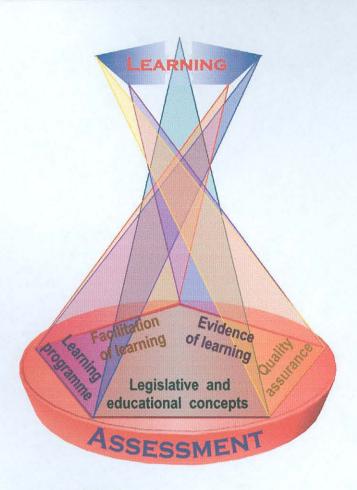


"The most incomprehensible thing about the world is that is it comprehensible."

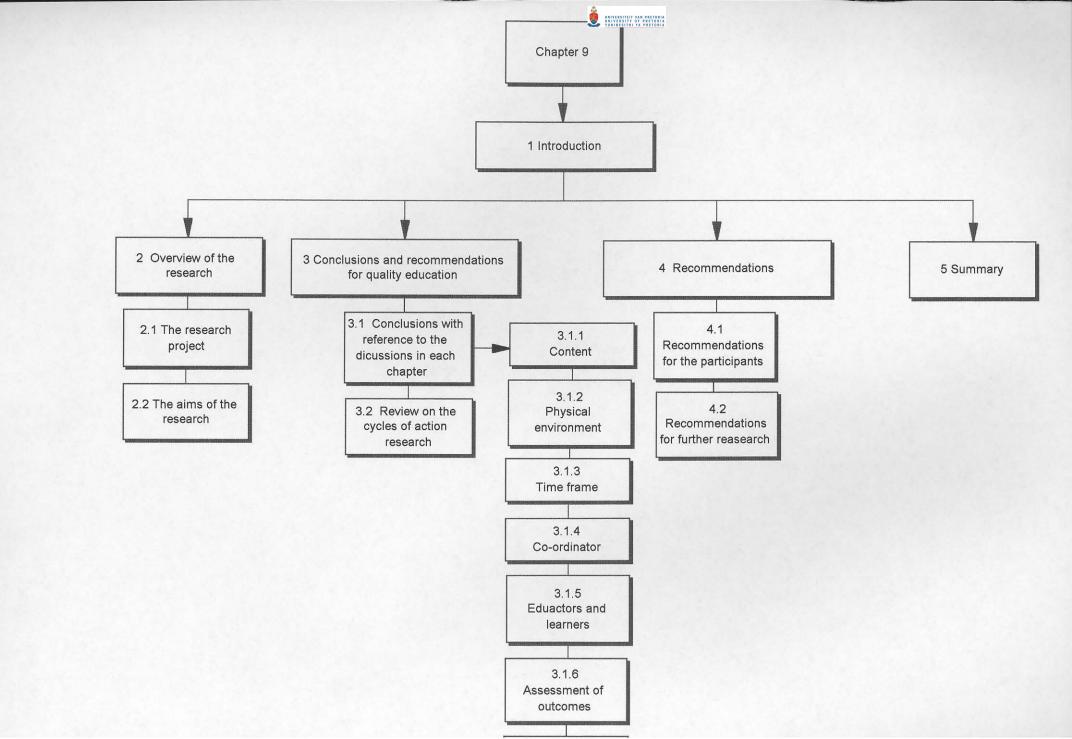
(Albert Einstein, 1879 - 1955)



This thesis is not a conventional thesis.

- It is about picking pebbles whilst knowing the ocean of truth is still before us ...
- It is about keeping the subject of inquiry constantly before us until the dawning opens into a full and clear light ...
- It is about believing the tree to bear fruit and the subjects of our imaginations to become real ...
- It is about taking a chance and making mistakes ...
- > It is about making the world a better place because it is comprehensible ...
- > It is about setting examples for others to follow and improve on ...

