STUDENT TEACHER PROFESSIONAL DEVELOPMENT FOR THE 21ST CENTURY

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Abstract

Education and change are crucial for humans to survive in a universe that is rapidly changing and where uncertainty for the future reigns. Education change in South Africa is seen in the new education policies aimed at making the curriculum relevant, inclusive of different knowledge types and providing quality education for all. But, teachers are the crucial interface between the policies and quality education practice. There seems to be little clarity and/or agreement on how teachers should be prepared to fulfil this critical interface role. The daunting challenge for education is therefore to change teachers' paradigms of thinking and action completely and to recognise the personal aspects that are linked to uncertainty (Barnett, 2004). This can only happen if teacher professional development programmes focus on student teachers constructing and using phronesis - the capacity to act in the most effective and appropriate way in every particular situation – rather than possessing a body of spatially temporally detached universal knowledge" (Slabbert, 2003, p. 7).
Key words: *professional development; teacher education; phronesis; quality education practice.*

Introduction

Education and change are crucial for humans to survive in a universe that is rapidly changing and where uncertainty of the future reigns. Change does not come easily to humans, as they are people of habit. The rapid changes and uncertainty naturally create feelings of insecurity, incompleteness and fear in humans. If humans are to survive, then the education they participate in must enable them to be empowered in the face of rapid changes and uncertainty. Education should be about philosophical, action linked, cognitive, emotional, personal and individual perceptions and experiences for humans to develop attributes of resilience, independence and flexibility. The goal of education therefore should be to develop individuals who have the assuredness to act in a changing world.

In South Africa, the goal of education is to address the subservient, irrelevant, unrealistic, impersonal education that the majority of people received under the rule of apartheid pre-1994. Since 1994, education policies aimed at making the curriculum relevant, inclusive of different knowledge, including indigenous knowledge, realistic, personal and providing quality education for all South Africans. To this end, education policies and new curricula were introduced in the form of curriculum statements. The introduction of these education policies and curricula were seen by the South African government as heralding the intended changes in education. But sadly, policies and curriculum statements do not bring about changes and improvements in quality education on their own. Teachers

are a crucial interface between the abstract education policies and curriculum statements on one side and quality education on the other. There is little doubt that teachers are ultimately the determinants of quality education. However, there seems to be little clarity and/or agreement on how teachers should be prepared to fulfil this critical interface role. In fact, what seems to be maintained in many teacher education programmes is the age old theory-practice divide where teacher educators make a simplistic selection of the most prominent education theories to be transmitted to student teachers who have to apply it in practice. This practice persists despite that it has been shown over many educational transformation attempts globally that it does not enhance the improvement in the quality of teacher education and subsequent teaching in practice. This limiting perception and oversimplification of the preparation of teachers indicates a dangerous ignorance about the complexities inherent in education and what teachers need in order to equip them to contend with the vast array of existing pedagogical content knowledge (resulting from psychological, sociological, educational, emotional research), aggravated by political agendas and perspectives (policies and curriculum statements). This is compounded by learner diversity and confusing conceptions of learning, as well as by the anxiety (for teachers and learners) of living in a rapidly changing world and facing an increasingly uncertain future. It thus seems inevitable that teacher education should engage in the development of a new teacher professionalism that transcends the theory–practice divide and encapsulates the complexity of education in the highest possible quality education practice.

