

Critical Thinking in Open and Distance Learning Programmes: Lessons from the University of South Africa's NPDE Programme

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ABSTRACT Teaching learners to be critical has become more important in education currently. Prospective employers and institutions of higher learning expect learners to be able to transfer learning to various situations. This study sought to investigate the utilisation of critical thinking skills in distance education. It was a qualitative study that explored experiences of teachers who were registered at the University of South Africa's National Professional Diploma in Education (NPDE) programme. Interviews and observations were used to collect data. It was discovered that teacher education programmes should be the breeding place for critical teachers. The major implication was that without a methodical preparation of teachers, countries will struggle having critical learners.

INTRODUCTION AND BACKGROUND

Pascarella and Umbach (2012) point out that one particular goal of higher education is the development of critical thinking skills. Rowles et al. (2013) also concur that the fostering of critical thinking has become an expectation of many current faculty in higher education. Furthermore, they point out that it matters how teaching staff defines critical thinking because it has an effect on how they will address the challenge to promote it. Students who frequently report on their positive empowerment are those who are critical thinkers. In a country where examiners are usually concerned with student cheating in examinations, it will help if examinations test critical thinking rather than rote learning or memory recall. Teacher training programmes need to stress critical thinking because it is through empowered teachers that society can have critical learners in schools. Duran and Sendag (2012) opine that critical thinking is based on relating and drawing conclusions on notions and events. Furthermore, these authors say it involves different cognitive processes such as implicating problem solving, reflecting and criticising. All these are skills necessary to live in today's world. Duran and Sendag (2012: 241) aver:

Thinking begins with a physical or psychological inconvenience stemming from lacking the solution for a problem whose solution becomes the objective for an individual. Higher order thinking skills, like critical thinking and problem solving are considered necessary skills for 21st century individuals.

All education institutions should be using these skills. Learners need higher order thinking skills if education is to make any sense. Shannon and Bennett (2012) cite a number of authors who observed that critical thinking evolves with the following stages:

- ♦ Apply - The students use knowledge and understanding to complete a practical task;
- ♦ Analyse - While working on a practical task, the students break things down into their component parts;
- ♦ Synthesise - The students then will be able to combine and integrate various sources of information; and
- ♦ Evaluate - At the end of the task completion, the students will be able to assess the value, merit or worth of something.

All these are aspects that were part of the programme under study. This article looks at how a teacher in-service programme, The National Professional Diploma in Education (NPDE) attempted to apply the notions of critical thinking. The article is first part of preliminary study that is followed by an empirical study that tested the NPDE's students' actual experiences in the programme. The main question posed in this study was: How did the classrooms of NPDE graduates experience critical thinking?

The secondary questions were:

What were the special experiences of the teachers?

Objectives of the Study

This study seeks to investigate the role of critical thinking in one programme that was of-

ferred by the University of South Africa's School of Education between 2001 to 2008. The paper wants to:

- ♦ Investigate the role of critical thinking in the NPDE programme;
- ♦ Examine how the teacher-learners in the programme experienced this critical thinking approach;
- ♦ Explore how module coordinators can infuse critical learning in their learning areas; and
- ♦ Investigate how module coordinators (the lecturers) in the programmes can build an effective assessment.

Literature Review

The Post-apartheid Education in South Africa

Many associations of higher education describe critical thinking as one of the major intellectual skills that should be fostered by post-secondary education. Among the qualities included in critical thinking are inquisitiveness, self-confidence, ability to reason, open-mindedness, flexibility and desire to be well-informed (Rowles et al. 2013). Grosser and Nel (2013) also argue that critical thinking demands abstract and logical thinking. Much literature recently highlights the importance of empowering the learners in schools by developing their critical thinking skills (Boostrom 2005; Beyer 1997; Hartjen 1994). The post-apartheid education in South Africa states it clearly that the learner needs to be equipped through education. The education policy documents postulate that learners need to be:

- ♦ Confident and independent
- ♦ Literate, numerate and multi-skilled
- ♦ Compassionate, with respect for the environment and an ability to participate in society as a critical and active citizen.

