was evidence both in the interview and the video recordings:

> '*I see a 9 and I see a 2. I'll just double the 9 and I'll get my answer*' and again '*when they see 5 times 2 they will see I must have two groups of 5 and bring them together and I will have my answer.*' (VP/LP/M-1)

Ball et al. (2008) also identify the use of correct mathematical terms and notations as CCK. In the recorded discussion Ruth told the students that while they were planning their lessons they should use appropriate mathematics vocabulary and plan for active learner engagement in the lesson. She explained that "*vocabulary is the signpost(s) to remember … doubling means put together only two. When one says halving, it means I take the equal part out*" (VP/LP/M-1). In the mentoring discussion, after students had taught the lesson, she commended them on integrating new vocabulary into their lesson and explained that these were "*teachable moments*" (VP/MS/M-1).

Mentoring to Bridge the Theory-practice Gap

Research on quality mentor teacher feedback highlights the importance of mentors providing quality feedback to student teachers (Ambrosetti, 2010, Hudson, 2014) to bring together "practical knowledge and more theoretical notions they learn about in teacher education" (Meijer et al., 2002:416). Ruth's personal theories (beliefs) and her practical knowledge derived from experiences (Levin & He, 2008) combined with theoretical insights acquired from the mentoring workshops arranged by the faculty, appeared to be guiding her mentoring discussions to demonstrate theory in action.

Ruth spoke from the perspective of an experienced teacher when she recognised that students were likely to be of the view that mathematics learnt in school had little to do with the real world (Schoenfeld, 1992). In this respect, her personal theories were made explicit when she told the interviewer:

> *Student teachers need to know that a love for maths is cultivated … like when you work in the class, you can't be teaching maths and coming: 'learners … take out your DBE …' Then you are not watering that flower … when you* [are] *teaching math you need to be somebody who's active; you need to be someone who is hands on.* (T/M-16)

Ruth's personal theory extended to how children should be taught mathematics by explaining the importance of making use of practical, hands-on activities. This view aligns with Korthagen and Kessels' (1999:7) explanation that mathematical problems should be "presented within a context recognizable for children, and often taken from everyday situations." Ruth emphasised this to students constantly: "*for your lesson to be more effective, you need to bring something that …will help you to explain* [the concepts]" (T/M-18).

She reiterated this in the interview:

> *Many a times I have picked up, over the years that when they* [student teachers] *do math, they like to come with the worksheet and say 'Now look this is what I want you to do.' But now I want to move them from that because our kids grow up thinking that math is something that you write down. So sometimes I'll come with a few stones, a few leaves, they can see that counting, it's everywhere. It's not just in the class. Even when I go buy bread. I need to know that if I have a 20 rand and the bread is 13 rand, I must have change of 7 rand. … what I have picked up … when you give them money at home and say go buy bread, they can come with the correct change, and tell you even if they are short. But in the class, you give them the same activity, they can't do it*. (T/M-16 and T/M-17)

Despite her deliberate attempts to provide student teachers with developmental feedback to bridge the theory-practice divide, Ruth acknowledged that this continued to be one of the greatest challenges she

experienced: "*when it's theory, they always struggle to bridge the two.*" She also explained that "*what I've picked up is that when you teach them that side* [coursework], *when they come here* [school], *they are expecting something else*" (**t**ranscript with mentor teacher pseudonym – **R** - page **12** [T/R-12]). She confirmed this notion by stating that "*they* [the students] *are thinking: 'Oh Miss lecturer and Miss mentor are two different people, so they are talking two* different things'" (T/R-12).

Ruth attributed this to her experiences as a mentor in the TS. She shared that her reflective stance as a mentor began to develop only after she began teaching at the TS. In her view, it had also made her more cognisant about modelling good teaching practice for students:

> *When I started teaching, I used to imitate what I saw my teachers do. They would give me work, then go and mark the register. But now, since I came to the TS I picked up that you know what, there's kids that will always want you to go around and check, if what you said, they understand and clarify to some of them, but now if you give them work and keep yourself busy, you don't see when they get lost.…So the students* [student teachers] *need to know that teaching is not just about talking and when you are finished, activity, then after the activity then we move onto something else. They need to know that between the teaching and the activity, … the relationships just goes on, it doesn't stop until the bell rings.…Once you give them work, you follow up on the work, and you must give them feedback. So if you don't follow up on it, how are you going to give them feedback? … I know that whatever student* [student teacher] *is watching me, they know that, it's not just about the lesson and the activity.* (T/M-9)

From this we surmised that Ruth had developed an understanding that classroom practice could be viewed through the lens of students' coursework and vice versa, but that it was an area that required constant attention. She said "*you can work with them on Monday, Wednesday … on Thursday around this time, only then do we get to the 'Aha stage'*" and that "*it takes time*" (T/R-12).

Discussion

Mentor teachers need to understand that mentoring student teachers involves moving beyond simply guiding students' actions in the classroom to engaging them in substantive discussions about teaching (and children's learning) while at the same time modelling expected teacher behaviour. How to optimise this in the TS has been a struggle. Our efforts at mentor teacher development in a TS have moved from generic introductory training to more specific skills training and has incorporated both individualised coaching and larger group training, usually with the assistance of expert teacher mentors. There is evidence that this approach was successful with Ruth who has made substantial progress towards functioning as an expert teacher. However, the data confirm that she was not operating as an expert teacher all the time, but rather fluctuated between the role of expert teacher and experienced teacher, with the latter stance dominating.