"Setting and example is not the main means of influencing others; it is the only means." (Albert Einstein, 1879 – 1955)





Chapter 9

Conclusions and recommendations

"The very thing I have fought all year and struggled against, the thing which I saw as willfulness, is really independence, and I have finally come to appreciate it. In fact, it is the thing I most treasure in people. I didn't recognise it in children so young because I did not expect to see it. I am a little disappointed in that ... I was teaching them as if they were mindless, when they knew what they needed better than I." Lynn Henderson (Spady, 1994:136)

1 Introduction

"The work of a school, classroom, or a whole education system is a product of history: the product of a set of struggles between real people, real ides, real ways of working and real ways of organising the work. But people are not just the pawns or *products* of history; through their struggle, they are also *producers* of history. Changing education is a matter of engaging in a struggle towards better educational ideas, better educational practices, and better social relationships and forms of organisation for education" (Kemmis & McTaggart, 1997:34).

At the moment all contributors to South African education are making history. Outcome-based education is not "new". A large number of South African educators have always been and already are silently involved in outcome-based learning (Van der Horst & McDonald, 1997:15). They just haven't had a name for it, but these educators have successfully delivered independent, creative, critical thinking and responsible learners. If the South African education and training system succeeds in delivering this kind of learners, we will have succeeded in the ultimate.

Educators are not working with mindless learners, but with learners who can take control of their own learning and be assessed against realistic authentic outcomes. This may change the education and training into a joyous experience for all stakeholders, delivering competent South Africans to contribute collaboratively and positively to the future of this country. This research was an open-minded effort to prove that there is a realistic solution for learners in outcome-based learning. If all stakeholders are willing to contribute to a sound and unified system of education and training, with a balanced perspective of essential knowledge and skills and performance outcomes, South Africa will develop into a competitive first world country, consider by all to be an exemplar of good education.

2 Overview of the research



2.1 The research project

Chapter 1 was a discussion on the rationale and the aims of this study, i.e. to determine the issues to consider in developing a better understanding, and an holistic overview of outcome-base learning in the South African context with special reference to an integrated and generic process of assessment of competence against the unit standard or qualification.

Chapter 2 argued the principles of the suitable research methodology. The researcher used both inductive and deductive logic with exploratory objectives, including both quantitative and qualitative principles in an action research methodology.

Although Chapter 3 seemed to be a document analysis it is the answer to the need of educators and learners to understand the foundation of the governmental policies and the educational philosophy of outcome-based education. If the stakeholders have knowledge about these, they suddenly seem to know "why?"

Chapter 4 introduced the design and development of the learning programme developed according to the requirements in Chapter 3.

Chapter 5 was a discussion of the facilitation of learning which is the implementation of the learning programme. During the facilitation of learning the learners developed a portfolio of evidence of their learning as described in Chapter 6.

Chapter 7 introduced the assessment of learning and Chapter 8 the quality assurance. To assess learning needed a portfolio of evidence; the portfolio of evidence was compiled during the facilitation of learning relying on the learning programme. To understand the design and development of the learning programme needed comprehension of unit standards and qualifications, embedded in the legislative structures.

2.2 The aims of this research

There are several stakeholders who are now involved in assessment in outcome-based education. The aim of this research was to develop a better understanding, and providing an holistic overview of outcome-based education in South African context with special reference to an integrated and generic process of assessment of competence against the unit standards or qualification.

The goals were achieved as follows [Chapter 1].

Change the content-based course material of the Further Diploma in Education (Computer-assisted Education) into an outcome-based education learning programme according to the legislative policies [Chapter 3, Chapter 4]



Chapter 3 is a document analysis of the legislative requirements and the current educational philosophy to support the educator to change the content-based course material into outcome-based learning programmes. Knowledge and understanding of these structures are essential to the educators' understanding of the "why?" and "how?" of the changes and contributing to positive attitudes on outcome-based education.

Use all the accredited educators and all the registered learners for the FDE(CAE) qualification to be actively involved in the design, development and presentation of the learning programme [Chapter 4, Chapter 5]

To design and develop a learning programme without implementation is theoretical. Although five learning programmes were developed, the NGT 471 module for the FDE(CAE) qualification was used as an example for the implementation of a learning programme. This was presented to all participants at the different venues in South Africa.

Collect the evidence of the learning [Chapter 6] and develop unique demonstration to calibrate and quality assure assessment of learning [Chapter 7, Chapter 8]

Each learner compiled a portfolio of evidence of learning that was assessed against the outcomes of the unit standard. From the results emerged a demonstration of calibrated assessment where a learner's performance was consistent across different assessment instruments and a variety of assessment activities. Quality assurance of the results may need more attention.