With this emphasis on empowerment of the learners, it is clear that policy makers see education as a means of transforming the society. The latter is positive considering the struggles waged in South Africa to attain a democratic state that would open up opportunities of education for all. However, there are challenges faced by the country and these include teacher education. Arguably, people cannot talk of empowered learners when their teachers are not. As countries in the sub-Saharan Africa are trying to im-

prove retention of learners in basic education, teacher education needs to be improved together with the quality of education. Verspoor (2008:29) argues:

The classroom is where inputs are transformed into learning. Without a competent teacher no curriculum can be implemented effectively. In sub-Saharan Africa, improving teaching practice will require changes in the traditional rote learning methods that still dominate the vast majority of classrooms. Efforts to shift instructional practice towards open ended approaches, such as child-centred, activity-oriented teaching, have been difficult to implement throughout the world.

The post-apartheid curriculum poses challenges to teachers and learners alike. Sometimes with no resources at home, no parental guidance and uninviting classrooms the majority of learners (especially from historically black African schools) do not find education purposeful. Teachers on the other hand might feel ill-prepared for the new constructivist approaches and teach the way in which they were taught. Even before the post-apartheid curriculum was implemented in 1998 there were critics who were sceptical about its success. Jansen (1997) commented that the move to adopt a new system was a huge shift which would not be accomplished by under-prepared teachers. Furthermore, Jansen (1997:20) states, "there is every reason to believe that this paradigm shift in teaching and learning will not happen...it makes erroneous assumptions about what kinds of teachers exist in the education system. To make a shift requires highly competent teachers with sophisticated curricular, pedagogical and assessment skills."

Hofmeyr (1997) highlights the results of the 1996 National Teacher Education Audit. Among the findings of this audit were:

- ♦ The teacher education field is fragmented with teacher education institutions operating largely in isolation from one another. The field lacks a national vision and purpose and its critical role in national reconstruction and development is in general poorly understood.
- ♦ High quality, more resource-based, open learning with meaningful student support suggests a promising alternative to the traditional contact/residential approach to teacher education. Unfortunately, only a few institutions are providing this. Instead most

are adopting a correspondence model without student support which allows low-cost provision and improves their financial viability. As a result, good teacher education is rapidly being driven out of existence by poor teacher education as more institutions turn to correspondence education.

Some of the challenges highlighted in this 1996 audit persist. For example the professional mission of teacher education institutions is subverted by students who have no intention to teach but want an affordable route to higher education qualification (Hofmeyr 1997). Therefore, there are a number of factors that have an impact on teacher quality. Among the crucial aspects needed after 1998 was to ensure that teachers become effective managers of change. Yet, from literature that came out after the implementation of post-apartheid Outcomes-based education (OBE) - it became clear that teachers were not ready to implement the curriculum. More the 15 years later one would have expected that the past challenges are now aspects of the past. However, despite the small pockets of success, there is still a majority of educators who struggle with the paradigm shift; moving from previous education system to the current system.

With criticisms levelled on education all the time one would wonder whether teacher quality can change. Moreover, given the international experiences on teacher education which model have potential for the South African education system. This paper looks at one teacher education programme's attempt to support the growth of teachers who are critical thinkers. South Africa needs a strong teaching corps that is competent to support the ideals of the post-apartheid curriculum. The NPDE is no longer in existence at the University of South Africa although countrywide other universities still offer it to underqualified and unqualified teachers. It was an important aspect in supporting practising teachers. Craig and Perraton (2008) declare that initial teacher training alone is not enough for achieving good quality and teaching. Furthermore Craig and Perraton (2008: 91) posit:

Education is changing rapidly and teachers need to keep pace with changes so there is pressure from governments, and from the teaching profession itself, for updating. As more teachers gain initial qualifications, so the focus of governments has tended to shift towards the improvement of quality. At the same time

lifelong learning in many professions, including teaching, is seen as a necessity for economic development in the competitive global economy.

