

## Examining Student Teachers' Perceptions on Mentoring During Field Experiences in Distance Learning: A Pilot Study

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**ABSTRACT** This paper is a pilot study that examines the perceptions of mathematics student teachers on the mentoring they received during practicum. Pre-service teachers' views about teaching – and also their ideas regarding their own teaching abilities – are highly dependent upon their mentor teachers. A question may be posed: are mentors helpful to open distance learning (ODL) student teachers? A structured questionnaire was employed to collect data, which was analysed quantitatively using descriptive statistics. The results are discussed in the categories of responses about support with lesson preparation, being coached, teaching experience, mentor's feedback, views about the course and the subject, mathematics. *The* results on the perceptions of pre-service teachers on the mentoring they received during teaching practice were generally positive. These involved mentors helping them to identify teaching material, to prepare lessons, to provide them with useful feedback and to coach them on how to teach. The findings from this research will help to provide insights on the usefulness of the present mentoring system. It is recommended that strategies to improve and strengthen social relationships to the mentoring system in ODL contexts be planned.

### INTRODUCTION

The art of teaching is not gained by student teachers in campus lectures but through teaching practice in real classrooms. Research studies related to prospective teacher education revealed that student teachers view their practicum experiences as an important and essential component of their induction into teaching (becoming a teacher) (Sedibe 2014; Ben-Perets 2001; Tang 2003). Tok and Yilmaz (2011: 101) view practicum as “an important rite of passage in a teacher's career”. Some other literature in teacher education acknowledges the development of the student teachers' relationship with their mentors as crucial specifically during practicum (Maphalala 2013; Glickman and Bey 2008). However, researchers such as Korthagen (2001) and Stuart and Thurlow (2000), provide documented criticism of the way teacher education institutions prepare student teachers for teaching. Niemi (2002: 770) reports of Finnish student teachers who “complain about passive teaching and lack of active learning methods, and the contents of the studies which did not have connections to real life”. There is also research that points to the positive impact of the practical experience in the education of teachers. Another study by Smith and Snoek (1996) reported that student teachers from the Netherlands and Isra-

el saw practicum as the most valuable part of their induction into teaching.

These practicum experiences could be pertinent in the context of mathematics teachers' training in an ODL context where the mode of course delivery is mainly by electronic and printed materials, which do not allow modelling of acting out ideal exemplary teaching. Student teachers, therefore, do not have an opportunity to experience how to teach learner-centred constructivist theories and pedagogy presented in their courses (Harrison et al. 2006). Student teachers' knowledge about teaching is based on the theoretical knowledge from their study material. The mentor teacher in ODL plays a critical role in developing student teachers' professional knowledge and mathematics teaching skills to produce high-quality mathematics teachers. The mentors in placement schools during teaching practice are the ones who model good teaching practices and help the student teachers to plan, teach and reflect on lessons (du Plessis 2013; Barry and King 2007). This affords them an opportunity to refine their teaching skills and move from knowing about teaching to knowing how to teach. Being mentored during practice teaching, they can apply the principles of teaching and learning that have been studied during the course of the year.

Some studies on teacher training through open distance learning focused on conceptual

frameworks for the design and implementation of teaching practice in distance teacher training (Kamper and du Plessis 2014); the role of Mentor Teachers during Teaching Practice (Maphalala 2013), perceptions of students' teachers on mentoring in a face to face institution (Sedibe 2014). Hudson (2007) observed that there is little literature on subject-specific mentoring like mathematics education for student teachers, and that empirical data for open distance field experience is lacking. There is, therefore, a need for more empirical evidence on what effective mentoring can be in specialised subjects such as mathematics in open distance learning (ODL) contexts. Perceptions of student teachers on mentoring in mathematics in ODL contexts have not received much attention; hence, this study.

