Improving the quality of teaching

Making a difference in public schooling

16th April 2008

IMPROVING PUBLIC SCHOOLING SEMINARS

A joint Umalusi
and Centre for Education Policy and
Development Series

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ISBN 978-0-9814176-1-5

Layout & Design
CJ Graphics

Introduction

There seems to be considerable agreement that, regardless of the other improvements one may make to an educational system, the quality of what happens in that 'black box' called the classroom is critical to the success of the system as a whole. While efforts are being made to draw a strong calibre of teacher into the profession, what can be done—and is being done—to improve the quality of current teaching? This seminar, the fifth of six public lecture- and discussion sessions on making a difference in public schooling, addresses what can be done to improve teaching.

The invited speakers—Ms Tessa Welch, Dr Kakoma Luneta and Professor Michael Samuel—believe that the need to develop better teachers before they enter the system as well as once they are at the chalk-face, is one of the major efforts required to strengthen the quality of South African schooling for all learners. Read about the suggestions for enhancing the quality of teaching made by each of the presenters, in this booklet.

Welcome and introduction of the first speaker

The audience was welcomed to the seminar by Dr Heidi Bolton of Umalusi's Research and Development unit. It was explained that the seminar is one of a series jointly facilitated by the Centre for Education Policy Development (CEPD) and Umalusi (Council for Quality Assurance in or General and Further Education), on how to improve the public schooling system.

Dr Bolton introduced the first speaker Ms Tessa Welch, senior teacher development specialist at the South African Institute for Distance Education (SAIDE) for over a decade. Ms Welch was formerly a teacher educator at the Soweto College and at what was previously known as the Johannesburg College of Education. Before this she was a high school English teacher. Her particular areas of interest are now focussed on teacher education policy; standards setting; materials development and evaluation; programme development and evaluation; and more recently, HIV and AIDS in teacher education. Ms Welch's focus in this particular

seminar is on access to quality teacher education, and the importance of designing teacher-education to meet the needs of mainstream schools rather than those of the privileged few.

Access to quality teacher-education

Ms Tessa Welch, South African Institute for Distance Education (SAIDE)

Ms Welch explained that she would tackle the topic of improving the quality of teaching from the point of view of teacher education and how this tertiary-level education potentially impacts on the quality of education in schools. She introduced a summarized version of her argument, pointing out how it had developed in relation to recent calls to re-open colleges of education. In her view, the question *'how can the quality of teacher education be improved?'* has to be accompanied by the question *'how can access to teaching and learning be increased'?'* In other words, considerations of quality and access are not alternative ideas to be addressed separately, but complementary considerations. These ideas must be considered together if the education needs of the country are to be met. Ms Welch feels that in the debate about the re-opening of the teacher colleges of education, those in favour of the idea seem to have access uppermost in their minds. Those against prioritize the issue of quality. Welch argued that access is an integral part of quality and quality teaching is only quality teaching if it meets the needs of the types of people and contexts for which it is intended. She added that it is relatively easy to improve the quality of teaching for the privileged few, and that quality improvement is needed for the mainstream.

Ms Welch explained that her argument was also informed by the recent report by the Ministerial Committee entitled *Schools that Work* (Christie et al, 2007). One of the major emerging comments from this report is that the schooling system is not currently directed towards the needs of mainstream schools. Welch quoted the report:

> "Mainstream schools are black schools in relatively poor socio-economic circumstances…. It is these schools, not privileged schools 'on the edge' that are 'the normal schools' for most South African learners. It is mainstream schools whose potential must be developed if South

> Africa is to meet its goals of equity and quality for all, achieve its human resource development targets, build the next generation of citizens, and do justice to its young people"
>
> Christie et al, 2007: 123

Ms Welch's contention is that current teacher education is not organized to meet the needs of the mainstream—it is very similar to the situation in schooling. She went on to say that quality is both fitness *of* purpose, and fitness *for* purpose—the purpose in this case being meeting the educational needs of mainstream schools as well as those of the privileged few. In this presentation she attempts to tackle elements of the teacher education system, and make suggestions about what could be done to solve inherent problems.

Ms Welch noted that the National Policy Framework for Teacher Education and Development (NPFTED), (Department of Education, 2007), states that there are two subsystems in teacher education, namely, Initial Professional Education of Teachers (IPET) and Continuing Professional Teacher Development (CPTD). Welch contends that teacher upgrading is generally understood to be a temporary challenge, the inheritance of an *apartheid* past with which to be dealt in a few years and with targeted interventions. She referred to the generally known fact that teachers have until 2013 to become qualified, and noted that Mr Duncan Hindle, current Director General of Education, has also recently stated in a newspaper report that after this date there will be no reason for schools to employ unqualified or under-qualified teachers. Ms Welch asserted that she does not agree with him on this issue. She then relayed a particular story about an actual person to support her argument and illustrate the failure of the teacher education system to meet the needs of this person, who represents the mainstream. A brief outline of this example follows (names have been changed to protect the identity of those mentioned).

Sylvia Lebelo is based in the Buyani School that offers tuition to 300 Foundation Phase learners in the informal settlement of Finetown at Grasmere, south of Johannesburg. This school was started as a community school with four teachers in 1991, and registered as an independent school with the Gauteng Department of Education in 1995. It is supported by a

Trust which assists it through fundraising, and also with development and strategic planning. By 2004 there were ten teachers at Buyani school as well as two administration and three support staff— Sylvia is one of the support staff.

Ms Welch explained that Sylvia had been a pupil at Buyani, together with another woman Maggie Kakora, when the school first started. She obtained a Senior Certificate in 1999 with the following subjects: Biology, Maths, Science and Geography, as well as English and Afrikaans. She enrolled for Engineering at the then Johannesburg Technical College but after a couple of trimesters, had to leave because she ran out of money. She and Maggie had come to work at Buyani's Afternoon Learning Centre when it opened. Later she and Maggie were identified as young women with considerable education potential. Sylvia was informally trained to run the resource centre at the school, while Maggie became the co-ordinator of the Family Maths and Science Literacy project (FMSL project). In 2007, Sylvia worked with the Grade R classes that were just beginning. This year she is back in the library, but wants to train as a Foundation Phase teacher.