One of the qualifications that have proved crucial in South African education is the Advance Certificate in Education – School management and Leadership (ACE-SML). The current Advanced Certificate in Education – School Management and Leadership (ACE-SML) programme which has just recently introduced by the Department of Education in South Africa could be regarded as a necessary programme that has the potential to enhance the principals' practice in schools. This programme is currently being piloted and informal interviews with the participants already reflect its potential. The ACE-SML is a practice-based part-time programme of study that is aimed at providing management and leadership support through a variety of interactive programmes that improve the students' practice, professional growth and ethos of leadership (Mestry and Singh 2007). The programme equips school managers as they constantly learn about various themes in leadership and management. The national Department of Education (DoE) has recently pronounced the need to halt all other ACE programmes because teachers tended to do these for mere paper chasing. Below, the focus is on the NPDE programme at Unisa and showing how it endeavoured to introduce critical thinking among its students.

The Necessity of the National Professional Diploma in Education (NPDE)

However, one of the programmes that has helped in the enhancement of teacher education in HEIs has been the National Professional Diploma in Education (NPDE). The qualification is meant for underqualified educators whose qualifications fall below matric and two years of training. There is no exact number as to how many unqualified and under qualified teachers South Africa has. However, evidence is out there that there are still many teachers who need to upgrade their qualifications. One institution in this article will be highlighted as an example of an institution whose NPDE distance education has played a crucial role in improving the teachers' expertise in the classrooms. The challenges encountered by many teachers during the intro-

duction of OBE were due to the fact that many teachers were not updating their knowledge; teachers have to be lifelong learners as the new system requires. Among the roles expected of teachers in the new curriculum is for them to be scholars, researchers and lifelong learners (DoE 2002).

Initial teacher education only is not enough when one looks at the rapid changes happening today. Teachers who are in effective upgrading programmes stand a better chance of being able to cope with the changes in education. The organisation of a number of distance education programmes are tailored in such a way that they meet the current demands of ensuring that teachers do get the necessary knowledge in the new South African curriculum. Whilst it is difficult to find an accurate estimate of teachers who still need to be upgraded in South Africa, there appears to be consensus that there are still enormous numbers of unqualified teachers. In 2001 there were about 76 000 teachers who had less than three years professional training (Mays 2002). In 2004 it was said that there were 58 000 teachers (News 24 2004).

In 2009 the new higher education minister, Nzimande was quoted as saying that there is still a huge number of unqualified teachers. Nzimande said:

There is a big challenge with teacher education. One, we are looking at teaching rates, in terms of the quality of the teachers, and therefore one of the issues we want to tackle is the issue of opening up teacher colleges in order to improve the quality of teaching and learning. I think we have to deal with the issues of quality learning at school level before we can have access to higher learning.

It is clear then that the numbers of unqualified teachers have not dropped immensely hence the need to open opportunities for training more teachers. In the above interview the minister was also concerned by the fact that the curriculum of many teacher education programmes was not relevant to the South African reality. The debate on opening of colleges is an attempt to address that relevance. There have also been concerns that the learning of indigenous languages for primary school teachers is waning. The opening of teacher colleges might open opportunities for teachers who want to teach in the Foundation Phase. As reforms are intensified in education there needs to be the raising of quality in open

and distance education for teachers who are in the employ of the Department of Education. More often distance education for teachers has become the responsibility of universities (Craig and Perraton 2008). Effective open and distance education can enable schools to work closely with higher education institutions. The NPDE is one programme that has helped many teachers as they upgraded their qualifications.

The NPDE programme has served teachers who have standard eight/grade 10 qualification and some teaching experience. Some teacher-learners in the programme had standard 10 / grade 12 qualification and less than two years teaching qualification. The programme is a 240 credit programme that aims to improve teaching practice. Educators who are REQV 11 or REQV 12 go through the programme designed to upgrade them to REQV 13. The programme makes use of mixed mode delivery which includes: Tutorial letters, Contact sessions, Study guides, Use of information communication technology

The nature of the programme and the way in which the curriculum has been developed as well as the requirements for effective implementation have challenged established thinking regarding the professional development of classroom-based educators (Mothata et al. 2003). The manner in which the programme is delivered is amenable to open learning. Mays (2004) writes about how distance education has developed over a number of "generations". Mays states that the first generation was the correspondence-mailing system then came the self study material, the third generation after this was the print and multi-media and two way communication. This emphasised teams/learner support. The fourth was the development of information and communications technology and two way interaction – social learning. The last generation consists of the current communities of learning which encompasses multi-skilling and decentralised decision making.

