

School-based Curriculum Development: Experiences from the North-West schools

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ABSTRACT This study explores the impact of School-Based Curriculum Development (SBCD) through the Post Graduate Certificate in Education (PGCE) in selected secondary schools of the North West province of South Africa. The research was based on a survey design, because the objective was to collect information on recipients' opinions and attitudes towards SBCD. All 70 students who completed the programme also completed the questionnaire. Seven of them were randomly selected for a semi-structured interview, the results of which were used to triangulate the responses from the questionnaire. Findings revealed that 75% of the respondents did not use any teaching media in their teaching. Eighty-one per cent made the point that their mentors were supportive. It was recommended that teachers' training institutions should fully appreciate the needs for training of teachers and be cognizant with the various challenges encountered.

INTRODUCTION

In 2007, South Africa's Education, Training and Development Sector (SAETDS) entered into an agreement with higher education institutions to provide PGCE to graduates in identified priority subjects such as science, mathematics, technology, economic management and computer studies. The aim of this training was to provide graduates with alternative certification and to "fast track" the training of teachers for these priority subjects. The training consisted of 30% contact time and 70% experiential training on the job. Contact sessions were made up of content, methodology, teaching and learning theories, teaching skills, classroom management, and assessment and computer studies. Students were given on-site support by resident teachers and were visited by university lecturers. This course was a one-year Postgraduate Certificate of Education (PGCE) course, where students have constant contact sessions and that includes a teaching practice period of twelve weeks per year. The intention of this study was therefore to assess the success or otherwise of the school-based programme and to find out if it produced the type of teacher envisaged. The main finding from the study was the opportunity created by the project to bring higher education institutions closer to schools as a practical way to improve teaching and learning.

The study aimed at establishing the effectiveness of the one-year PGCE programme in 2007 to provide an alternative approach to teacher training, especially for mathematics, the sciences, technology and commerce-related subjects. The intention of the programme was to offer the PGCE programme to graduate teachers who did not have professional training. In terms of the project agreement, the higher education provider would be the training provider in the delivery of a level 6 PGCE. The institution had a part-time postgraduate teacher training programme over two years. In this particular case, the training was modified in terms of the agreement to be done in one year, yet all the requirements for the full-time one year programme were fulfilled. The North West province had a shortage of maths, science and technology teachers and it was agreed that, instead of placing the students at the institution for full-time study (which meant that their classrooms had no teachers), the teacher education training should be organised on a learnership basis. This meant that these teacher trainees would be able to attend to learners daily whilst undergoing their own pedagogical training on a block teaching basis (during holidays and weekends). Sixty bachelor degree graduates were recruited and placed at schools where they were provided with mentors. They received educational courses on a four day block teaching three times per

year. There were no formal examinations; instead, students were assessed on the basis of their portfolios. This report is based on the findings of the survey taken after respondents had completed their training; the report focuses on how respondents perceived the course in terms of their professional development.

Literature Review

A body of literature emerged towards the end of the 1980s which put forward the notion that learning was a *social act*, an act that occurred in a social context (Brown et al. 1989; Brown and Duguid 1996; Lave 1988; Schoenfeld 1989). This school of thought referred to learning as participating in communities of authentic practice, and learning as "...an aspect of participation in socially situated practices" (Lave 1996: 150). Schoenfeld (1991) emphasised the creation of a "community of practices" in which learners developed identities as active learners with responsibilities for what they learned. According to Lave and Wenger (1991), in the process of legitimate peripheral participation, when the novice moves from the periphery of the community of practice to its centre, he or she becomes more active and engaged in the culture and thus assumes the role of expert. Newcomers "steal" the knowledge that they need by legitimately and peripherally participating in authentic social practice (Brown and Duguid 1996). According to this viewpoint, learning is belonging to and participating in that which embodies certain beliefs and practices. "A person's intentions to learn are engaged and the learning is configured through the process of becoming a full participant in a socio-cultural practice" (Lave and Wenger 1991: 83).

The social learning perspective advocates learning in terms of interactions with the world, and claims that knowledge is socially negotiated and embedded in a particular context, in the sense that knowledge cannot be separated from the practices and occasions of which it is the outcome. Advocates of situated cognition support the metaphor of learning as participation, which posits that learning is an aspect of participation in communities of authentic practice. This involves changing the learner's participation in the community of practice. Learning is thought of as identity-shaping, in which

"people achieve their identity in each community through their personal trajectories of participation" (Pang and Marton 2003: 38). Learning therefore provides the theoretical grounding for the instructional design of the PGCE, because it is in accordance with the fundamental objective on which the agreement between the two parties was based.