Ms Welch explained that she had tried to talk through Sylvia's options with her, and ended up feeling depressed about the lack of possibilities. Sylvia cannot enrol for the National Professional Diploma in Education (NPDE) run by the University of South Africa (UNISA), because UNISA has closed and is 'teaching out' this programme to existing students only. She would not in any case have qualified for admission to this NPDE because she is not directly engaged in classroom teaching, and therefore does not meet the entry requirements for the course. Another option would be to enrol for the 480-credit Bachelor of Education (B Ed) degree for Foundation Phase teaching at UNISA, but the fact that eight to 10 years would be required for completion of the degree is too much for Sylvia. To speed up this study period she could apply for a Fundza Lushaka bursary in order to enrol for two years full-time at the University of the Witwatersrand (Wits), and thereafter go back to work while completing the UNISA degree after-hours. However, leaving her children far away for even two years, or relocating, or trying to travel to Johannesburg daily (at a cost

of R30 per day) to study at Wits, are also not possible for her. There are private providers with unaccredited NPDE programmes, and public providers who are not scrupulous about entry requirements for the NPDE. However both of these types of providers are operating outside or nearly outside the system at the moment and Ms Welch feels that she cannot, with integrity, recommend any of them.

Ms Welch concluded that all of the doors to becoming a teacher appear to be closed for Sylvia, and yet the country is desperately in need of more Foundation Phase teachers who can teach in an African language. For Welch, Sylvia's case is an example of situations in which the schooling system could be identifying suitable individuals in paraprofessional occupations which the teacher education system could then develop—and perhaps is already developing—into fully qualified teachers. She posed the question: *'how many more Sylvias are out there waiting to be drawn into the system?'*

Welch explained that she would proceed with her presentation, by looking at each of the current South African teacher education systems and their respective limitations.

The two main avenues available for people wanting to become teachers are the Bachelor of Education (B Ed) degree on one hand, and the Post-graduate Certificate in Education (PGCE) following a basic degree on the other. These qualifications are, in the main, only suitable for those who can afford to enrol at universities full-time. The National Policy Framework for Teacher Education and Development (NPFTED) speaks about five modes of delivery for the B Ed, the first being full-time or part-time contact study. The second comprises part-time study through a combination of contact and distance learning, and includes the option of learnerships. The third constitutes distance learning for mature first-time recruits. The fourth is distance learning together with mentored school-based practice for first-time recruits employed by Provincial Education Departments as student teachers. The fifth comprises distance learning together with mentored school-based practice for serving teachers wishing to upgrade their qualifications or to change their qualifications to enable them to teach to different school phases, learning areas or subjects.

However in reality, it appears as though not all of these modes are found in practice. In research conducted by the CEPD in 2007 (see Centre for Education Policy Development, 2007), data reveals that the general pattern for Initial Professional Education of Teachers (IPET) provision is similar across institutions, and that it integrates teaching practice into a full-time programme of study. Ms Welch indicated that there are exceptions to this pattern, but that it is however the general rule. Only one institution—UNISA—offers a qualification at a distance, and in a more flexible way. She suggested therefore that it is not surprising that provision is not supplying the needs of the country.

The system is now producing about 7000 new entrants to the teaching profession each year, whilst approximately 15000 are needed. With respect to Foundation Phase teachers—recent research conducted by Professor Wally Morrow at the University of KwaZulu-Natal (2007) contains statistics indicating that only about 5.3% of teachers registered for IPET are Foundation Phase African students. This year, full-cost state-funded bursaries linked to service contracts could help to deal with this situation. Entry requirements have also been reduced—to requiring as few as 12 or 18 points on a matriculation certificate—by some institutions. In Ms Welch's opinion, this may however ironically serve to lower the status of teaching rather than to attract more candidates into the profession. She feels that this perception would be an interesting one to research.

Ms Welch suggested that it is more worrying that the B Ed and PGCE qualifications are encountering relatively few new entrants of a particular 'non-mainstream' (privileged) type. Her impression when visiting the various institutions involved in professional teacher education in the country is that most of the energy and most of the status within these institutions however, goes to those lecturers offering non-mainstream degree options. She argued that this is a large amount of energy for relatively few students, from a relatively limited group. For her, teacher education is not only about trying to attract new teachers. According to Ms Welch, if there is going to be an impact on the quality of teaching in schools, attention needs to be focused on the 380 000 teachers *already inside* the system.

Ms Welch then posed the question: *'when does IPET end and teacher*

upgrading begin?' She went on to discuss current SAIDE research designed to support the Department of Education in its development of a plan for the upgrading of teachers. The types of qualification held by currently-serving teachers vary widely. There is, for example, the 'Standard 8 or Standard 10-with-outdated pre-service professional/academic qualification' group, originally the target of the National Professional Diploma in Education (NPDE). However, this is not the only group of teachers. In discussion with provincial departments and institutions it has emerged that there are quite a few people in the 'Standard 10-or-lower, with NGO-qualifications in Adult Basic Education and Training (ABET) or Early Childhood Development (ECD)' group—particularly amongst those working at Grade R level. There are also people in the system with 'academic qualifications and teaching subjects, but no professional qualifications'—particularly amongst those teaching Maths, Science and Technology at secondary school level. Of most concern is the group with 'full academic qualifications, but currently teaching outside of their subject knowledge'. Teachers therefore form a very diverse group in terms of experience and qualifications, and require differing kinds of further development for upgrading of the profession on the whole.