The educational challenge

One of the reasons for the dangerous ignorance of the complexities of education and the subsequent persistence in the theory-practice divide is the false perception that the knowledge (theory) to be learned sits somewhere, outside of a person and it is for the taking. If that is the case then the assumption is that the knowledge can simply be learned (memorised) and this action will then be sufficient to enable one to transfer the knowledge and successfully apply it in practice. We now know that the "most recent developments in experimental psychology, cognitive science, artificial science and neuroscience has proved these assumptions to be false" (Claxton, 1999, p. 10). In addition, these assumptions are redundant in a world where the pace of change described is so rapid. This is expressed by Barnett (2004, p. 248), "the rapidity in which the new world replaces the old". It is not only the pace of change, that is so overwhelming but also the sense of an unknown world that is now so vivid (Barnett, 2004). Even if we could keep up with the knowledge generated each moment – which is a cognitive impossibility – the information explosion has brought about a kind of information ignorance, because the more we know the more we know how little we know. In addition, the overwhelming abundance of knowledge that is now instantaneously available on the internet to anyone all over our global village is so wide, varied, coloured with opinions, values, ideologies, deceit, representation, etc that it is difficult to make sense of it. But what is even more debilitating because of our reliance on existing knowledge as our saving grace for entering the future, is that knowledge of it is not available. As Barnett (2004, p. 250) tells us that the world is "radically unknowable" We cannot and will never have knowledge of the future and this has shattered our sense of security. The felt impact of this situation is that of uncertainty. This uncertainty inhibits us from acting "with assuredness" (*ibid*, p. 250) in the world. It creates discomfort, anxiety and fear in what Hargreaves (2003, p. 27-35) calls "the age of insecurity". We are indeed witnesses of the most significant shifts in human history "[a]nd society is totally unprepared for it" (Drucker, 2000, p. 8). Not only is society unprepared for this dramatic change, "[T]he seismic scope of this change forces us to completely rethink everything we've ever understood about learning, education, schooling, business, economics and government (Dryden and Vos, 1999, p. 21).

The daunting challenge for education is therefore to change our paradigms of thinking and action completely. Moreover, we need to "rethink the relevance of what we expect the learners to learn" (Senge, Cambron-Mccabe, Lucas, Smith, Dutton, and Kleiner, 2000, p .27-48). This is very difficult because we do not even know "what professions would be 'invented' by the time they reach an age to work" (Lambert, 2002, p. 4). It is also obvious that they [learners] need to acquire new competences. Hargreaves (2003, p. xviii) argues for the following: "developing deep cognitive

learning, creativity and ingenuity … promoting problem solving and risk-taking, trusting in the collaborative process, ability to cope with change, and commitment to continuous improvement …" There is no doubt that this world will demand from learners the utilisation "of the incalculable assets of human intelligence and creativity" (Land and Jarman, 1992, p. 68). And Grulke (2000, p. 3) emphasises "flexibility, self-reliance, autonomy and independence as requirements for the empowered individual" in a world of uncertainty. But what is certainly the most significant about the demands of the continual changing world that dawns relentlessly upon us is that the uncertainty is primarily "a more personal form of uncertainty" (Barnett, 2004, p. 249) with a potential destabilising effect. That is why Covey (2000:12) states that the most important event that has to occur to enable us to live with uncertainty is "an unprecedented change in the human condition". The challenge for education is to accomplish this.

Professional development of student teachers

From the previous paragraph, the obvious question to answer is how this challenge determines the professional development of student teachers. Current education practice reveals very well the professionalism expected from teachers - to be a source of information and knowledge and to adopt the teaching methods through which the knowledge could be transmitted. It is a humanly detached, cognitive professionalism. The professionalism required, however, is that of a personally engaged, holistic nature where the intellectual is still necessary, but the personal, emotional and spiritual development of learners are primary. Hargreaves (2003, p. xi) is clear on this: "…we require a qualitatively different approach to teaching in the 21st century …" not only in what we teach, but especially how we teach. It requires from the teacher to adopt teaching methods through which the potential of all learners could be maximised and fully utilised by them through cultivating "practical, creative wisdom" (Slabbert, 2006, p. 1) to live and prosper amidst the uncertainties of real life. This is no doubt a daunting task for teacher education because what these competences should actually entail could best be described as the demanding challenges of a facilitating learning professionalism (Slabbert, 2006). Unfortunately, current education practice seems to be in denial that facilitating learning is something new. It has simply been accepted to include all teaching methods of the outdated professionalism with a little more emphasis perhaps on group work and the inclusion of skills – which means little more than the teacher not transmitting the knowledge but the learners cutting and pasting it from textbooks and other resources.