Siribanpitak and Pornsima (2003) argue on School Based Teacher Training as follows;

- ❖ The training is in fact a development process based on the real situations and actual needs of both the schools and the teacher trainees, with the ultimate aims of enhancing the trainees' capacities in organizing the learning process and the students' capacities
- ❖ The training takes place at school (School-based) or sometimes in the community (Community-based) with the school being responsible for the training project.
- ❖ The trainees' capacities are enhanced by the teachers or groups of teachers. They have expertise and experience in School-based Teacher development. The essential requisites are faith and genuine recognition on the part of the students' teachers.
- ❖ The training of students' teachers should be intensive.
- ❖ Both trainers (North West University) and students' teachers join efforts in conceptualization, planning and carrying out line training.
- ❖ The training involves actual practice, availing of different teaching and learning methodology, training materials, media and activities, which will be applied to real classroom situation.
- ❖ The training is repeated on a continuous basis and avails of a variety of methods, involving regular group meetings and individual consultations with the view to collectively finding solutions to problems and enhancing the students' learning.
- ❖ For the training, of students' teachers the PDCA process is availed of, that is, Planning, Doing Checking and Action. PDCA is in fact an on-going process, benefiting from the evaluation outcomes which are used for improvement in the planning (Siribanpitak and Pornsima 2003; Siribanpitak 2004).

Conceptual Framework

According to Otuya (1992), alternative certification programmes are context-specific experiments designed to meet policy goals, such as attracting talented career changers of filling teacher shortages, but are not necessarily substitutes or competitors for traditional preparation. Alternative certification programmes fall within the social learning theory

In this context, the PGCE programme may be classified as an alternative certification programme because it differs from the PGCE programme provided by the university. Its purpose was to fill teacher shortages in science, mathematics and economic management sciences in schools. The objective was for the faculty to develop a programme that would give student teachers sufficient “subject matter knowledge, pedagogical content knowledge and curriculum knowledge” (Shulman 1986). In other words, sufficient knowledge to make these people qualified to teach in schools. Shulman (1986) continues to say that subject matter knowledge is the organisation of knowledge in the mind of the teacher. Pedagogical content knowledge includes the most useful representation of content ideas, and the most powerful analogies, illustrations, examples, explanations and demonstrations. It also includes a curricular knowledge of the instructional materials available for teaching various topics and the criteria to be used in deciding whether or not to use a curriculum or programme in specific circumstances. All types of teachers, whether school-based or otherwise, need practical experience to be effective in their teaching. Students enrolled on the PGCE programme were exposed to school conditions longer than their campus-based counterparts.

In answer to the question: “How do teachers learn from practice?” Flick and Lederman (2001) make the point that the implications of this question go to the heart of current efforts to implement acceptable academic standards in science and mathematics education. These standards, they contend, are not only concerned with what one teaches, but also with how one teaches. They continue that developing expertise in the form of complex instruction requires a view of teaching practice as a discipline. Flick and Lederman (2001) cite Shulman (1986), who

refers to two kinds of practical knowledge. Shuman identified propositional knowledge as the way in which teachers accumulate knowledge from practice in the form of maxims or practical roles. One such instructional maxim growing out of concentrated work in teaching inquiry is “inquiry means getting kids to ask questions”. Schulman’s second form of knowledge derived from practice was case knowledge. In this he says that theoretical principles and maxims are communicated by specially selected cases.

In South Africa, professional teachers’ qualifications are guided by the Norms and Standards for Educators (DoE 2000). According to the DoE (2000), these norms and standards provide a basis for providers to develop programmes and qualifications that will be recognised by the Department of Education. This is implemented within a National Qualifications Framework (NQF), which ensures that programmes are within an overall regulatory framework that promotes national standards. The PGCE programme was placed at NQF Level 6 with a total credit rating of 120 (DoE 2000).