Record the input, reaction and output of all participants

As this thesis is not a conventional thesis, each chapter includes an integrated literature review in context of the allocated topic. This is followed by an explanatory application of the identified aspect to consider with reference to the contribution to assessment in outcome-based learning. It concludes with a discussion of the results.

> Evaluate assessment of learning in outcome-based education against the requirements to develop a better understanding and an holistic overview

This goal was achieved in the interpretation of the results of each chapter and will be elaborated on in the following section. All participants (educator and learner) have a better understanding of assessment in outcome-based education if they go through a process introducing them to an integrated and holistic view of what assessment entails.

3 Conclusions and recommendations for quality education

Most of the objections against an outcome-based education and training system come from misinformation and ignorance and the outcome-based education rod has become the lightning to all concerned. Instead of becoming informed citizens and ready for paradigm shifts, many South Africans prefer an ostrich approach of avoiding the changes rather than contributing to the benefits that the system entails for all life-long learners in the country. Their active involvement and participation is needed so that the value of different perspectives will eventually evolve in a quality education and training system that all learners will benefit from.



Action research tends to generate more questions than answers. Questions that arose during this study were:

- Who are we and where do we want to be?" [Chapter 1]
- "What will be different when this study is completed?" [Chapter 3, Chapter 4, Chapter 5, Chapter 6, Chapter 7, Chapter 8]
- "What is now understood that was less understandable before?" [Chapter 3, Chapter 4, Chapter 5, Chapter 6, Chapter 7, Chapter 8]

This thesis is a report on the successful planning and conducting of assessment within the outcomebased education, training and development system of South Africa and this chapter is the attempt to answer the questions:

- > "What impact should this project have?"
- > "What will be produced as a result?"

3.1 Conclusions with reference to the discussions in each chapter

3.1.1 The content

There is an alternative approach in the content to be learnt. Learners must be exposed to critical cross-field outcomes and specific outcomes that include knowledge, skills and attitudes on the higher levels of Bloom's taxonomy of cognitive skills [Chapter 3]. We are still far away from the integration of the legislative and educational concepts and requirements into a learning programme for the facilitation of learning [Chapter 4, Chapter 5]. Educators and learners found it difficult to interpret the unit standards or qualification as knowledge, skills and attitudes as opposed to a mere reproduction of content. If educators in South Africa want to become outcome-based learning facilitators they must realise that the knowledge is no longer the convergent reduction of the content of a textbook, but rather unlimited information to be constructed into useful skills and the development of divergent thinking skills and meta-cognitively involved learners [Chapter 3, Chapter 4, Chapter 5, Chapter 6, Chapter 7, Chapter 8].

Tests and examinations are now included as part of a process of assessment of learning that must be valid, reliable, authentic and current [Chapter 7, Chapter 8].

3.1.2 Physical environment

The physical environment is changing from a lecturing hall to real-life experiences. The more learners are going to be exposed to authentic problems, the better will they relate to the real world of the workplace of the future. The challenge of today is the enhancement of the physical environment by means of technology. This relates to the critical cross-field outcomes and learners can empower themselves to become responsible citizens [Chapter 3].

Assessment of learning must be workplace related and the learner must perform authentic tasks to be assessed against for competence [Chapter 4, Chapter 5, Chapter 6].



3.1.3 Timeframe

The ratio between lecturing hours and self-study is in favour of the latter [Chapter 5]. Learners must realise that they are becoming more and actively involved in their own learning. This means learners need to spend time to find information, communicate with others and organise themselves to become independent and life-long learners [Chapter 3, Chapter 5]. Learners cannot expect their peers or colleagues to replace them in this responsibility. The best learning happens when facing real life problems and real people and not in classrooms with know-all educators.

Outcome-based education needs a timeframe to change people's minds. The reflection in this research is that it took about two years of intensive planning and communication before the stakeholders accepted the challenge of change. Initially more time will be spent on training and preparation, but once this has been organised, the educator will have more time to facilitate learning than to do marking. Marking becomes a shared responsibility, if officials are not going to make it too complicated.