The professional development of student teachers should be an education for an unknown future. Since the future is unknown, we cannot depend on any existing knowledge and skills for developing student teachers and learners for it. According to Barnett (2004, p. 259):

there is always an epistemological gap between what is known and the exigencies of the moment… there can be no assurance that skills-even generic skills-appropriate to situations of the past or even the present will help one to engage with the future world in a meaningful way (Barnett, 2004, p. 259).

What will help is to develop "a form of human being …that is not paralysed into inaction but can act purposively and judiciously….Such action springs from a form of being that is authentic in character" (Barnett, 2004, p. 259). The development of a human being as authentic turns to the development of certain types of human qualities. Leonard & Murphy (1995, p. 14) contend that the development of a human being should be "to maximise and fully utilise human potential". This calls for a "transformatory curriculum" (Barnett, 2004, p. 259) with a special kind of learning from (school) learners: authentic, holistic, radically socio-constructivist in real life contexts (Slabbert, 2006). This kind of learning requires a special kind of education and this in turn requires a special kind of teacher education. Since this teacher education (should) produce(s) a teacher with a completely different conception of education s/he will find current practice (which cannot prepare school learners for an unknown future) completely different from his/her (teacher) education. But, his/her education represents what is necessary for living with uncertainty and should therefore be in conflict with current practices. This will in fact impede on the change that needs to take place in student teachers' perceptions about education in general and their education in particular. This problem is overcome by the requirement of substantial experience in practice from which the (educational) theory is constructed.

A special (new) teacher education differs radically from the current (traditional) one. These differences are evident in the table below:

Table 1.   **Differences between current and special (new) teacher education.**

Traditional	New
Fragmented-intellectual only	As with school learners, their learning should be holistic
Unnatural – objective not involved	Entire human being involved and authentic
Behavioural – informed by theory	Natural learning process (immersion in experience as educator, radically socio constructivist – construction of meaning (what do you do when you do not know what to do
The practice of the theory: theory first then the practical application	Constructing a practice theory [theory from practice] (phronesis) of and for facilitating learning in real life contexts – development during school based education and other facilitation of learning sessions.

Surely, the solution to preparing student teachers to teach for an unknown future and preparing learners to learn for an uncertain future can be realised in the new teacher education that is advocated.

Response of teacher education to demands for quality education practice

The demand for quality education practice has been a goal for teacher education throughout history. This goal is evident currently both locally and globally. On a local front, in South Africa, new teacher education policy was introduced – Norms and Standards (DoE, 2000) to address the needs of teaching for new curricula in the schooling sector. But, the action of transfer prevails for teacher educators as they are expected to implement and expose student teachers to new curriculum policy initiatives. They do this by modelling the most appropriate teaching and learning methods which they expect student teachers to use in the schools. This approach is linked to the traditional aim of teacher education where student teachers learn knowledge (theory) constructed by experts (teacher educators) and are then expected to use this expertise in their practice. This approach however does not produce the fundamental change required for student teachers (Korthagen, 2001, Zeichner & Tabachnick, 1981) to develop personally and professionally as reflective practitioners. The fundamental change according to Korthagen (2001b. p. 71) "can only take place if he or she desires change." Instead, the student teachers soon realise that they cannot use the theory presented to them and as Elliot (1991) states that they feel they fall short of living up to the expectations that the teacher educators seem to have of their capabilities. This develops student teachers who think that theory is useless and they "adopt the common habit of teachers to consider teacher education as too theoretical and useless" (Korthagen, 2001a, p. 5). For fundamental changes to be achieved, a new and different teacher education approach is necessary.

Globally, the demand for quality teacher education is being realised. The goal of the curriculum in Europe is to prepare student teachers to "be able to adapt to the future changes" (Markkola, 2003, p. 1). This goal is also a global imperative (Doyle & Carter, 2003; Adler & Reed, 2002; Markkola, 2003). If this is the case, then the teacher education curricula designed must be informed by the challenges and uncertain future that student teachers will be expected to face in the 21ˢᵗ century. Currently many teacher education curricular fall short of preparing student teachers for an unknown future and neither do they address the change in the "human condition" (Covey, 2000, p. 12). But more significantly, they do not focus on the purpose of life which is to maximise and fully utilise

human potential (Leonard & Murphy, 1995, p. 14). This according to Slabbert (2007, p. 2) is "not only a useful purpose, it is absolutely necessary." Slabbert (2007, p. 2) extends the purpose to include "towards a safe, sustainable and prosperous universe for all".