There are considerable challenges for the upgrading project. Ms Welch went on to clarify that the numbers of teachers in each of the previously mentioned categories still needs to be determined, and is currently being researched as part of the Teacher Upgrading Project by the Department of Education. The numbers currently available are approximate both because they are outdated, and because Relative Education Qualification Value (REQV) level is only a very rough guide as to whether or not a teacher is professionally qualified (REQV 13 is a proxy for qualified teacher status). For example, a teacher with a recognized degree and no professional qualification can be at REQV 13, but so can a teacher with a three-year teachers' diploma. However, according to currently available figures, about 10% or 35 000 serving teachers have qualifications below REQV 13. An idea of how low this percentage is in relation to the whole teaching force, can be seen in that it is equivalent to the number of new entrants that were enrolled for teaching courses at higher education institutions (HEIs) in 2007. The fact that all teachers are now required to be upgraded to REQV

14 by the year 2013 as a result of the agreement of the Occupation Specific Dispensation (see Education Labour Relations Council, 2007), compounds the situation. This upgrading will involve approximately 138 000 teachers at REQV 13 level. Further, the numbers of educators teaching subjects for which they are not qualified has not been quantified at all.

Ms Welch then turned to the issue of attempts that have been made to cater for the needs of this sizable group of under-qualified serving teachers. There has been a national effort to deal with some aspects of this large and very diverse group. The National Professional Diploma in Education (NPDE) beginning in 2002 and involving 17 HEIs and a total of 11 299 000 student enrolments in the first cohort (see Centre for Education Policy Development, 2004), is part of this effort (total enrolments including those for 2008 still have to be determined). Ms Welch suggests that the somewhat murky history of this major national redress initiative is a story of commitment and hope, but also a tale of neglect and corruption. When the marginalized (actually mainstream) were embraced, those who embraced them were marginalized. There were however some positive signs: it was aimed at improving quality of teaching and not simply at the attainment of qualifications. The initiative also showed concern for the accessibility of teacher education opportunities.

Ms Welch went on to briefly refer to the system of Continuing Professional Development (CPTD). She suggested that the policy document contains a good, clear statement along the lines that professional development should be directed at improving the *quality of teaching*, and not simply at giving people qualifications. However, the vast majority of the teaching force needs sustained consistent professional development beyond the mere 240 hours (150 Professional Development (PD) points) that can be provided in a three-year cycle. Further, Ms Welch finds it worrying that the major providers of teacher education, the HEIs, do not seem to be coming forward with statements of support for CPTD or plans for this matter, for the times ahead. When googling CPTD on the Internet for example, the first two entries are the private providers JBD *Consultants* and *Edutel*. Although Welch considers private providers to be an important component of the education system, she questions the scarce presence of public providers. She indicated that it is critically important

for CPTD to be directed towards improving the quality of teaching, and that there is a need for vigilance to ensure that resources are harnessed for the mainstream majority.

Ms Welch concluded that the challenge for teacher education in this country is not simply to get enough new teachers of different kinds into existing courses for formal qualifications, but to understand how to reach the thousands of untrained, partially trained, and willing-to-be-trained teachers *already teaching* in our schools. These teachers need to be provided with sustained programmes offered in flexible ways and directed towards building on and improving the quality of teaching. She referred to the following statement by Moon and Dladla (2002), arguing for school-based approaches to teacher education:

> "…the institutions of teacher education created in the twentieth century will be unable to cope with the scale and urgency of demand required in the twenty-first. These were mostly 'bricks and mortar' institutions, offering a traditional college-based course in the foundations of education and some practical experience. These institutions did, and do, concentrate on pre-service, initial training with only limited involvement in the career-long development of teachers. In making this point we are not suggesting the redundancy of such institutions. We want to suggest, however, if they have role to play in meeting the development challenge, they will have to change their purpose and function…"
>
> Moon and Dladla, 2002: 3

Ms Welch argued that the call to reopen teacher colleges by the African National Congress (ANC) is best interpreted as an appeal to direct the teacher education system to meet the needs of the mainstream. But for her, there are better ways to do this than by simply going back to the old-style teacher-training colleges, even if this were possible.

Ms Welch proposes instead, that teacher education should be reorganized to meet the needs of mainstream schools. Firstly, *both quality and access for the mainstream should be established.* These goals involve identifying a wide range of non-traditional learner-teachers in and for mainstream schools and providing access for them to quality, flexible research-based teacher education. For example, school-integrated learning could be used

to offer a flexible four-year B Ed to reach students located far from city centres and not able to study at institutions full-time. Such a programme could lead to improved teacher-education, if quality is understood as designing programmes to meet the needs of mainstream teachers and their learners. Ms Welch referred to sources such as Cochran-Smith and Lytle (1999) for the theory and design of programmes around school-integrated learning. She suggested that the goal of school-integrated learning is to help teachers to go beyond simply using or applying the formal knowledge that they gain in their practical situations. It is also to help them to build knowledge of practice through acting reflectively and thinking practically. The biggest challenge of school-integrated learning is however to organize it in such a way that school, teacher training institution, as well as students and their colleagues are drawn into a community of practice directed towards understanding practice and enacting knowledge.

Second, Ms Welch suggests that these initiatives should be *monitored to prevent the exploitation of the mainstream.* That is, the management of these programmes should be controlled to avoid corruption and the exploitation of vulnerable and isolated teachers. She feels that it is critical that public money is used in these initiatives, and that the department should secure the services of an auditing firm to manage the funds involved in the allocation of bursaries. This control is particularly necessary in the case of providers not using public funds, and not accepting public bursaries because the bursaries are accompanied by associated conditions. These providers are not worried about subsidies as they get more money from student fees than they do from funding. It is therefore necessary for evaluation systems to go beyond paper approval, to the monitoring of delivery. Ms Welch feels that teacher education is in sufficient crisis to merit the expenses that this monitoring would incur.