The change in approach from content-based learning to outcome-based learning will be time-consuming in the beginning. To most educators and learners the process involves acquiring new information and they will not only have to be exposed to in-service training activities to gain new knowledge about the context of the legislative and educational concepts, but also to alternative methodologies and to rethinking their strategies and input. Most of the present learning material that the educator has worked on for a long time will no longer be usable and new assessment procedures will have to be put into place. Only dedication and commitment will ensure success [Chapter 5, Chapter 6, Chapter 7].

Assessment of learning must be workplace related and the learner must perform more authentic tasks to be assessed against for competence.

3.1.4 The co-ordinator

There will always be somebody that will guide the educators and learners. These people must be well-informed and trained in the legislative policies, assessment requirements and the educational philosophies involving the change. A positive approach or attitude is sometimes more valuable than it is ever credited to be [Chapter 7].

3.1.5 Educators and learners

Chapter 1 refers to the revoltion in South African education because of the resistance to change. Kemmis & McTaggart (1997, 44) argue that "...'changing people' is extremely difficult to achieve – especially when the 'people' are treated as ... the objects of someone's plans for change – rather than as knowing subjects, willing and able to determine their own roles in the improvement process." Coetzee-Van Rooy (2002:124), Du Pré (2000:9), Goode & Thomen, (2001:198), Hay & Herselman (2001:138) and Van der Horst & McDonald (1997:6, 16) express the concern that many academics and parents feel overwhelmed by all this information as well as these changes and are also resistant to the changes required by SAQA [Chapter 3]. The attitude is one of 'if they ignore it, it will go away' (Pithouse, 2001:156). Even if it does disappear, alternative structures will have to be put into place to



cater for a more learner-centred and authentic learning environment [Chapter 5]. Resistance can often be related to ignorance, a lack of information, inadequate in-service training and a lack of critical debate on issues (Anon, 2002; Pithouse, 2001:155; Venter, 1998:4). One of the biggest areas of concern is the fact that workshop facilitators very often inform stakeholders and the community about outcome-based education in a non outcome-based education way, i.e. they do not practise what they preach (Pithouse, 2001:156).

The educators and learners must experience a liberation from past curriculum practices. After completing the qualification the educators and learners had a perception of the change in attitude towards outcome-based education and how it differs from past practices. It was remarkable to observe how the input in designing unit standards and learning programmes gave the stakeholders the freedom to design and develop their own learning programmes [Chapter 6, Chapter 7].

A deliberate effort to inform stakeholders about the realities of outcome-based education and assessment should be made [Chapter 7]. The following findings observed during the study could influence a clear understanding of assessment in outcome-based learning.

3.1.5.1 The paradigm of change

Major changes and rapid transformation in education with reference to the traditionally held notions of content-based teaching and learning as well as the use of technology have occurred all over the international arena over the past two decades (Dasher-Alston & Patton, 1998:11). However, people are resistant to change and are satisfied to be in equilibrium with their current situation (Van der Horst & McDonald, 1997:6). The trend to oppose an external factor that causes a change to the comfort zone is always to act in such a way as to return to the original comfort zone. However, as was indicated during the presentation of this course, once learners made that paradigm shift and accepted the change as a challenge, there were no limits to these learners' success stories and enthusiasm to contribute to the change (Nielsen 1997:286) [Chapter 5, Chapter 6].

Educators in South Africa are exposed to external judgements and views of persons such as a Head of Department, Principal and Departmental Subject Advisors. They are caught in such a paradigm of 'right and wrong', that they are afraid to do something differently because it 'will be wrong.' This includes the fear that they will not be allowed to do it differently or even to suggest doing anything different from the prescribed way of doing things because that will be unacceptable for the senior management (Informal lecture discussions in FDE(CAE), 1999 – 2002). Outcome-based education is just another approach to education and training. Once the educator becomes involved in the educational aspects of outcome-based education, they can stand back, look at themselves critically and ask: "How can I do this differently?" (Van der Horst & McDonald, 1997:118). If the educators achieve this stage, education becomes a joyous experience [Chapter 5, Chapter 7].