The purpose of this study was to examine the perceptions of mathematics student teachers at an open distance learning institution on the mentoring they received during teaching practice in South Africa. Interpersonal interaction is a key quality valued by student teachers and this is lacking in ODL context tuition. This paper proposes that the lecturing staff should plan and strategise for maximal utilisation of mentors in placement schools to provide opportunities that reinforce the key aspects that beginning teachers perceive as valuable for their development as effective mathematics teachers in an ODL context. To achieve the purpose of this paper, the literature on mentoring is reviewed, followed by a description of the context of the study, namely teaching in the South African ODL context, the research method, descriptive statistical analysis, findings, discussions and conclusions.

### Conceptualising Mentoring

Mentoring is a popular model of teaching practice to enable student teachers to enact pedagogical theories using practical realities of the classroom. Effective mentoring programmes pair an experienced teacher with a student teacher so that the former can provide the latter with regular coaching and feedback that are essential for student teachers to know areas where they are doing well or where they need to improve. In such programmes, mentors may establish a dynamic reciprocal relationship with student teachers that promote the career development of the student teachers by reflecting on

their pedagogical approaches in an effort to improve their teaching practice (Vonk 1993). Mentors, who are sometimes referred to as "supervising teachers", "cooperating teachers", "lead teachers" or "host teachers" are chosen by the teaching practice departments of teacher education institutions to mentor, model or coach beginning teachers (Hudson 2009). Mentoring is sometimes not effective to develop the professional skills of student teachers to reflect on their teaching because some mentors are not trained on how to conduct their professional duties (Mavhunga 2004).

A study by Hobson (2002: 5) on student teachers' perceptions of school-based mentoring, initial teacher training showed that students teachers considered to be a, if not the, "key aspect" of school-based beginning teacher training. Furthermore the accounts of the student teachers' experiences suggested that teacher-mentors are not always successful in creating conducive conditions for effective student teacher learning.

The term "mentoring" has been defined in various ways by different researchers. Malderez (2001: 57) defines mentoring as "the support given by one (usually more experienced) person for the growth and learning of another, and for their integration into and acceptance by a specific community". Tomlinson (1995: 7) further defines mentoring as "assisting student-teachers to learn how to teach" during field experience. This definition suggests that "mentoring" during practice teaching is undertaken not merely by teachers holding the formal title of "mentor" or (as they are sometimes called) "teacher-tutor" but also by other teachers whose advice and support may be sought or whose teaching and interactions with learners may be witnessed by students teachers. Having said this, it might be argued that all teachers in host schools should be aware of the importance of mentoring, and should have some ideas about how to perform such a role effectively.

Brooks and Sikes (1997: 67) suggest that effective mentors should have experience and expertise in key areas such as:

- ♦ enabling students to learn in ways that are most effective for them;
- ♦ managing and organising classrooms;
- ♦ planning and developing curricula;
- ♦ matching content and pedagogy to the learners they teach;
- ♦ dealing with difficult learners;

- ♦ knowing a range of marking and assessment, recording and reporting techniques;
- ♦ planning and managing practical work, where appropriate; and
- ♦ working collaboratively with colleagues.

More generally, mentors are defined as experienced teachers, who support and assist less experienced colleagues through professional training, supervision, peer teaching, coaching, guidance, and counselling (Shaw 1992).

### Teaching Practice in the ODL Context

In the ODL environment of the current study, student teachers participate in teaching practice for a minimum period of five weeks (25 school days) per semester. They spend the rest of the teaching practice period observing lessons taught by the host teacher or performing some professional duties assigned to them by the host teacher. Student teachers observe demonstration lessons by mentor teachers and then write detailed lesson plans, teach lessons practicing the implementation of pedagogical strategies mutually agreed upon. The teaching practice department gives student teachers a template of a lesson plan which, among other things, highlights essential professional aspects such as lesson outcomes, manipulatives to be used by learners to develop concepts, learners' prior knowledge, lesson stages, time management and reflection on the lesson taught. They are expected to provide a summary of five lessons they taught in a subject together with the evaluation comments made by the mentor teacher and supervisors to the University for grading. The university appoints supervisors in the districts where student teachers' attachment schools are located.