In adopting a school-based PGCE programme, and in line with the agreement with ETDP-SETA, it has to be noted that the nature of learning outcomes suggests the type of activity that would be most helpful to student teachers in achieving any set outcome. The programme aimed to achieve a ratio of 70% work-based practical learning to 30% lecture-based academic activity. As a work-based activity, the competency skills focused on included managing questioning, feedback, use of instructional support materials, time management and classroom control. Boosted by outcome-based assessment principles, as well as the professional culture of the course, competency-based assessment principles formed the basis of the work-based course (Ellington 1997). The portfolio assessment system became the main working tool for the programme and guidelines were provided for student teachers; mentors and supervisors assessed the student teachers and kept records and provided on-site support. During contact sessions, students were given the opportunity to interact with the theoretical underpinnings of the professional culture, teaching and learning methods, learning theories, classroom management, subject methodologies, assessments

techniques and computer skills covered in the programme (North West University 2007). These were all based on OBE principles, the educational medium adopted for making knowledge available to learners. Aspects of the course included the introduction to critical as well as learning area outcomes, assessment standards, learner-centred (as opposed to teacher-centred) education and/or learner activities in the classroom; the assessment method used was portfolio assessment and continuous assessment.

To support this form of practice, the programme relied on the literature as far as the work-based course and its assessment principles were concerned. The principles of National Curriculum Statement (NCS), norms and standards for educators, the National Qualification Framework, the North West University Calendar on PGCE programme, as well as other policies on education, were all consulted. Phurutse's (2005) report on factors influencing teaching and learning in South African public schools also became a starting point for the planning and implementation of this programme.

Research Method

The objective of this study was to determine the impact of this training on schools in the North West province of South Africa. The research was based on a survey design, because the objective was to collect information on recipients' opinions of, and attitudes towards, the PGCE programme. All students who completed the programme (70) completed the questionnaire. Seven participants were randomly selected for interviews, the results of which were used to triangulate the responses from the questionnaire. The validity and reliability of the instruments were pre-administered and redesigned before the final instruments were administered. The principal issues of the study were based on the following questions and the items were designed to address the following three research questions:

- Did the PGCE Learnership programme produce trained teachers as was envisaged?
- What problems were encountered in training these teachers?
- What suggestions could be made in order to improve this type of teacher training and education?

RESULTS AND DISCUSSION

Data collected from responses to these questions were quantitatively analysed by using simple frequencies and percentages. Table 1 provides details of the research results.

Table 1: Analysis of students' teachers responses on the PGCE programme

	<i>Item</i>	<i>Yes</i>	<i>No</i>
1	Learners teaching experience before the learnership	48	56
2	Teaching experience relating to school	60	40
3	Desire to become a teacher	68	32
4	Joined because no other work available	30	70
5	What OBE stands for	95	5
6	Understanding of learning outcomes	75	25
7	Understanding of critical outcomes	46	54
8	Understanding of classroom management	86	14
9	Understanding of teaching methods	68	32
10	Understanding of teaching support	60	40
11	Understanding of portfolio as assessment instrument	62	38
12	Mentor support roles	81	19
13	Teaching and learning issues	54	46
14	Learner response	79	21
15	Learner participation	76	24
16	Feedback	71	29
17	Questioning skills	83	17
18	Lesson planning and classroom dynamics	13	87
19	Practical lessons	40	60
20	Teaching aids/media	25	75
21	Adequacy of contact sessions	70	30

1. Teaching Experience

In answer to the question as to which of them had any teaching experience before joining the programme, 48% said they had, while 56% had no experience. Sixty-eight of the respondents wanted to become teachers, while 38% joined the programme as a last resort because they could find no other form of employment. Ninety-five per cent knew what OBE stands for and 75% of them also said they understood learning outcomes; 54%, however, knew nothing about critical outcomes. Experienced teachers give students a sense not only of who they are, but more important, of who they might become. They unlock student energies, their imaginations, and their minds. Effective teachers pose compelling questions, explain options, teach them to reason, suggest possible directions, and urge them on. The best teachers, like the best leaders, have an uncanny ability to step outside themselves and become liberating forces in stu-

dents' lives. Experienced teachers know that students do not learn in the same way. In addition, it is common for a class of students to be at a variety of levels in any particular subject. Students' teachers used different teaching methods in order to reach all students effectively. A variety of teaching strategies, knowledge of student levels, and the implementation of the best strategies for particular students can help teachers to know which teaching methods will be most effective for their class (Searle 1972).