The aim of South African education authorities must be to achieve the outcome of a complete paradigm shift that will deliver competent and enthusiastic contributors to a better internationally competitive South African education and training population. This is only possible if the classroom educators of South Africa have the knowledge, expertise and motivation to do so (Van der Horst & McDonald, 1997:6).

3.1.5.2 The paradigm shift and the balance

Stakeholders of education in South Africa, academics as well as practitioners and trainers, parents and learners, will have to look at an alternative way of learning, without referring to the past as a political drawback within an educational environment. The challenge of the future is to integrate systems and to keep the balance. Van der Horst & McDonald (1997:16, 187) state that outcome-based education is "not to be regarded as the magical cure for all educational ills of the present and the past" and that "(w)hile schooling is about learning to think and solve problems, it is also about knowledge."

However, the change in South African education is not about changing existing structures, but about introducing new policies and the way in which this will be adopted as the future [Chapter 4, Chapter 5, Chapter 6, Chapter 7, Chapter 8]. Brennan & Shah (2000:38) state that "... quality assessment can provide an external legitimation for taking action to achieve it."

3.1.5.3 Lack of support

Educators are restricted in assessment procedures by institutional policies. The typical situation in South Africa in all the three bands GET, FET and HET, is that continuous assessment is regarded as scheduled formal test programmes through which the learner accumulates a year mark or predicate (Maistry, 2001:170). At the higher education institution where this research was conducted, a year mark is still required, and the learners still write an examination at the end of the semester or year. The final mark is calculated by fifty percent year mark and fifty percent examination mark. Pithouse (2001:157) states that "(W)e were not offered any support materials or concrete support strategies" and that the response to doubts about the system was "adapt or die."

3.1.5.4 Misinterpretation of information

Misinterpretation of information is a common denominator to many stakeholders. Informed bodies will have to structure information efforts to reach society, providers, teachers, learners and parents to become well-nformed about the real roots of the values of outcome-based education and training in South African context. The correct understanding of what is envisaged is crucial (Olivier, 2000:13; Rademeyer, 2002:7), and it is alarming that Pithouse (2001:154) reports with concern on in-service training workshops as inadequate, "poorly planned and facilitated."



Workshops facilitated by the researcher during the presentation of the FDE(CAE) qualification resulted in reactions like; "I have attended 40 hours of OBE training and now I understand it for the first time – this sounds exciting! Why has nobody explained it to us like this?"

Venter (1998:5) argues that as we are making history in South Africa, there will be grey areas where clarification is necessary, e.g. assessment of learning. Although outcome-based education has many positive features, not everything about it is good, and a balance between learning practices needs to be considered. After completing the qualification the educators perceived the change in the approach towards outcome-based education and how it differs from past practices [Chapter 6, Chapter 7].

3.1.5.5 Top-to-bottom instead of bottom-to-top approach

Why do instructors and departmental representatives not follow an outcome-based education and training approach when dealing with presenting information about these matters? Education and training practitioners are instructed in a top-to-bottom scenario of what they have to implement. If the education and training practitioners are exposed to finding information and getting cognitively involved, a more positive outcome will be achieved. Stakeholders get information from top-to-bottom without understanding the roots of the changes in education. If people understand the integrated legislative and educational model, they are much more adaptable and willing to make changes. Too little too late may become a crucial issue in South African education, but although the educators may be initially distracted, outcome-based education may ask for open-mindedness and flexibility that will make learning challenging and professionally rewarding.

3.1.5.6 The challenge

Never deny the weaknesses, but be pro-active and regard the development of the outcome-based education and training system in South Africa as dynamic and not static. This is a way in which quality assurance will become part of everyday life [Chapter 8].

One of the greatest weaknesses of our education system is, however, the fact that the educators of South Africa is unfamiliar with this change to outcome-based education because they were brought up and are familiar with a content-based system of education [Chapter 4, Chapter 5, Chapter 6, Chapter 7]. How does one change the minds of the educators to become actively involved life-long learners if they are not used to it? How will these educators be able to transfer these skills to the learners in South Africa if they are not willing to set the example?