For teacher education, this inconsistency is problematic for many reasons. One of the concerns relates to criticisms that universities are not adequately preparing teachers for the reality of school classrooms (Grossman, Hammerness & McDonald, 2009). From a South Africa perspective, Gravett (2019) questions for which reality teachers are being prepared. Do we prepare them for schools as they are, as they should be or for schools of the future? In the current debates on what needs to be done to prepare teachers for the future, also referred to as the Fourth Industrial Revolution (Xing, Marwala & Marwala, 2018), a key question is how one reimagines a teacher education curriculum that is able to prepare teachers for both current and future classrooms. It would mean developing teachers who are versatile (Gravett, 2019), able to develop an inquiry-based mindset, and to learn from their experiences to alter and enhance their teaching practices. In this regard, the role of schools, especially mentor teachers being able to "practicalize" their theoretical knowledge (Tsui, 2009:20) to student teachers, becomes even more pertinent.

A second concern is a content-crowded curriculum (Gravett, 2019) and the adherence to strict timeframes for content coverage as stipulated by the Department of Education that could result in teachers taking longer to develop into experts. The expectation that Ruth would reach the status of expert teacher in 5 years was, therefore, unrealistic. Moreover, from the data we became aware of the influence of Ruth's learning during her apprentice of observation (Lortie, 1975), as a learner, and as a novice teacher on both her teaching and mentoring. It was through numerous mentor training opportunities over the 5 years that Ruth developed a reflective stance of her own classroom teaching and mentoring practices. Regular meetings with teachers and teacher educators were necessary to reach a shared understanding on what good teaching and mentoring entailed. Much time was invested in teacher development, with teachers and teacher educators taking shared responsibility for the development of student teachers. This is unusual from a South African perspective, as studies by Robinson (2001, 2015) point to teachers citing little time, heavy workloads and overcrowding as limiting factors when mentoring student teachers. In addition, by the end of a school day, Robinson (2001:107) observed that teachers "wanted to rush off" even when there was a staff development workshop planned by the school.

A third concern is strengthening subject-specific mentoring. As a laboratory school, we experimented with subject-specific teaching in the Foundation Phase. In subjects such as languages and mathematics, specialist teachers teach learners from Grade 1 to Grade 3. However, in a subject such as life skills this means that the teacher would need to be a specialist in the beginning knowledges of science and social science, personal and social well-being, creative arts and physical education. It would mean that a life skills teacher would need to be a specialist in a number of areas. Juxtaposing the TS practice of subject-specific teaching with another approach, such as that of Finland, where the same teacher teaches most of the subjects across Grades 1 to 2, followed by the next teacher teaching the same class from Grades 3 to 6, or in some schools, the same teacher teaching from Grade 1 to Grade 6 (Tang, Pakarinen, Lerkkanen, Muotka & Nurmi, 2019), we again grapple with what will work best for learners, student teachers, and mentor teachers. In the Finnish approach, the teachers will have a rich case knowledge of children (Berliner, 2004) and will be able to form trusting relationships over time. On the other hand, a typical South African classroom usually has the same teacher teaching all subjects for 1 year, or approximately 9 months, if school holidays are taken into account. From this we argue that time to learn about the children, usually in large classes, is insufficient. There is a need to find ways to strengthen mentor training that balances subject expertise with learning about children. Development opportunities will need to consider that experts need to understand how children learn in specific subjects, together with an in-depth knowledge about the central ideas of a disciplinary area. Such deep understandings will enable them to engage in Argyris's (2002) double-loop learning, making their tacit knowledge in subject-specific mentoring visible to student teachers.

Conclusion

The findings in this study suggest that inconsistency between a mentor teacher's conceptualisation of her mentoring role and its alignment with practice needs more attention if mentoring is to produce the desired effects on student teachers and novices. The mathematics mentoring practices of the teacher in this study, even after numerous training and development opportunities and practicing as mentor for almost 7 years, still fluctuated between experienced teacher and expert teacher with the former dominating in mentoring encounters with students. There was however, evidence of a tangible shift in the teacher's thinking and understanding of her own areas of required growth and development in order to operate effectively as a student mentor. This was likely as a result of the close cooperation between the teacher education programme and the school as practicum site, the focused training and development opportunities provided to the teacher, and the teacher's own curriculum knowledge and self-reflexive stance.

However, the implications of the findings for mentoring of student teachers are significant. Further studies on how this teacher operated when mentoring life skills and/or languages teachers could have expanded the findings considerably. It does, however, raise a few questions. Is the expectation that primary school teachers, who largely operate as generalists teaching mathematics, life skills and languages, will operate equally well as experts in their mentoring of students in all areas of the curriculum? If so, then how do teacher education and other constituencies support such teachers to develop as experts?

If novices and student teachers are expected to learn most from teachers who operate as experts, the conditions in schools and the training and development opportunities to assist mentors to achieve the level of expertise need to be actively created and consistently implemented.

Authors' Contributions

Hayley Van der Haar wrote the first draft, addressed the reviewers' comments with input from the other authors and resubmitted the article to the journal. Sarita Ramsaroop and Nadine Petersen provided critical input for revision and revised the sections on methodology and findings. All authors reviewed the final manuscript.

Notes

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