The upper generations display what quality distance education should be like. Snell et al. (1987) point out that there is necessity to move beyond the first generation definition. This definition shows an educational approach with roots in the transmission and regularization of knowledge. These writers maintain that there is necessity for an open learning system with roots in the individuals' creation of their meaning and understanding. The problem with the traditional

definition of distance education is that it reflected a hierarchical image of society and those who have power are regulators of knowledge. Mixed mode delivery of the programme ensured that problems that could not be picked up in the assignments could be addressed during contact sessions. The main goals of the mixed mode delivery of this specific NPDE programme include the following:

- ♦ Learning styles for quality and flexible delivery within various learning contexts drawn from the teachers' experience;
- ♦ The utilisation of teacher-learners' experiences ensures that lifelong learning is developed and sustained;
- ♦ The flexible teaching strategies accommodate learner-centred approaches. Many model how teachers should teach their own learners;
- ♦ The diverse delivery systems also ensure that the majority of the learners will be able to deal with course material.

Programmes such as the NPDE have enabled the country to invest in more human capital. Alotaibi (2013) contends that it is possible to promote critical thinking at universities especially when faculty uses blended e-learning. Alotaibi (2013: 176) describes blended e-learning as "one of the modern educational approaches that relies on the use of information technology in designing new educational contexts which increase active learning strategies and learner-centred strategies". Below, the focus is on methodology used to collect the data.

RESEARCH METHODOLOGY

The study was a qualitative study which consisted of interviews and observations. Purposive sampling was used to select 18 teachers who had completed the NPDE programme between 2004 and 2007. The participants were based in two provinces Mpumalanga and Gauteng provinces of South Africa. Eleven participants were females and seven were males. Of these, 18 came from Mpumalanga Province. All the participants were interviewed for a minimum of 55 minutes at the beginning of the study. The researcher used semi-structured questions for each of the candidates. Apart from the in-depth interviews the researcher observed at least two lessons for each participant. In each observation the researcher was a non-participant observer. Dur-

ing observations the researcher used an observation schedule to guide his observations. Aspects looked into by the researcher included the following:

- ♦ The use of critical thinking in lesson delivery;
- ♦ Proof of critical reflection in lesson planning;
- ♦ The kind of activities that the teacher promotes in the classroom;
- ♦ The roles of the teacher and the learners in the classroom; and
- ♦ Looking at forms of assessment the teacher uses.

All the interviews were transcribed and each interviewee given the copy to read and approve. The observations were also recorded for each of the 18 participants. For observations teachers selected classrooms in which they wanted to be observed in. Classes observed were as illustrated in Table 1.

Table 1: The number of teachers and classes observed

7 teachers	Foundation phase	Grade 1-3
5 teachers	Pre-primary phase	Grade R
4 teachers	Intermediate phase	Grade 4-7
2 teachers	Further Education and Training (FET) phase	Grade 11-12

Convenience sampling was used in selecting the participants in this study. Using a list from the University of South Africa's past students the researcher selected 24 participants. Of these two could not be traced in their previous known schools and four declined participation. The study spanned over 8 months.

RESULTS AND DISCUSSION

The Mode of Teaching and Critical Thinking

The participants pointed out that the need to sometimes let the classes to be learner-centred is very crucial and a number of the interviewees referred to this as the cornerstone of preparing a critical classroom. The participants stated that the NPDE programme tutors modelled teaching that should be happening in classrooms. The facilitators ensured that during contact sessions the classes were more student-centred. This enabled them to drive the direction of the lessons. This also made them to be

aware of their critical thinking skills in the classrooms. As a result of this they had also become aware of the need to guide learner-centred classrooms. All the participants emphasised that even the way in which the study material was prepared, it was clear that it required students who were critically thinking about their work. It was clear that rote learning was discouraged in the programme hence the facilitators expected the students to apply knowledge all the time.