### Theoretical Framework

Three major tenets of social constructivist theory (Vygotsky 1978) were found to be applicable to the pre-service perceptions of teachers about the mentoring they received during teaching practice:

- ♦ *knowledge is constructed by learners* – based on their prior experiences (pre-service teachers bring their own set of beliefs, values and attitudes into the classroom where they practice their teaching);
- ♦ *learning involves social interaction* – the interaction happens between pre-service

teachers and mentors, who provide guided support; and

- ♦ *learning is situated* – during practicum experience, learning occurs within the context of a real classroom.

## METHODOLOGY

### Design

A quantitative design was used to identify the perceptions of mathematics education student teachers on the mentoring received during field experience in an open distance learning institution.

### Sample

A total of 200 student teachers in the ODL teacher education programme were selected. A stratified random sampling of students at different year levels in the BEd Foundation, Intermediate and Senior phase, Further Education and Training (FET) and Postgraduate Certificate in Education (PGCE) constituted the sample. Fifty students in each category were chosen to maintain a consistent sample (Cohen et al. 2002; McMillan and Schumacher 2010). All these students studied mathematics as a teaching major at both the degree and diploma level, which qualified them to teach mathematics from Grades R to 9 and Grades 10 to 12 respectively.

### Instrument

A structured questionnaire was used to elicit student teachers' perceptions of their mentors' assistance or lack of assistance among pre-service teachers in an ODL institution. The instrument was designed based on the literature (Barry and King 2007; Hudson 2007; Mavhunga 2004) and consisted of closed questions. The questions related to student teachers' experiences with lesson preparation, being coached, reflections on teaching experience, mentor feedback, coursework and views on mathematics as a subject. The questionnaire was developed by three mathematics education lecturers based on their previous experience and with reference to the literature. Data was collected by means of a five-item Likert-type scale questionnaire (strongly disagree, disagree, neutral, agree, strongly agree) with 27 opinion statements. The ques-

tionnaire was piloted among three mathematics education markers for the BEd programme to check for typographical errors and to identify possible ambiguities. Some items were removed, resulting in a questionnaire with 27 items. Some of the questions were written as positive statements (Oppenheim 1997). The questionnaire was structured to capture participants' biographical information, which included age, gender, qualification, matriculation mathematics and symbol, other qualifications, current job, programme for which they were enrolled, their present year of teaching practice, name of province and school location where they taught. It also sought information on the level of resources and opinion statements about their experiences during teaching practice. This paper reports only on opinion statements.

### Procedure

Questionnaire administration was by post. One hundred questionnaires were posted in the first batch with a 25% return. Another 100 hundred were sent in order to improve the return rate of the questionnaires as proposed by Schulze (2012), who experienced that double the number of participants respond after the second questionnaire has been mailed in comparison to the response rate for the first questionnaire. A self-addressed envelope was included to enable the student teachers to return the completed questionnaire. The ultimate return of 56 percent (112 out of 200) was achieved. The questionnaire was anonymous.

### Data Analysis

Descriptive analysis was applied to analyse the perceptions on mentoring during teaching practice. Six categories about the perceptions of pre-service teachers were created for analysis.

The categories strongly agreed to agreed, and strongly disagreed to disagree were collapsed in the discussion in places for ease of interpretation

## FINDINGS AND DISCUSSION

The responses were organised into six categories: support with lesson preparation, being coached, reflections on teaching experience, mentor feedback, coursework, views on the subject Mathematics.