Ms Welch concluded finally by proposing *that those who meet the needs of the mainstream should be mainstreamed.* In other words, state funding needs to be designated—the programmes and teacher-educators who deliver quality large-scale teacher education to already-serving teachers in mainstream schools should be recognized. She argued that the coordinators of large-scale programmes that meet the needs of the mainstream should be seen as leaders in teacher education, rather than as the Cinderellas washing

dishes in the kitchen. Or rather that the kitchen needs to be seen as the most important room in the house.

Discussion

A person from the floor asked for clarity about the process of determining the numbers of teachers with particular qualifications and the sources of information being used in this regard. Ms Welch explained there are two sources being used: PERSAL (Personal Salary Information) and EMIS (Education Management Information System). She suggested that PERSAL is problematic as it indicates REQV levels but does not actually link these levels with qualifications; furthermore—REQV levels and qualifications are not the same thing. The problem with both the EMIS and PERSAL systems is that they are reliant on self-report data from the educators and also on the verification processes within individual provinces. In addition, PERSAL and EMIS 'do not talk to each other'. Ms Welch said that in the SAIDE research being done for the Department of Education, it will be necessary to survey a statistically significant number of schools to provide a more refined understanding of the nature and scale of upgrading needs.

Another participant asked for clarification about Ms Welch's statement about the need to go beyond evaluating the paper entry requirements of providers and HEIs. Ms Welch indicated that she was referring to the process within the National Department of Education that evaluates programmes and qualifications for teacher education submitted by HEIs or private providers. Using the current norms and standards to evaluate qualifications submitted by providers, the qualifications evaluation staff currently ask: *'Is this a qualification that the department can recognize for employment in education?'* Ms Welch argues that the affirmative answer to this question is not sufficient to ensure quality teaching because it is possible to submit something that looks good on paper but does not bear any relation to what is actually happening in the field.

A participant queried the process of gathering data about Early Childhood development (ECD) educators, and suggested that the introduction of Grade R had led to the marginalization of this group,

and a gap or omission in policy. Ms Welch indicated that she thought that the participant had made a very good point. She explained that SAIDE is currently engaging with the issue of career pathways for ECD educators, with particular reference to how the training of Grade R teachers can be addressed through the revision of the norms and standards (currently underway and to be aligned with the Higher Education Qualifications Framework).

Another participant agreed that both access to teacher-education and the quality of these courses need to be addressed, but queried whether they could be addressed simultaneously. She suggested that access is a political and social issue, and an issue that leads to compromise in quality. In response, Ms Welch stated that teacher education is a challenge and reiterated her position that school-integrated learning approaches are best able to deal with this tension.

The impact of the national review of teacher education on institutions was also queried. Ms Welch indicated that in her view the national review of teacher education has had a positive impact on some institutions but almost none on others because it relies on people having a conscience and being motivated for self-improvement. In addition, the Higher Education Quality Council (HEQC) can only sample a few very select programmes. The idea behind sampling a few programmes however is that if the concept of quality is discussed and standards are set, these concepts will infuse other programmes. Ms Welch explained that this beginning has had some positive impact and that SAIDE has been involved in supporting some institutions as a result of negative HEQC reports.

Lastly, a participant questioned the quality of Further Education and Training (FET) Colleges referring to dismal recent pass rates of 9% in this sector, for example. Ms Welch suggested that it does not help to castigate these institutions; she noted that even although in some contexts there are people at the chalk-face trying to make a real difference, the management difficulties within some of the institutions potentially nullify a great deal of the impact of other positive initiatives.

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Introduction of the second speaker

Dr Bolton introduced the next speaker, Dr Kakoma Luneta, a specialist in Mathematics teacher-education and professional development in education. He is a Senior Lecturer in Mathematics at the University of Johannesburg as well as a leading researcher for the Education Policy Unit at Wits. Dr Luneta has taught adult education Mathematics, and professional development, at various universities and training colleges in southern Africa, the United Kingdom and United States of America. Dr Bolton explained that he would speak about the quality of Mathematics and Science education—about low results and low participation in Mathematics and Science courses, and how to improve this situation.

Quality education, with particular reference to mathematics and science

Dr Kakoma Luneta, University of Johannesburg

Dr Luneta began by explaining that he would hinge his presentation on the 'quality of education generally' as there was insufficient time to look at Mathematics and Science education in detail. He would then relate this discussion to Mathematics and Science education in South Africa.

As a brief backdrop to his presentation, he referred to some of his experience in 2003 as advisor to the Minister of Education for a project in Ethiopia. This project involved developing televised educational materials for use in classrooms in Ethiopia: Dr Luneta was responsible for looking at scripts before they were shot and also later assessed the impact of the materials in the classroom. The average class in Ethiopia included about 112 learners, and as many as 90% of the learners passed Mathematics and Science in this context.

Dr Luneta explained that he would try to answer the following questions in his presentation: 'What constitutes quality education in South Africa, and what are the indicators of quality education in Mathematics and Science?' In order to answer these questions he referred back to a paper he wrote in 1998 (see Luneta 1998) and stated that quality education answers to the social and economic needs of society. He also referred to Jomtien (1990) and Dakar (2000), suggesting that quality education is a fundamental

determinant for enrolment, retention and achievement. For Dr Luneta, quality education must produce certain characteristics in learners, that is, learners need to end up being motivated to learn. Further, competent teachers use effective pedagogy or instructional approaches, and content needs to be related to a relevant curriculum. In addition, there must be good governance and equitable resource allocation within the system. Dr Luneta wrapped up this list by emphasizing that research generally shows that good results are linked to good school management.

Dr Luneta then posed the question: 'Why talk about quality education?' He answered by saying that quality education links to social and economic benefits for individuals and countries. If learners achieve high scores, there are social benefits and later more likelihood of higher economic income than if they achieve low scores. Dr Luneta mentioned the Third International Mathematics and Science Study (TIMSS 2003) as an example of research showing links between achievement at school, and economics in the countries concerned. He pointed out that learners from countries in the Far East generally do very well in the TIMSS tests and that these achievements can be linked to strong economic development. It is possible to say that strong results in Mathematics and Science are able to promote economic growth.