The skills modelled in the NPDE programme was practised by all the participants. Five of these participants though also stated that although from time to time their lessons would be teacher-centred, this was necessitated by the huge numbers. However, they pointed out that they tried to foster learner-centred classrooms for effective learning. During observations all of them tried hard to involve the learners. There was only one teacher who pointed out that because of large foundation phase numbers in her school - she found it difficult to practice learner-centred classrooms for long. She stated,

I am aware of the best practices I learnt in the NPDE but my reality is different. It would take me a long time if I do not lead teacher-centred classrooms. I have always found it challenging to teach learners centred approaches because of the numbers.

Yet many participants used the learner-centred approach well. Even one in Mpumalanga who had a full classroom; it was difficult for her to move in between the narrow desk rows but she still tried to engage learners for participation.

Some Novel Strategies

All the participants pointed out that what they learnt from the NPDE programme was new ways of looking at teaching. Linked to the above mode of teaching the participants talked about how they were made to see teaching from various angles including being critical of their own teaching. The participants listed a number of aspects that are making a huge difference in their teaching and among these were the following common aspects:

- ♦ Projects where the learners are allowed to display their creativity;
- ♦ Using effective group work where all learners learn;

- ♦ Application of knowledge from classroom; and
- ♦ Totally curbing rote learning.

During observations the above came up used by the participants in their classrooms. Fourteen of the participants clearly stated that they started using many of the various strategies after having been in the NPDE programme. The learner-centred approaches mentioned above were facilitated through learner-led projects. Group work was also a vital part of classroom teaching where the teachers tried to maximise group work. During group work the participants tried to ensure that the learners had a chance to express themselves before other group members. Contributions supported the mode of critical thinking among the learners who were able to critically look at the others' contributions. The discussions also allowed the learners to apply content learnt to other daily life. The application of content to real life situations ensured that the learners curbed rote learning for the examinations. Many enjoyed lessons in the observed classes and accepted teacher assessment in a positive light, seeing it as part of their development. Linked to this were the assessment strategies used in the classrooms.

Assessment as an Intellectually Stimulating Practice

One of the major practices that made teachers registered in UNISA's NPDE to relook at their classroom practice was assessment. Even the summative assessment in the programme was open book. Students were allowed to bring as many books as they liked to the examination room. This showed them that examination was not about rote learning but understanding and application. Although all the participants were not giving their learners open book examinations, they concurred that they emphasised critical application of knowledge. In fact, a number of participants highlighted that the forms of assessment they introduced minimised negative competition and made the learners to want to work together in solving problems in class. This also made them to not only work as individuals but value the work of groups in finding solutions. The learners also tended to engage in their peers answers as they tried to find the answers.

During observations the researcher looked at a few learners work and found that the teach-

ers' comments in the learners' books was supportive and promoting critical thinking skills. Many comments showed that the teachers would like their learners to apply knowledge in everyday situations. Some of the participants pointed out that the NPDE assessment made them to be able to look at assessment as a totality, as an aspect that includes a number of things. One said that sometimes when assessing the learners "you find that they bring points you never thought about. Many of these are brilliant and need to be acknowledged and accredited. This is the kind of assessment I learnt in the programme. We discussed many of these with our lecturers and fellow students during contact sessions." The participants were all trying to view assessment "as a progressive area that propelled critical learning."

In the field the researcher gathered that many of the teachers had satisfactory practice. While the researcher was not certain whether all the positive aspects could be credited to the NPDE programme, the participants were sure. In fact, only three of the 18 were attending regular workshops before, during and after NPDE programme. Moreover, four of these teachers were still not certain when to introduce learner centred and teacher-centred approaches. Three participants also stated that assessment of learners still baffled them. They said it was an area they still needed to improve. However, it was clear that for many learners learning was becoming a critical engagement that enriched their learning. Below, the focus is on the analysis of these results.

Education, Schools and Critical Thinking

The post-apartheid system of education requires learners who are critical thinkers. In this study the teachers used critical thinking to build the new learner. There are so many challenges in teaching that can make teachers forget about the learning aspect. Lujan and DiCarlo (2006:17) contend:

Teaching is not telling students what we know but showing students how we learn. Learning is not committing a set of facts to memory, but the ability to use resources to find, evaluate, and apply information. However, the curriculum is packed with so much content that, to "cover the content", teachers resort to telling students what they know and students commit facts to memory.

In contrast to the telling methods of teacher centred approaches, the critical thinker wants to instil a sense of understanding among learners as seen in this study.