Based on the data in Table 1, the majority of the respondents (67.3%) were agreeable that their mentors helped them to plan for the lessons they were asked to teach. Furthermore, 57.4% confirmed that the mentor helped them to write the learning outcomes for the lessons taught. A significant proportion of the respondents (38.5%), were neutral to the statement "my mentor helped me to decide on the media to develop concepts in the lessons that I taught". Only 34.6% were of the opinion that their mentors helped them to decide on the media they could use to develop concepts. Furthermore, 60% agreed that the mentor identified some teaching skills for them to implement before and during the planning stage of the lesson. Moreover, 69.2% of the respondents agreed that their mentors helped them to identify some teaching materials.

In summary, regarding support with lesson preparation, the majority of the student teachers indicated that the mentors helped them to plan lessons, write specific lesson outcomes, decide on the type of media used and supported them in identifying some teaching skills and specific applicable teaching material.

Based on the data in Table 2, it was clear that the majority of respondents (78%) supported the view that the mentors let them sit in on les-

**Table 1: Views about support with lesson preparation**

Questions	SA	A	N	D	SD
2. My mentor helped me to plan for the lessons I was asked to teach.	26.9	40.4	9.6	9.6	13.5
3. My mentor helped me to write the learning outcomes for the lessons I taught.	15.9	41.5	18.9	9.4	15.1
4. My mentor helped me to decide on the media that I could use to develop concepts in lessons that I taught.	7.7	26.9	38.5	13.5	13.5
5. The mentor identified some teaching skills for me to implement in a lesson before/during planning.	24.5	35.8	17	17	5.7
17. The mentor teacher helped to identify some teaching materials.	28.8	40.4	19.2	7.7	3.8

**Table 2: Views on being coached**

Questions	SA	A	N	D	SD
1. The mentor teacher let me sit in on lessons he/she was teaching during the early days of teaching practice to enable me get used to the class.	44.2	34.6		9.6	9.6
9. The mentor teacher demonstrated some teaching skills before asking me to teach a lesson.	19.6	39.2	23.5	9.8	7.8
13. The mentor teacher coached me how to teach.	17.0	34.0	22.6	18.9	7.5
14. My mentor teacher regularly sat in on lessons that I taught.	28	40	24	8	0
6. My mentor encouraged me to use group work during the lessons that I taught.	15.4	38.5	21.2	11.5	13.5
10. My mentor teacher discouraged me from using group work in lessons that I taught.	7.7	1.9	11.5	26.9	51.9
12. My mentor teacher allowed me to use any teaching method that I thought was useful to develop concepts in lessons I taught.	35.8	41.5	9.43	11.3	1.9

sons they taught during the initial days of teaching practice to enable them to get used to the class. Furthermore, 58% agreed that the mentors demonstrated some teaching skills before asking them to teach a lesson. About half (51%) of the respondents agreed that the mentors coached them how to teach. A significant proportion of ODL student teachers (68%) consented that their mentors regularly sat in on lessons that they taught. Some (53%) agreed that the mentors encouraged them to use group work during the lessons that they taught. On top of that, 78.9% disagreed that the mentors discouraged them from using group work in lessons that they taught. A substantial percentage, 77.3% agreed that their mentors allowed them to use any teaching method that they thought useful to develop concepts in the lessons they taught.

Based on the data in Table 3, it was clear that the majority of the respondents (92%) agreed that teaching practice gave them opportunities

to experiment with teaching approaches covered theoretically. A further 92.3% of ODL student teachers confirmed that they gained a lot of knowledge on how to teach during teaching practice. According to 92.5% of the respondents, they gained many insights on how learners learn mathematics during teaching practice. Moreover, 73% assented that all their practice teaching lessons in mathematics were enjoyable.

Based on the data in Table 4, it seemed that the majority of respondents (81.1%) were of the opinion that the mentors provided them with useful feedback that helped them to develop as effective teachers after sitting in on lessons that they had taught. Furthermore, 69.8% agreed that their mentors gave them useful feedback on their questioning techniques.