Dr Luneta noted that if sufficient classrooms are built and there is a low teacher to pupil ratio, there is often improvement in classroom instruction. In the South African context, the budget for education is one of the highest in the world—it is probably the highest in Africa. However, the results of many comparative studies suggest that the quality of this education system is questionable. Why is this situation the case? Dr Luneta emphasized that quality is not a question of how much is spent on education. If each learner in the classroom has a textbook or computer, but the teacher does not have the required content understanding, instruction will not work successfully.

Dr Luneta then outlined indicators of quality that research worldwide, including that in developing countries, suggests that attainment in areas such as Mathematics, Science, and foreign languages are major indicators of quality in education. Another indicator is success in transition to different education levels; yet another is low drop-out rates. In the face

of this indicator, Dr Luneta noted that statistics from the Department of Education and Statistics South Africa reveal that there is a large discrepancy between the number of learners going into Grade 1, and numbers moving up through the system to Grade 12—a large number of South African learners drop out (see Centre for Development and Enterprise, 2007).

Completion of secondary school and participation in tertiary education by learners are critically important for a country, and are further indicators of quality in an education system. Dr Luneta expressed concern at the rate at which learners are enrolling for Mathematics and Science courses at university level—a rate currently dropping. He mentioned literacy as another indicator of quality, as this competence leads to improved social responsiveness amongst other things. The monitoring of parent participation, and the evaluation and steering of education, are important. In short, quality education, while to a degree depending on resources, educational expenditure per learner, and other factors mentioned, depends largely on the education and training of educators. Dr Luneta indicated that he would return to this point.

Dr Luneta then pointed out the importance of focussing on what needs to be done to enhance the quality of education in South Africa. He directed attention to the significance of considering *what initiatives* are needed to increase literacy and numeracy levels in the country. He reminded the audience that there is already high government expenditure on education and noted that South African teachers are relatively well remunerated, especially in comparison with other African countries. He then made four important points.

First, Dr Luneta stressed that effective professional development programmes are critical in order to improve instructional approaches and activities in the classroom. He related that in one of the Saturday courses for teachers in which he is involved, he asked teachers about professional development programmes available to them. For this group, there were on average three courses per year. There were however often problems with these courses. For example, teachers attended a three-day course on the National Curriculum Statements—but the teachers suggested that the trainers themselves were not as well-informed or competent as they should have been. Dr Luneta emphasized that there are insufficient effective

teacher-development programmes in South Africa.

Second, Dr Luneta pointed out that it is generally known that the amount of instructional time can have an important impact on the quality of education. If learners have a minimum of between 950 and 1000 instructional hours per year, this amount of contact time improves levels of literacy and numeracy. It is therefore important to look at how time is spent at school.

A third important focus comprises learning materials. Often, learning materials have been developed and requisitioned, but have not been delivered to schools on time. Or, they have been delivered, but are stored in offices rather than being distributed on time. Learning materials are therefore sometimes not used. It is clear that management of learning materials needs to be streamlined.

Finally Dr Luneta turned attention to problems in Mathematics and Science teaching, and the increasing failure to achieve success in these areas in spite of intense efforts to do so. He suggested that for Mathematics and Science, it is important that teaching is highly structured: *what needs to be taught and what needs to be learned need to be made clear*. Materials need to be divided into manageable units; teaching needs to focus on what will be assessed—*assessment criteria need to be clear*. Dr Luneta stated that it is important to sequence learning. Teachers should work with materials that *reflect learners' experiences*. When testing is done, there should be *immediate feedback*. Continual use of *teaching-learning time* is very important.

Dr Luneta then posed the question: *'What is the current quality of Maths and Science education in South Africa?'* He pointed to the unevenness of this quality, drawing on statistics from the Department of Education (see Centre for Development and Enterprise, 2007, and Department of Education, 2006). He noted that in 2006 a total of 467 985 learners wrote the Senior Certificate. Of these learners, only 39 939 (8.5%) did Mathematics on the Higher Grade. Further, only 7236 black African learners in this group (1.5% of the learners writing the Senior Certificate) passed, and out of this number only 0.5% achieved a 'C' or higher mark. Dr Luneta feels it 'treasonable' that these kinds of results are being produced, given the amount of money that the government is spending on the education sector.

Dr Luneta concluded with the following recommendations. Problem solving, critical thinking and the *application* of knowledge need to be prioritised. Since research generally suggests that most difficulties experienced by teachers relate to content and instructional approach—teachers need to be taught how to structure their teaching in order to make evaluation criteria explicit; divide learning into manageable units; sequence learning; give clear and immediate feedback, and set questions that go beyond straight-forward recall and require in-depth engagement.

Discussion

The first comment from the audience followed up on the skills prioritized by Dr Luneta: 'problem solving, critical thinking, and argument'. The participant agreed that these skills are important but suggested that the main problem with Mathematics and Science education is that teachers do not have the basic content knowledge in order to develop these thinking skills. She argued that if learners cannot comprehend Science knowledge they cannot develop these thinking skills, she therefore prioritized a return to basics with a focus on content knowledge. Dr Luneta concurred with the idea of the importance of the basics but stressed that problem solving, critical thinking, and argument need to, and can be, taught from primary school levels upwards. However, teachers also need to have a good grip on what their learners have to know; South African teachers are struggling to do this. Another person from the floor agreed with this point, suggesting that learners need to know how to think and that knowledge needs to drive this process. However she feels that significant damage has been done in the current system, and that it is important to go back to teacher-training institutions to effect change.