Clearly, education change is an imperative. According to Korthagen (2001a, p. 5) though, "the one thing that has become very clear through a wealth of research studies: Educational change is a problematic issue". In teacher education prevention of change is even further aggravated by a crucial perception as reported by Darling-Hammond (2006) – that curriculum reform still fails to recognise that teachers teach from what they believe and understand; and from what they understand how to do (Hargreaves, 1998).

If we accept that, the prevention of change is aggravated by student teachers' beliefs of how teaching and learning take place then it is crucial that these are challenged and changed. de Kock & Slabbert (2003, p. 12) support this "Change…seems to be driven by the changing of deeply held beliefs and a willingness to take responsibility for the practical implementation and realisation of associated educational values and intentions." This would require a major paradigmatic shift from the traditional view of "teaching as the transferring of knowledge [to] the facilitation of a process of learning" (de Kock & Slabbert, 2003, p. 1). This shift takes confidence, independence, courage and responsibility, obliging the student teachers to go "against the grain" (Cochran-Smith, 1991, p. 281). Since student teachers' beliefs determine their behaviour (Pajares, 1992), referred to as "mental model" (de Kock & Slabbert 2003, p. 1) they need to be exposed to new ones. But when they are introduced to new ones they experience "threats to their mental models" (*ibid*, p. 1). This in turn leads to "resistance to change… [which] causes primary inner conflict in student teachers" (de Kock & Slabbert, 2003, p. 12). This inner conflict is eased when student teachers enter the schools and observe the traditional approach in action. This observation serves to re-affirm their "confidence in the traditional mental model… [And] emotionally they cannot relinquish the safety of the old classroom" (de Kock & Slabbert, 2003, p. 13). Ultimately, the student teachers are comfortable, secure with their existing beliefs, and these prevent them from developing to be flexible, independent and competent to confront change. Challenging student teachers' "mental models" (*ibid,* p. 1) is clearly the way forward in addressing the theory practice divide in teacher education.

Quality education practice in teacher education will only be a dream if it is not based on changing student teachers' mental models and "authentic learning" (Slabbert & Hattingh, 2006, p. 14). Learning according to Zull (2002, p. xiv), "is about change, and it is change". If we want to prepare student teachers for the future then we need to focus on their learning about teaching and the learning required for learners. We need to act on the advice given by Claxton (1999, p. 11) who views the kind of learning that is required in education as "what to do when you do not know what to do." Slabbert (2006, p. 4) elaborates on this by stating, "and getting increasingly competent at knowing when, where, why, how and what to do when you do not know what to do." Kolb (1984, p. 9) provides the context for this learning "[it] is best facilitated in an environment where there is dialectic tension and conflict between immediate, concrete experience and analytic detachment". The role of the learner that is envisioned is one who actively constructs meaning in a problem-based learning approach. Of particular significance is the meaning that the learner him/herself constructs and "is then able to use it to do something creatively new" (Slabbert, 2006, p. 4) with the problems that exist or are initiated (Slabbert & Hattingh, 2006).

Problem-based learning is an imperative for authentic learning. According to Slabbert & Hattingh (2006, p. 14) it uses "real life problems to compel authentic learning with a dual emphasis on both competency development and the construction of meaning" In using the problem-based learning approach the type, purpose and variation of the problem must be considered (Slabbert & Hattingh, 2006). The problem must be "original, real time urgent puzzle that needs to be solved right now, because the dissonance experienced is too much to bear" (Slabbert & Hattingh, 2006, p.15). The purpose of the problem is that it "provides a trigger for the use of creative problem-solving skills, as well as a focus for a search of appropriate information and skills that might be necessary to understand the problem and possible processes to a resolution(s)" (*ibid*, p. 15). This problem-based learning will require of a student "engagement in a number of forms of intellectual activity and critically skilful thinking" (Aspin & Chapmin, 1994, p. 15). To prepare students for

this we need to look to the curriculum to "enhance the brain-mind potential of our students through a curriculum constructed to prepare our students to meet the challenges of real life" (Slabbert & Hattingh, 2006, p. 16).