The NPDE programme helped in the development of the teachers' critical thinking. In turn, this was transferred to the learners. In fact, Yang (2012) argues that in order to foster critical thinking in learners, it is necessary to first nurture the teachers' critical thinking. The combination of aspects such as assessment, critical reflection, all factors learnt in the NPDE helped in enhancing the teachers' skills in teaching. Fostering critical thinking is about the teachers' belief systems. "The influence of teacher belief and teacher experience in developing the ability to conduct critical thinking integrated instruction is profound, particularly given the diversity of student ability levels..." (Yang 2012: 117).

Chew (2013) argues that the goal of education should not be to get good grades; facilitators need to assist learners cultivate a habit of lifelong learning. This is the basis of critical thinking and attainment of knowledge. Furthermore, Chew states that every learner deserves the teachers' best efforts to help learners relate their learning to the real world. The learners should always be engaged in critical thinking. The NPDE's material emphasised this aspect and this is reflected in the classes observed. The teachers observed showed an expectation to see the learners reflect and apply the classroom knowledge. Conway and Yetman (2013) also emphasise the need to teach for a sense of knowing. The latter is different from teaching to memorise facts.

Conway and Yetman (2013) suggest that there are four essential shifts that must occur in order to teach for a sense of knowing and these are:

- a) A focus on covering decontextualised knowledge to an emphasis on teaching a sense of salience, situated cognition and action in particular situations;
- b) A move towards integration of classroom teaching;
- c) A shift towards multiple ways of thinking that include reasoning and critical thinking; and
- d) A move from emphasis on socialisation to an emphasis on formation.

These two authors perceive the above phases as being necessary to facilitate the sense of knowing. They find it necessary for a shift to

happen before critical approaches can take place. It was also one of the basic requirements in the NPDE programme; to ensure that teachers attain a paradigm shift as they replace traditional approaches. This shift was evident in the classes observed.

Shelley (2009) writes about the closeness between the Socratic Method and critical thinking. This Socratic method of questioning designed to help learners acquire, develop and retain knowledge through guidance rather than lecture. Shelley also argues about how group work prepares learners to the inevitability of collaboration in all aspects of adult life and specifically in the workplace. The teachers in the study found group work as a means of augmenting critical thinking skills. Group work helps elicit important factors for critical thinking and these are analysis, explanation, interpretation and self-regulation. All of these are what Facione (2013) refers to as core critical thinking skills. Crucial here is the transfer of learning.

Transfer of Learning

One of the important cornerstones of critical thinking is for the learners to be able to understand and then transfer skills. For learners to be able to transfer skills, they should first comprehend the subject. Lujan and DiCarlo (2006) emphasise that we must help learners become more active, independent learners and problem solvers, because active processing of information and not just passive reception of that information leads to learning. The participants in the study explained that it was in the NPDE programme that they learnt about the application and transfer of learning.

Transferring learning is easy when active learning strategies are employed. Active learning strategies reach all types of learners in visual, auditory, read/write, kinaesthetic and tactile schemes (Lujan and DiCarlo 2006). Facione (2013:10) also argues:

The experts are persuaded that critical thinking is a pervasive and purposeful human phenomenon. The ideal critical thinker can be characterised not merely by her or his cognitive skills but also by how she or he approaches life and living in general. This is a bold claim. Critical thinking goes way beyond the classroom.

Again, the expertise of the teacher is crucial in enhancing transfer of learning. There is a close connection between transfer of learning and problem solving. Yang (2012) points out that there is a link between critical thinking teacher training with classroom outcomes. Furthermore, Yang contends that there are three important features in the transfer of learning; *task features*, *learner features* and *organisational features*. All these have an impact on the transfer of learning. Task features have to do with the similarity of the learning task and target behaviour as well as opportunity for practice. Learner features include attitudes and dispositions. Organisational features include the design of teacher training programmes and relationships among teacher education programmes.