3.1.6 Assessment of the outcomes

If the legislative policies and educational philosophies are well understood, the unit standard or qualification will be unambiguously clear. The well-designed learning programme is embedded in the unit standard or qualification that supports the facilitation of learning. The learner will have a clear indication of what is expected for the portfolio of evidence that is assessed against the specific outcomes. If quality assurance is executed according to the legislative requirements the assessment can be calibrated against learning outcomes in outcome-based education and training in South Africa [Chapter 7].



3.1.7 The Cultural diversity

A major problem is the way in which the content-based system of education accommodated the rote learning and reproduction of facts and knowledge without application and problem solving abilities *par excellence* in the black communities in South Africa (Goode & Thomen, 2001:195). Outcome-based education caters for all levels of society and the variety of educational contexts in South Africa with special reference to inequalities. The opportunity to structure learning programmes according to outcomes in contexts of social and cultural appreciation overrules the fixed authoritarian syllabus of the past.

3.2 Conclusions with reference to the integration of the research questions and the conclusion in each chapter

Table 148 is a summary of all the aspects to consider in assessment in outcome-based learning with reference to all the identified issues that contribute to implementation of assessment of outcomes. The first column displays the different chapters representing the issues to consider creating an integrated and holistic approach to assessment in outcome-based learning in South Africa. The first row displays the factors to consider on these issues as discussed in each chapter referring to the evaluation of assessment of learning.



Table 148: Conclusions with reference to the integration of the research questions and the conclusion in each chapter

	Content	Physical environment	Time-frame	Co-ordinator	Educators / learners	Assessment of outcomes	Learners with special needs	Cultural diversity
Legislative & educational concepts	The content is changed in context of the prescribed OBE requirements	Determine accessibility and equal opportunities for all learners	Determine the notional hours of learning as described in the unit standard	An informed person with reference to all requirements	Initially unaware educators and learners; after training better informed and more enthusiatic	Knowledge of legislative structures imperative; all learners can be successful	Clearly indicates the requirements to cater for these learners	Incorporated in policy; makes provision for cultural diversity
Learning programme	Developed in context of outcomes; learners could not interpret it	Did not always satisfy the needs prescribed in the learning programme	Learners did not understand the implication of notional hours, until explained	Incorrect assumptions about educators' prior knowledge and input	Initially an unawareness; after training a remarkable change	Interpretation of the learning programmes determined the assessment	There were no learners with special needs; but the learning programme provided	Learning programme provided for cultural diversity in terms of authentic tasks
Facilitation of learning	Initially very content-based; after training in 2002 the first signs of real understanding	Inadequate facilities at certain venues contributed to a waste of time	Notional hours of learning is an important factor to consider; little understanding until after training	Incorrect assumptions about educators' prior knowledge and input; improvement after training	It took a lot of training and explanation to change the minds of the educators and learners	Participants unfamiliar with a portfolio of evidence; after training improvement; unlimited	There were no learners with special needs; but the facilitation can accommodate them	All cultures were accommodated in authentic tasks; difficult to change behaviourist styles
Portfolio of evidence	Initially not appropriate; eventually outstanding	Accessibility to technology and storage became a problem	Did not complete ongoing; left until last moment	Incorrect assumptions; improvement after training	Uncertainty in beginning; improvement after training	Invalid and unreliable; improvement after training	Not applicable, but they can be accommodated	Very hard to change from rote learning to portfolio compilation
Assessment	Initially unacceptable; improvement after training until almost perfection	A lack of infrastructure by training practitioners influenced fair assessment	Notional hours is an acceptable indication for competence; assessment can be time- consuming	Well-prepared and trained for the assessment	More relaxed; learners preferred informal assessment	Regarded as fair and reliable; the majority preferred portfolio; rote learners experienced problems	Not applicable, but they can be accommodated	Major problem with cultural diversity is time and exposure to accept alternative ways of doing
Quality assurance	Improved by better communication	All learners to be exposed to the same infrastructure	Clear understanding of notional hours and time-frame is essential	To be well- informed, well- prepared and fully trained	Informative training to be done to guarantee success	Calibrated assessment of outcomes is possible	Learners with special needs can always be accommodated	Time and training are the major considerations



4 Recommendations

This thesis presented a possible solution to assessment of learning in outcome-based education. It does not so much try to defend outcome-based education but rather to present a way of working creatively within its constraints. In doing so a final question that needs an answer is:

What is now still not well understood after this research?