Preparing student teachers for the future should focus on the curriculum but more significantly on the experience of learning how to teach in realistic teaching contexts. For students to meet the challenges of real life they require teachers who are "extremely well-educated and highly professional facilitator[s] of learning" (Slabbert, 2006, p. 5). Since learners are involved in their own learning Slabbert (2007, p. 4) contends that "there are only two things a facilitator of learning can do:

a. To get the learners to start learning – to initiate learning

b. To ensure that the learners keep on learning until the highest possible quality of learning has been achieved –to maintain learning".

As mentioned previously learners are involved in their own learning and such learning is initiated by the activation of critical, reflective thinking (Dewey, 1933). And according to Claxton (1999, p. 121-133) one does not learn to think critically and reflectively through instruction or teaching but being placed in situations "where one cannot else but think critically and reflectively." Thinking critically and reflectively presupposes that there is a problem to be solved. Slabbert (2007, p. 5) supports the importance of solving problems by stating:

> solving problems not only gives meaning to life, but it also develops our authentic wholeness: Yet it is in this whole process of meeting and solving problems that life has its meaning. … Problems call forth our courage and our wisdom. It is only because of problems that we grow mentally and spiritually (Slabbert, 2007, p. 5)

For student teachers to learn about teaching they need to experience it directly. Dreyden & Vos (1999, p. 26) support this "Use the real world as your classroom, and to learn it, do it". Clearly, this sets an ultimatum for teacher education to develop good quality education practice – student teachers have to do it in the actual classrooms that they will be teaching. This ultimatum is supported on three accounts: neuroscientifically, psychologically and practically (Slabbert, 2007). Neuroscientifically, on the basis that practical know-how (how/practice) and rational knowledge (what/theory) are located in completely different areas of the brain. It is through the direct immersion in experience – the natural learning ability of the brain – that practical know-how is developed to construct meaningful rational knowledge, which is specific to particular contexts (Slabbert, 2007; Claxton, 1999). The psychological support focuses on the crucial importance of the learning environment to enable the learner to utilise what she/he has constructed to "subsequently do something creatively new." (Slabbert, 2007, p. 5). If the learning environment is so remote from the real context then Claxton (1999, p. 209) concludes, "no [learning] will take place". Lastly, the practical support focuses on the holistic nature of the problems that we experience in real life, which itself is holistic. Working with these problems requires the "engagement of all human faculties to solve it to encounter our interconnected wholeness" (Slabbert, 2007, p. 5; Clark, 1997; Flake, 2002). It is clear that for quality education practice to be achieved, teacher education must be based on real life problems in realistic teaching contexts.

Conclusion

"Although everyone agrees that teachers are the most critical element in determining the quality of a nation's educational system, there is much disagreement about …. the preparation and support" that they require during their preparation for teaching (Zeichner, 2005, p. 1). In the global teacher education arena, the traditional aim is to have student teachers learn knowledge constructed by experts (resulting from psychological, sociological, and educational research) and then use this expertise in their practice (Slabbert, 2003). But this technical-rationality approach (Schon, 1983) to student teacher education "leads teacher educators to make *a priori* choices about the theory that should be transmitted to student teachers" (Korthagen, 2001b, p. 255). Unfortunately, "research has shown that this approach has very limited effect on practice" (Korthagen, 2001b, p. 255). In fact, it

simply perpetuates the ever-increasing theory–practice divide teacher education has been plagued with from the outset. According to Kessles & Korthagen (2001, p. 24) what teacher education needs is "not [a] scientific understanding (*episteme*), but practical wisdom (*phronesis*).

Acknowledgement

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