Teacher Growth and Critical Thinking

Mohammadi et al. (2013) point out that educators should respond to the following questions: What should be learned? How to learn? Why to learn? These authors state that educators should put more emphasis on self-judgment and self-controlling issues. The latter is the basis of teaching children to be critical thinkers. Teachers must be aware of their professional growth as thinkers otherwise they will not be able to nurture thinkers. Mohammadi (2013:654-655) postulate, “teachers need to rethink about their role again focusing on their own activities on training skills because this leads to nurture students’ critical thinking way”. Critical thinking in classrooms depends on teacher readiness and professional accomplishment. A teacher needs to have attained best practices.

Pascarella and Blaich (2012) mention effective instruction as key to problem solving among learners. Effective instruction will be practiced by effective teachers who will foster intellectual skills and orientations. Abu-Babat (2013) states that in education there need to be the training skill that develops the capacity of individuals and contribute to solving the problems they face thus leading to the progress of the nation. Effective, well-prepared teachers will be good for this purpose. The quality of education is largely determined by the quality of the educators. Conscientious teachers will be reflective as was emphasised in the NPDE programme. Ahmad et al. (2013) point out that reflectivity increases the abilities of the teachers to plan, organise, criti-

cally think, observe and create. "It enables teachers to learn new and variety strategies of teaching and learning in the process of education" (Ahmad 2013:73).

Ahmad et al. (2013) write about a need for teachers to develop over their career span. These authors also identify six phases of the teachers' reflective growth namely, novice, apprentice, professional, expert, distinguished and evaluative. It may be necessary to ensure that teacher moves through these phases to attain their roles as reflective practitioners who employ critical thinking skills. These teachers grow and tend to perceive teaching as a critical process. The NPDE programme ensured that teachers learnt the needs of the learners. In fact, even the mode of delivery by lecturers (during contact sessions) was such that the lecturers modelled what teachers needed to do in their classrooms. Self-observation, self-reflection and being critical of oneself at all times was emphasised by the teaching methods. The interactive exercises ensured that as teacher learners engaged with the materials they were also able to criticise themselves.

Other authors emphasise that for teacher growth to flourish there needs to be both reflection as well as reflexivity. Both were central aspects of the NPDE programme. Claris (2013:117) postulates:

In this light, I want to suggest that critical thinking need to cover both reflective and reflexive. 'Reflective' in the sense of deep thought about something, and 'reflexive' in the dictionary meaning of the term as taking account of oneself. This includes seeing the effects that one's thinking has both within and outside oneself. These two kinds of looking within are very connected because reflection is necessary for reflexivity.

These are qualities necessary for critical thinking skills. Teachers with certain qualities can facilitate classes that entrench these necessary lifelong skills among learners. However, teachers need to prepare themselves for this purpose. All learners irrespective of grade they are in need teachers who can foster critical learning.

CONCLUSION

This paper has shown the important role of teacher education in empowering teachers to value critical thinking in their teaching. The cur-

rent schools have to nurture lifelong learners who will be critical in the world in which they live in. The experience of the teachers also illustrates that critical thinking nurturing can be learnt. Effective teacher education programmes should be where teachers of all subjects are shown strategies of supporting learners. The role of the facilitators is very important in this regard. The strength of the NPDE programme was in that the programme facilitators modelled the change they wanted to see in classrooms. The open book examinations were also a clear indication to teacher-learners that it is the application of learning rather than rote learning that is more important in any learning. Below, recommendations drawn after the study are delineated.

RECOMMENDATIONS

Three recommendations are drawn in respect to this study. Firstly, all teacher education needs to teach teachers the importance of entrenching critical thinking. Teacher education programmes usually stress the need for teachers to ensure that learners pass the grades. This is indeed crucial, but ensuring that learners understand the content and are able to transfer learning to other situations is even more crucial. It will take well prepared teachers to be able to embrace this policy.

Secondly, learners should always be supported by teachers to apply knowledge in various situations. Usually teachers never bother to show learners the need to apply the knowledge gained in classrooms. This is the cornerstone of critical learning. History, health education and drama will only be important for student learning if they are applied in everyday life.

Finally, more research needs to be conducted in the area of critical thinking and critical learning. Many teachers from disadvantaged schools are trapped in the mode of teaching learners to pass the examinations, sometimes because of large numbers. More research needs to be explored as to how these teachers can be supported to ignite critical learning in their classrooms.

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