The result of this pilot study into issues to consider in assessing outcome-based learning in South African education is far from complete or perfect. Brennan & Shah (2000:75) support the idea that more research will have to be done to establish greater student participation in teaching and planning, development of teaching methods and assessment of learning nationally as well as internationally. Kiyosa (1999) adds that "(I)f you look at the way humans are designed to learn, we learn by making mistakes. We learn to walk by falling down. If we never fell down, we would never walk." If we learn from our mistakes we will do the following.

4.1 Recommendations for the participants

> Legislative and educational concepts of outcome-based education

All stakeholders in education, training and development must be well-informed about the governmental policies and the educational philosophies to understand the changes in South Africa towards outcome-based learning.

Learning programme

A learning programme can only be a useful document if written by the educator and within the understanding of the legislative requirements, e.g. embedded in the specific and critical cross-field outcomes of the unit standards or qualification. To achieve this, the stakeholders must be exposed to authentic in-service training.

Facilitation of learning

The facilitation of learning is a most exciting experience if it has a backbone a well-structured learning programme with authentic tasks. Educators can be creative and experiment with alternatives. However, there is a place for all learning styles as well as all educational theories embedded within an outcome-based education philosophy. To achieve this, the stakeholders must be exposed to authentic in-service training.

Evidence of learning: portfolio

The portfolio as the evidence of the process of learning is something that the learners become very proud of. To achieve this, the stakeholders must be exposed to authentic in-service training.

Assessment of learning

Assessment of learning is a very valuable alternative to traditional tests and examinations. To change people's minds will need authentic in-service training.



Quality assurance of assessment

The process of fair and reliable assessment is not easy and creates opportunities for in-depth research.

If stakeholders understand the rationale, and can contribute to the process in an authentic way, education and training in South Africa will only benefit from it.

4.2 Recommendations for further research

It has been stated that action research generates more questions than answers. The following may be regarded as further research opportunities.

- What are the issues to consider in assessing outcome-based learning in General / Further Educational and Training?
- What are the issues to consider in assessing outcome-based learning in big classes?
- Research on improvement of learners' performance over a period of time by continuous assessment practices
- Research on authentic assessment opportunities for all bands of the NQF (GET and FET and HET)
- Research on quality assurance of assessment of learning
- Research on a comparison between assessment policies / practices between different countries

New ideas are not enough to generate better education. Educational practices must also change to accommodate, develop and improve education through these new ideas. This thesis is an effort to try to contribute to the improvement of present educational practices in South African education to make them exiting and challenging.

The major question is still: A learner comes into a system of learning in 2002 and will exit the system in 2005. What will the world be like in 2005? Will this learner be prepared for the world in 2020 in a life-long learning scenario aimed at being a proud and productive South African.

There certainly remains much work to be done on the full implementation and maintenance of the new education policy in South Africa, at both conceptual and practical levels. This involves changing all the time, but it can become a cognitive exercise and learning experience through and about change.

Major change is often preceded by small innovations at a micro level (Beyleveld & Jama, 2002:129) – this is a micro level research on improvement of assessment in South African outcome-based education that may become a large scale change.



As a system outcome-based education and training strives for the success of all learners provided that appropriate teaching, learning and assessment approaches are employed (Mokhobo-Nomvete, 2000). This thesis reports on a suggested framework of the appropriate teaching and learning opportunities (the legislative and educational underpinning – Chapter 3, the content of the learning – Chapter 4, the learning programme – Chapter 5, the portfolio of evidence – Chapter 6) and the assessment approaches (the assessment – Chapter 7, the quality assurance – Chapter 8) to deliver successful learners that can contribute to the country to be competitive on a national and international level. To become a nation with educators and learners stretching their minds by new experiences and never going back to old dimensions …

"Everything has changed except our way of thinking" (Albert Einstein, 1879-1955) and therefore "(A) mind that is stretched by a new experience can never go back to its old dimensions." (Oliver Thomas, 2002)