Based on the data in Table 5, it is evident that the majority of the respondents (79.2%) agreed that the mathematics teaching method covered in the course prepared them well to teach

**Table 3: Reflections on the teaching experience**

Questions	SA	A	N	D	SD
8. Teaching practice gave me opportunities to experiment with teaching approaches covered theoretically.	67.9	24.5	5.7	-	1.9
11. I gained a lot of knowledge on how to teach during teaching practice.	55.8	36.5	1.9	3.8	1.9
16. I got a lot of insights on how students learn mathematics during teaching practice.	45.3	47.2	5.7	1.9	0
18. All my practice teaching lessons in mathematics are enjoyable.	36.5	36.5	15.4	5.8	5.8

**Table 4: Views on mentor feedback**

Questions	SA	A	N	D	SD
7. My mentor teacher provided me with useful feedback that helped me to develop as an effective teacher after sitting in on lessons that I taught.	35.8	45.3	11.3	1.9	5.7
15. My mentor teacher gave me useful feedback on my questioning techniques.	32.1	37.7	18.9	7.5	3.8

the subject during teaching practice, and 79.3% of the student teachers confirmed that the course-work material covered enough content to help them to teach well during teaching practice.

Table 6 presents the responses of the student teachers about the subject mathematics. Even though 20% opted not to take a side, more than 68% strongly disagreed and a further (26%) disagreed that mathematics is the most difficult subject to teach. On top of that, 57.7% were of the opinion that the mathematics content in the classes that they taught was difficult. However, 80.8% agreed that mathematics involved a lot of preparation for teaching. All respondents thought that it was essential that mathematics be taught well in the foundation, intermediate and senior phase. In fact, 81.1% of the student teachers admitted that, after qualifying as teachers, they would prefer to teach mathematics to other subjects. An equal number of those who strongly agreed (43.4%) and those who agreed (43.4%) declared that they found mathematics understandable during their school years.

The assumption made at the onset of the study was that mentoring by host teachers in distance teacher education might not be working for student teachers since the mode of training is mainly by electronic and printed material. There is no modelling or enacting of ideal pedagogies by distance education university staff. During teaching practice, mentors in host schools model teaching for student teachers. The results of pre-service teachers' perceptions

of the mentoring they received during teaching practice were generally positive. Similar results were found in (Smith and Lev-Ari's 2005; Sedibe 2013), study but this was not in an ODL context. This observation was also made with regard to the multiple roles of the mentor, which broadly covers 3 areas: providing personal support, inducting the beginner teachers into a new context, and guiding professional growth (Harrison et al. 2006).

In essence, the finding of (Brooks and Sikes 1997; Maphalala 2013) shows that mentors are generally effective teachers who model effective teaching skills, curriculum planning, classroom management, demonstration of good interpersonal and pedagogic skills. These results resonate with key qualities of good mentors that are highlighted in the study of Rowley (1999) for example, who identified six essential qualities of a good mentor:

- ♦ commitment to the role of mentoring;
- ♦ accepting beginner teachers;
- ♦ skilled at providing instructional support;
- ♦ effective in different interpersonal contexts;
- ♦ a model of a lifelong learner; and
- ♦ communicating hope and optimism to the student teacher.

Hudson et al. (2005), in their study of mentoring effective primary science teaching, support these findings when they emphasise that providing feedback allows pre-service teachers to reflect and improve teaching practices and this is applicable to mathematics as well. Hudson (2007) alluded to six attributes and practices

**Table 5: Views on the course**

Questions	SA	A	N	D	SD
22. The mathematics teaching method covered in the course prepared me well to teach the subject during teaching practice.	37.7	41.5	20.8	0	0
27. The course work material covered enough content that helped me to teach well during teaching practice.	20.8	58.5	17	3.8	0