2. OBE Assessment

Sixty-two per cent of respondents indicated that they knew about the use of portfolios for teaching and learning purposes. The portfolio offers students a way to organise the work from all parts of their school life, as well as important experiences outside of school. It allows them to connect both the pieces of work and experiences into the larger context of their learning, and to see how each piece and experience impacts the others. Creating the portfolio and preparing for the conference asks students to re-examine past work and to think about the strengths and the challenges of that work. Assessment practices must create opportunities for students' teachers to connect and make sense of the pieces of their learning as well. These students must have opportunities to use their skills and knowledge to demonstrate their understanding of issues and ideas. Multiple assessment strategies are needed to validate the multiple ways students make sense of their learning. Students need time to reflect on the work they do and to make the connections between and among tasks. This personal understanding, this personal integration of knowledge, is at the heart of the best assessment practices. Portfolio assessment is important because it measures the progress of a student and examines the instructional process, not just the final product. Authentic educational assessments, such as portfolios, provide multiple levels of learning evidence and demonstrate what a student knows and how he or she uses this knowledge. Traditional assessments, such as tests, demonstrate how knowledge can be memorized and regurgitated, but portfolio assessments measure conceptual development over a period of time (Van der Horst and McDonald, 2005).

3. Introduction to Teaching

The introduction of Curriculum 2005 (DoE 1997) and the National Curriculum Statement (DoE 2003) meant a change in the curriculum, in teaching and learning methods and approaches, in assessment, and in teacher and learner roles in the classroom. The curriculum had introduced terms such as "learning areas", "critical and developmental outcomes", "assessment criteria", and "range statements" (DoE 2002). Given all these changes, teachers had to be educated on all the issues involved in outcomes-based education. Methodologies and assessment practices were to be OBE orientated, and teacher and learner roles in the classroom had to be changed to be in line with the principles of OBE. This meant that teacher education programmes had to reflect the changes introduced at school level. It was unsurprising, therefore, that the student teachers (95%) enrolled on the PGCE programme knew about OBE. But this knowledge was limited to a general knowledge and understanding, which had to be corrected and reinforced. The 54% of respondents who did not know what critical outcomes were are a proof of the need for this and a justification for the inclusion of the theoretical basis of OBE in the PGCE programme.

4. Aspects of the Lesson

Eighty-seven per cent of respondents said that they had no idea what lesson planning involved, and 13% said that they did. In the same vein, 46% admitted that they had no understanding of teaching and learning, while 56% said they did. As far as questioning skills were concerned, 83% said they had some idea what these skills entailed, while 17% said they did not. Eighty-six per cent were also knowledgeable about classroom management. OBE in the classroom meant following the principles of OBE to include a move from teacher to learner-centred instruction and a change in teacher and learner roles. Aspects of an OBE lesson includes a clear definition of what is to be learned, the availability of multiple instructional and assessment strategies to meet the needs of each learner, and the provision of enough time and assistance to enable each learner to reach his or her full potential (Killen 2000; Van der Horst and McDonald 2005).

Student's teachers complained about lack of students' participation during class discussions because they are afraid that their ideas will not be respected. Sometimes students felt that they did not fully understand the course material; therefore, they were afraid of saying the wrong thing during the discussion. Student teachers were to be taught the principles of OBE which are: clarity of focus, designing back, high expectations and expanded opportunities in planning and teaching lessons (Spady 1998). Lectures for the PGCE programme also included teaching learners how to develop and use teaching skills. The response that 87% of learners did not know about lesson plans was justification enough for the inclusion of aspects of an OBE lesson to be included in the PGCE programme.

5. Classroom Support

Classroom support is an important tool to quality teaching and learner understanding. This involves the support student teachers obtained from their mentors in terms of how they taught and developed as teachers, and as to whether they applied their knowledge appropriately and improved in their practice. It also involved the availability of textbooks, libraries, laboratories, chemicals and other teaching and learning support materials. It was therefore necessary to find out if such factors played any real role in the training of the student teachers. It is significant that 81% said their mentors were supportive and that they (83%) received feedback from their mentors. Students' teachers, too, like to know how they are doing and what mentors thought of their performance in class. Instead of only giving them results at the end of the year, giving each student frequent written and verbal feedback encourages effort and positive habits. According to the Ohio State University (n.d.), feedback is an effective element in the process of teacher development because "getting information on one's actions is essential to continuing improvement". Feedback comes in different forms (for example, written evaluation from students, student evaluation of instruction, mentor evaluation, comments and discussions) (Ohio State University, n.d.). Feedback was therefore necessary in the learners' training.