Another participant raised the issue of lack of language skills as a barrier to successful Science and Mathematics education. Dr Luneta agreed that this is an important factor influencing the quality of teaching and learning in Mathematics and Science classrooms. He stressed the importance of contextualizing learning in a language with which learners are familiar. He indicated that teacher code-switching in the classroom, between for example English and Zulu, is an important way to achieve

this contextualization. Another participant extended this discussion by referring to the importance of translating textbooks into home languages. Dr Luneta agreed that books needed to be available in mother tongue languages, and stressed the importance of current initiatives to translate Mathematics and Science dictionaries into various local languages.

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Introduction of the third speaker

Dr Bolton introduced the third speaker, Professor Michael Samuel, Deputy Dean for Initial Teacher Education at the University of KwaZulu-Natal. He was a member of the Ministerial Committee on Teacher Education (MCTE) tasked with developing a national framework for teacher education in South Africa. Policy arising from this work was gazetted in April 2007 as the National Policy Framework for Teacher Education and Development in South Africa, steering new directions for the sector of teacher education and professional growth. Professor Samuel served as Deputy Dean, and Director of the Faculty of Education and the School of Educational Studies, at the former University of Durban-Westville. He serves on numerous advisory bodies including the Reference Group of the Council for Higher Education. This body set up the 2005-2007 review of all teacher education professional and academic programmes in South Africa. He was also part of the technical advisory team (2004-2005) for a major research project undertaken by the Human Sciences Research Council (HSRC) on behalf of the Education Labour Relations Council which reviewed the national teacher supply and demand challenges in the context of the HIV and AIDS pandemic.

Professor Samuel has participated in international studies supported by the Department for International Development (UK) which involved researching teacher education in Ghana, Malawi, Lesotho, Trinidad and Tobago, and South Africa (1998-2003). Another international research project looked at who sits at the margins of schooling in South Africa and in India (2002). Both of these studies involved collaboration with the University of Sussex.

Professor Samuel currently serves as a consulting editor or on the editorial board of several educational journals in South Africa. He has served as an advisor to the National Research Foundation (NRF) for the Technikon Research and Capacity Building Programme (2001), and as a reviewer for the funding of research proposals (1999-2001). He has co-ordinated an international conference with the theme 'International Trends in Teacher Education: Policy, Politics and Practice' (1999).

Professor Samuel supervises doctoral and masters research students

in a range of areas including: language, culture and nation-building; sociolinguistics; teacher professional development; teacher education policy; teacher union development; life history research; and curriculum design and development in the Higher Education system. He has delivered many conference papers nationally and internationally, and has published widely. Dr Bolton explained that his input would be focused on deep professional learning, and initial teacher education and continuing development.

Deep professional learning: initial teacher education and continuing development

Professor Michael Samuel, University of KwaZulu-Natal (UKZN)

Professor Samuel began on a positive note by stating that this year (2008) the University of Kwazulu-Natal (UKZN) had over 3000 applications for the B Ed, and that 890 individuals had applied for education bursaries—these are high figures. He explained that the majority of UKZN's students need 32 points in matric in order to gain access to the B Ed programme—not the highest number of points required for courses (higher numbers of points are required for science and engineering degrees, for example), but also not the lowest: high standards are being set for entry requirements. In addition, the university is transforming: five years ago the majority of the students at UKZN were white, but today 65% of the students are African students of colour. The Foundation Phase programme is currently taught through in the medium of isiZulu—this local-language course is the first of its kind in the country. Professor Samuel challenged the other two institutions offering Foundation Phase programmes in initial teacher education—UNISA and the University of Fort Hare—to think carefully about the curriculum design of teacher education. He explained that his presentation would focus on initiatives currently being taken by UKZN that make it anomalous to the true-to-life picture sketched by Ms Welch. He also indicated that he would share his experiences of working with the South African Council for Educators—Department of Education (SACE-DOE) task team, as well as where the work of this team is in relation to the delivery and design of this particular system.

Professor Samuel referred briefly to Dr. Luneta's presentation and his focus on improving the quality of teaching and learning by looking at alternative teaching, learning and assessment strategies. He argued that this approach leads to a focus on the processes of practice, and the development of practice. In light of Ms Welch's focus on policy, he questioned if the right policy choices are being made in terms of the design of teacher-education programmes. For example, Ms Welch questioned if the focus should be on upgrade or initial professional development to produce enough qualified teachers for the numbers needed. Professor Samuel feels that the debate generally stops at the 'resources level'. That is, he feels that human, physical and financial resources dominate thinking—and that this thinking often leads to research into demand and supply. He pointed out that he agrees with Ms Welch that it is important to up-scale teacher programmes, as insufficient teachers are being produced. He noted however, that professional development is often deflected in this process. He added that a lot of time has been spent on designing policy for teacher education and that it is now important to get moving with the implementation of this policy.

In order to provide a theoretical background for his ideas, Professor Samuel drew on Michael Eraut's concept of teacher professional knowledge (Eraut 1994), asserting that teachers need different kinds of knowledge. Although he did not have sufficient time to go into all of these knowledge types, he emphasized that they are interwoven. However, depending on the 'flavour of the month', different kinds of knowledge can be prioritised. As Eraut (1994) rightly argues, all of the knowledge types are needed as they are interconnected. For Professor Samuel, the majority of South African teacher development strategies, including Initial Professional Education of Teachers (IPET), tend to focus on what Eraut (1994) calls 'formal propositional knowledge' because this type of knowledge is relatively easy to test and measure. However, as Eraut (1994) correctly says, this 'public propositional knowledge' is only the tip of the iceberg.

Professor Samuel explained that what sustains deep professional growth is a whole lot of activities referred to as 'private knowledge' or 'craft knowledge'—knowledge rooted in schools and their rituals. He suggested

that schools should seek to engage with each other, to appropriate and re-interpret policy, and make sense of policy goals. Policy can only signal the direction in which schools should be going—sustained deep professional learning is required for *implementation* of this policy.