**Table 6: Views on the subject Mathematics**

Questions	SA	A	N	D	SD
19. Mathematics is a most difficult subject to teach.	4	8	20	26	42
20. Mathematics involves a lot of preparation for teaching.	30.8	50	13.5	3.8	1.9
21. The mathematics content in the classes that I taught was difficult.	5.8	11.5	25	36.5	21.2
23. It is essential that mathematics be taught well in the foundation, intermediate and senior phase.	86.5	13.5	0	0	0
25. After qualifying as a teacher, I will prefer to teach mathematics to other subjects.	54.7	26.4	15.1	0	3.8
26. I found mathematics understandable during my school years.	43.4	43.4	11.3	1.9	0

that may be associated with providing good feedback for developing student teachers' primary mathematics teaching. He alleges that a mentor should be able to articulate expectations, review lesson plans, observe practices, provide oral feedback, provide written feedback and assist the mentee to reflect on teaching practices.

On the contrary, a study by Tok and Yilmaz (2011) found that student teachers were not pleased with mentors' guidance activities. They disclosed that they wanted to be treated as colleagues, that the mentors should share their experiences and that they should be understanding and tolerant. However, for one item in this research – help given by mentors about decisions on the media to use to develop concepts in lessons – the results were negative. Mentors taking part in the study did not help student teachers to decide on the media. An assumption might be that the mentors wanted to give the student teachers freedom of choice. Another possibility could be that the school might not have had the appropriate media, or that the mentor was older than the students who are known to be more advanced technologically.

A follow-up with interviews might reveal further insight into reasons for the negative perception. Even though the student teachers learned theories about teaching from study material and were modelled teaching by university staff through the study guides, the present mentoring system was perceived as useful by pre-service teachers. The mentor teachers provided help with lesson preparation, coaching, facilitated teaching experience, and also provided constructive feedback. The coursework material prepared the students well to teach in schools and it covered enough content to help them to teach the content of mathematics. Even though mathematics requires more preparation than other subjects, the participating student teachers said they would still opt to teach it. They were not of the opinion that mathematics was a difficult subject to teach.

### CONCLUSION

The aim of the study on which this paper is based, was to examine the perceptions of mathematics student teachers at an open distance learning institution on the mentoring they received during teaching practice in South Africa. In general, the results of pre-service teachers'

perceptions of the mentoring they received during teaching practice in the six categories, namely support with lesson preparation, views on being coached, reflections on the teaching experience, views on mentor feedback, views on the course, and views on mathematics were generally positive. It can be concluded that these aspects were key for the student teachers' planning and strategising for maximal utilisation of mentors in placement schools. The literature review showed the importance of mentoring for professional development. Based on these results, the mentoring system is perceived as useful for pre-service teachers and it is clear that it should be continued. Interpersonal interaction is a key quality valued by student teachers, and this is lacking in ODL context tuition.

### RECOMMENDATIONS

Lecturing staff are advised to plan and strategise for maximal utilisation of mentors in placement schools to provide opportunities that reinforce the key aspects that beginning teachers perceive as valuable for their development as effective mathematics teachers in the ODL context. These aspects could include training mentors to model constructivist approaches, lesson planning, choices of teaching material, demonstrations of how to teach that could also include videotaped lessons. To enhance the quality of mentoring there should be increased face to face discussion, use of ODL teaching strategies such as video conferencing, partnership with other internal and external departments that teach mathematics content to ensure that teachers are well grounded and competent enough in the content knowledge. This calls for a review of curriculum in the training of mathematics teachers in a way that would ensure that they gain deep knowledge of the subject to develop depth in content knowledge and pedagogical content knowledge. Other strategies that could be used to enrich teacher knowledge would be peer coaching and networking with other mathematics education practitioners in associations such as Association for Mathematics Education in South Africa (AMESA).

### LIMITATIONS

The limitation of the pilot study was low response rate. The use of only closed questions

using a Likert-type scale questionnaire to obtain data to examine the perceptions of student teachers was limiting.

Further research could also include interviews, observations and mentors' views of how they perceived their own mentoring to ODL students to shed more insight into mentoring during teaching practice in open distance learning.

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