Although there is evidence that a great deal of informal assistance to student teachers from

veteran teachers occurs, a formal mentoring relationship requires considerably more commitment and effort from the mentor teacher. Even more importantly, mentor teachers need specific skills in how to help novice teachers move out of the first-year survival and socialization mode and begin to grapple with deeper-level learnings of subject matter and instructional problem solving (Sieborger 1998).

The extent to which respondents used teaching and learning support materials was not satisfactory: 75% of respondents did not use any teaching aids or media and 60% did not have the advantage of using practicals to support their teaching. On the other hand, it is significant to note that the student teachers knew about the use of portfolios for teaching and learning purposes and were familiar with the portfolio as an alternative form of assessment. The introduction of the NCS implied the use and practice of alternative forms of assessment; it was therefore necessary that those student teachers were taught this as part of the PGCE programme. The connection between teacher support and teacher evaluation is a controversial one. Most researchers believe the two processes must be separate and different because they are concerned about protecting the formative nature of performance assessment as a critical component of successful new teacher development. Sieborger (1998) voices a different concern and asserts that established state and district teacher summative evaluation instruments are inappropriate for novice teachers. Instead, she argues for a differentiated evaluation process for beginning teachers that recognises their status as novices working towards proficiency. Sixty per cent of respondents said they received classroom support, but 75% did not use any teaching aids or media in their teaching. Eighty-one per cent said that their mentors/supervisors were supportive and 83% said they, also received feedback from their mentors. Sixty per cent of the science student teachers said that they did not use practical work in their teaching. It seems inevitable that demonstrated achievement of standards by teachers and student teachers was likely to be the benchmark by which mentoring would be measured in this new wave, if only in efforts to mute the deafening shouts of politicians about accountability in education spending. As teaching itself has become extremely complex, and external standards and demands have increased, the

work of mentoring newcomers in their on-the-job learning must now be seen as equally demanding and complex, and additionally must be seen to be economically prudent investment of public money (Hitendra 2000).

The overall impression of the course shows that learners were satisfied that the programme provided them with the necessary training for their teaching. One wonders, however, if the contact sessions provided were sufficient for their training.

CONCLUSION

From the discussions, it is evident that the PGCE programme provided the learners with the requisite knowledge content base, pedagogical knowledge and curriculum knowledge base to enable them to teach effectively. It was also evident that the teachers needed continuous education in Outcomes-Based Education strategies, and that schools should endeavour to provide teaching and learning support materials to facilitate teaching. Teachers' further education or in-service training should also be targeted at content and assessment knowledge. The teachers who took part in this programme also needed continuous support from both their mentors and their lecturers. It would be beneficial to inform respondents of the findings of this study – in fact, this would give students the feedback needed to support their growth as professional teachers. The absence of laboratories, chemicals and appropriate apparatus in the schools these teachers were placed obviously hindered the learners' understanding of relevant concepts, and it goes without saying that the provision of such services must be improved in South Africa's schools. It is also necessary to improve teachers' knowledge about the use of the laboratory for teaching purposes. Even though the PGCE programme was the first of its kind in the Mafikeng Campus of the North West University, it was interesting and challenging. Lessons have certainly been learned and remarkable progress has been made towards the improvement and expansion of skills development in the teaching profession, especially in critical subject areas. Another important aspect of the programme was that it gave the university the opportunity to engage with schools directly in the training and development of human resources in education. This experience should

also help to fast track community service delivery.

RECOMMENDATIONS

It is incumbent upon principals to provide the necessary support and encouragement as well as facilitate the training to achieve the desired goals. It is imperative for them to make sure that the teacher development plan forms part of the annual school work plan. They must also assist in obtaining additional resources required for the whole school reform. Teachers' training institutions should fully appreciate the needs for training of teachers and be cognizant with the various problems encountered. They must collectively conceptualize the training through identifying the goals and objectives bearing in mind the actual situations and the needs of the teachers as well as the schools. Student teachers should be endowed with knowledge and outstanding capability of applying the learner-centered approach required for the education reform. Being knowledgeable and creative and with expertise in teacher development, they are accepted and win the respect of their peers.

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