Professor Samuel asserted that the teacher professional education is not spending enough time and attention on *deep* ways of knowing. What lies beneath the iceberg is important, in other words, knowing how to organise systematic learning in specific contexts, is critical. There are a range of policy texts for South African schools, for example, the Norms and Standards and the National Framework of Teacher Education (Department of Education, 2001). Teachers are expected to read this plethora of documents. Depending on where a person is positioned in the system—Department of Education, South African Council for Educators, teacher union, or other context—certain aspects of this content will be foregrounded in the range of possibilities. Referring back to Eraut (1994), Professor Samuel noted that all aspects of the education system are connected, and that different aspects come to the fore at different stages in the growth of individuals.

Professor Samuel then appropriately shifted focus to the concept of 'biography' and, referring back to Ms Welch, suggested that a lot of the debate around teaching focuses on *who* is gaining access. The system of training teachers is currently under producing—5,5% of teachers are leaving the profession annually and only 6000 of the 15000 new teachers needed graduate each year. There is much discussion as to how this situation could be improved. In answer to this question, Professor Samuel asserted that it is important to question what student teachers are being allowed access to. What are individuals becoming teachers for? Professor Samuel noted that the idea of developing committed caring and competent teachers is often forgotten. Teachers need to ask themselves: 'Can I implement the curriculum? Am I committed to teaching? Am I competent? Do I care about these things?' Professor Samuel argued for *'biographical'* considerations—the importance of considering who student teachers are, and what biographical experiences they bring with them. Very often programmes adopt a *tabula rasa* approach to teacher education where student teachers are treated as blank slates—as if they have no history

of pedagogic knowledge at all. The contrary is the case, and Professor Samuel stressed the importance of drawing on this biographical history. The fact that the Education Department at UKZN is drawing on personal histories, is highly innovative.

Prof. Samuel noted further that because sometimes students are described in terms of their deficits, it is necessary to fill them in with some 'public propositional knowledge'. If they are given this knowledge, it is generally believed that professional development is taking place. Students are also often thought to have no resources to contribute; and this perceived deficit impacts on the way in which Initial Professional Education of Teachers (IPET) programmes are designed. However, for Professor Samuel, it is important to start with the notion that teachers have *heritage* and not baggage, and resources, not problems. Thus seen, student teachers begin to see *themselves* as capable of construction and reconstruction.

A possible argument against this approach is that the focus on biography concentrates on the students' past. However, both what students bring with them from their backgrounds, and also what aspirations they have for their futures, are important. Professor Samuel feels that it is important to find out about students' thinking around their futures, and to question what they are constructing. He went on to say that the past needs to be disrupted, that students need to move forwards while recognising in the foreground, their background influences. He claimed that dreams and projections are never divorced from reality, and that students' visions are part of their thinking about quality.

Professor Samuel noted that the Department of Education wants to see a tight fit between the school curriculum and those of teacher education. However, if we are preparing students simply as implementers of curriculum and there is no allowance for broadening students' understanding of disciplines and creating space for contesting some of the available knowledge, it is not possible to develop mindsets in which there is confidence for questioning and expanding boundaries.

Within IPET courses at UKZN, as well as acknowledgement of students' biographies, there is recognition that the majority of students have not been exposed to the full range of South African school contexts

including upper middle-class 'ex-model-C' schools; township schools; and middle-of-the –range suburban schools. Students are therefore deliberately guided through experiences in these different contexts. They enrol in supportive and caring programmes for this purpose. In the programmes, they are encouraged to engage with any discomfort that they might feel, in positive ways. Over their four-year training period, students are required to teach in contexts other than those with which they are familiar. The students are grouped, and each group is made up of individuals with different backgrounds and experiences. When they work together in a context they are therefore able to support each other in different ways. Students work for example, in rural areas and experience what is like when there is no water, and there are no toilets. Further, they are required to deliver quality education regardless of the contexts in which they are working. Professor Samuel argued that these experiences develop the commitment and care needed for social reconstruction in this country. He emphasized that UKZN is producing teachers equipped for the diverse educational contexts in South Africa, and not for the export market, or for privileged schools only.

Professor Samuel then shifted attention to lessons learnt from the Continuing Professional Teacher Development (CPTD) system. He feels that it is problematic at this point to evaluate this system as it is still being set up, but indicated he would share his thinking around how to deal with the purposes of the system, and building pedagogy that addresses barriers to learning.

The task team initially came up with guiding principles, that is, the kinds of considerations important when thinking about a CPTD system with a focus on accessibility and improved practise. These guiding principles were then translated into policy for professional development. There is currently a draft version of how professional development activities could be turned into professional development *points*. Since competency and professional practice has been identified as a key lever for quality education, a grid is being developed with weighted points to serve as an example of how activities could be evaluated by an endorsement committee. If there is lack of overall compliance with one of the specified categories, there could be no endorsement. Several partners such as the

Education Labour Relations Council (ELRC); Department of Education (DOE); South African Council for Educators (SACE); teacher unions and Education, Training, and Development Practitioners—Sector Education Training Authority (ETDP—SETA), and others, are contributing to this discussion in order to refine the tool. There will be particular rules of combination for items, and over a period of three years teachers will need to acquire particular numbers of points. In order to set up this system, a governance structure is needed. SACE has been mandated by the South African Council for Educators Act (Republic of South Africa, 2000) to carry out this function. Several support committees also need to be set up. Professor Samuel indicated that the seed funding for this system is being provided by the national Department of Education, a circumstance giving the DOE leverage power and adding complexity and tension to the CPTD system.

Some groups such as that in Mpumalaga have asserted that they cannot do everything required to prepare for the CPTD system. This group has specified five key aspects that they will be able to achieve however, and Professor Samuel pointed out that these types of choices are useful. The group is also contesting the notion of what professional development comprises. Although he did not have time to go into detail, Professor Samuel noted that in his view, professional development should not require monitoring: there should be no need to check up on whether professional development is taking place or not—professional engagement should be motivated by the commitment and care of the individuals concerned.

Professor Samuel concluded by returning to the teacher—development programme at UKZN described earlier. He emphasized that a range of forces need to be brought together if a professional identity is to be modelled. All these forces push and pull the individual in a 'force field', contributing towards the development of the professional teacher. Professor Samuel noted the necessity for teacher educators to ask where they are located, and what influence they can bring to bear on the lives and experiences of those they educate—and that this questioning needs to be taught in both initial and continuing teacher education.

He explained that at the end of 2007, UKZN students who had spent two years being exposed to a variety of different educational

contexts actually asked if they could develop their own 'Hippocratic oath'. Motivated by the desire to reconstruct the status of teachers, they dedicated themselves to the teaching profession. For Professor Samuel, this kind of commitment indicates that the IPET programme is moving in the right direction in terms of making teacher education work; it shows that UKZN is indeed producing committed, caring and competent individuals who understand that they are making a contribution to education. At the end of 2007 UKZN had a dedication dinner in which the students formally stood up and recited their commitment to education in South Africa, in front of the Minister of Education. Professor said that it came as no surprise that the Department of Education has increased its bursary commitments to UKZN. And in turn, the commitment of the university Department of Education is evidenced and reflected in the kinds of students attracted to its teacher—education courses, and the way in which these students talk about what it means to teach.

Discussion

A participant commented that like Professor Samuel, she thought it very important to expose student teachers to various kinds of South African school contexts. She also concurred with Ms Welch that marginalized schools need to be mainstreamed. Professor Samuel stressed that policy expects teachers to be prepared to teach across diverse South African schools. However, most teacher education has ignored this fact, and students often have to rely on their own narrower experiences. The UKZN programme is deliberately designed to disrupt students' comfort zones—to expose students to new contexts—while at the same time encouraging individuals to recognize the legitimacy of contexts from which they come. There is strong resistance to this process, not from the students themselves, but from their parents—who are often concerned about their children's safety. Professor Samuel noted that it is important to see education as disruption of the known and familiar—and for this disruption to take place in a supportive environment. UKZN started this work with over 500 schools, but has decided to reduce this number to 300, for 2000 student teachers. UKZN is striving to deepen the quality of the

partnership it has with the schools. It is important that these schools see themselves as resources, and not just as what used to be called *placement* schools. They are now known as *partnership* schools. The responsibility for mentorship development is hereby decentralized. Mentors in the schools are trained and developed in a model that helps them to realize that they have resources to contribute to teacher education. Professor Samuel noted that a lot of higher education teacher education institutions are sitting in ivory towers, not connected to the real world—in that they are teaching for a world that exists for only 10% of the population, the 10% that makes the loudest noise in media. In reality 90% of schools are multi-grade, mixed schools, many having no water or sanitation.

Another participant explained that he was very struck by what he described as the 'spiritual' component of UKZN's teaching programme, and commended the work being done. Professor Samuel replied that it was important to bear in mind that it is not possible to solve all the problems that exist through this approach. He reiterated that the Department of Education at UKZN is focused on the development of only 2000 students and engages with only 300 schools. However, even although only 500-650 new teachers emerge from the programme each year, he feels that these are quality teachers. UKZN also has a Continuing Professional Teacher Development (CPTD) system which includes upgrading and reskilling programmes that reach wide target audiences including practicing teachers in rural areas.

Professor Samuel said he felt that Ms Welch would agree that this work by UKZN is an exception to the general picture she painted earlier. He went on to say that this difference could be attributed to UKZN being in a different space theoretically, to that adopted by some of the other institutions concerned, and to a firm belief in the inherent potential competence of people. For him, if a teacher has been teaching without a qualification for twenty years it does not mean that this person has nothing to offer. This expertise however needs to be disrupted, questioned, and re-thought so that the person can grow. For Professor Samuel, the CPTD and IPET systems are all about extension, development and growth. If teaching is seen as compliance then teachers could end up signing in for work and then in reality being uncommitted anyway. The goal of the CPTD

system is to tap into deep professional learning, not surface professional learning or compliance.

Another participant commented that when teachers leave training institutions, they could potentially go into schools with non-supportive school cultures. He asked about Professor Samuel's experience of schools in the programme, and whether or not these schools are picking up on the deep learning perspective adopted by the university, and providing the nurturing environments advocated. Professor Samuel explained that UKZN has deliberately selected its pool of partner-schools so that 50% of the schools are 'working' (and referred to as "Type A' schools), and 50% are 'not working' ('Type B' schools). Over the four-year training period students have to work in both types of schools: the programme is deliberately orchestrated in this way. Further, if UKZN places a team of students in a school, there is always a contractual arrangement between the school and university. Contracts outline the roles and duties of university tutors, school principals, mentor teachers, and students. Existing teachers have to undertake professional training in order to fulfill their mentoring and support roles, and this process has a knock-on effect at the schools, and between the schools and the university. Relationships start to develop between the university and each school, and mentoring teachers tend to become very enthusiastic.

In addition, these mentorship programmes are linked to UKZN's continuing education teaching projects. Training for the role of mentorship can become a formal part of the professional development qualifications for existing teachers, and the process involving moving from 'placement schools' to 'partnership schools' is a prolonged one. In a school that is not functioning at maximum capability levels, UKZN works with the principals in a strongly supportive team approach, sending in the more senior students. This complex process is designed to enhance the quality of experiences that students will have. If the designated mentor teacher does not support a student teacher the university intervenes, drawing on the contract document to outline respective roles and responsibilities. Professor Samuel stressed that IPET is not end of a journey, that it is not possible to expect students to be professionals after four years—in short, that IPET is just the beginning of a very long growth curve.

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Reflections and closure

Dr Bolton concluded the seminar by thanking the speakers for their contributions. She invited all participants to attend the next and final scheduled seminar in this first series on improving public education. The topic of the next seminar is *How can quality assurance improve quality?* It was to be held at the Wits School of Education on 28th May 2008.