

*"If I were asked to enumerate ten educational stupidities, the giving of grades would head the list ... (If I can't give a child a better reason for studying than a grade on a report card, I ought to lock my desk and go home and stay there."*  
 (Dorothy De Zouche, 2002)

## Chapter 8



I tried to give the learners a better reason for studying than a grade on a report card, and I do not have to lock my desk and go home ... unless I am sure that what they have done is quality assured. Finally I know that all of these preceding chapters contribute to the valid and reliable calibration of assessment of learning in the outcome-based learning paradigm in their own way ... where specific and critical cross-field outcomes can only exist if they were assessed and quality assured in context of the competence of the learner.

Chapter 8

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## CHAPTER 8

### Quality assurance

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*“Quality does not happen by accident. It requires commitment and constant attention from all those who are involved in the process.”*  
*(Sam Isaacs in Meyer, 2001:267)*

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#### 1 Introduction

The purpose of this study is 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 calibrated assessment of competencies against the national unit standards or qualification.

The preceding chapters in this report referred to the legislative and educational concepts of assessment, the composition of the learning programme for a qualification, the facilitation of learning, compilation of a portfolio of evidence and finally what assessment of learning entails. Chapter 8 addresses the last sub-question of the study, i.e.:

#### **What does the quality assurance for assessment of a registered qualification entail?**

In the past there was no systematic quality assurance system for Higher Education Institutions other than a form of self-evaluation and peer review mainly through moderation of external examiners and regular departmental reviews (Norms and Standards for Teacher Education, Training and Development, 1997:136).

The current principles underpinning the National Qualifications Framework carry the notions of quality and point to quality assurance practices, of which assessment of learning is an important part [Chapter 3, Chapter 7] (Mokhobo-Nomvete, 2000:7). Although the present situation of setting standards will not necessarily bring about quality assurance, it could be achieved by suitable quality assurance mechanisms (quality management systems, evaluation or assessment criteria and procedures), institutional commitment as well as the motivation of practitioners and managers in institutional, programme and individual self-evaluation (Norms and Standards for Teacher Education, Training and Development, 1997:135). These will be discussed in this chapter.

Quality assurance will not only play an important role within the transformation of education, training and development in South Africa, but also within the position of education in the international arena for international openness and student and staff mobility (Berkhout, 2000:59; Brennan & Shah, 2000:10,40). The fear that standards will drop will be overcome by the implementation of a quality assurance system in the present requirements for South African education, training and development (Meyer, 2001:268; Siebörger & Macintosh, 2001:70; Van der Horst & McDonald, 1997:17).

A quality assurance system for education, training and development will contribute to the following (Meyer, 2001:268-269):

- Better correlation between what is taught in academic institutions and the need of the work-place situation
- Qualifications to be recognised nationally and internationally
- No differences between qualifications obtained from different institutions
- Active participation of stakeholders to constantly deliver improvement in quality of performances of learners

This chapter elaborates on the legislative structures for quality assurance, the educational aspects and the evaluation of quality assurance in context of this study.

## 2 The legislative structures for quality assurance

### 2.1 Conceptualisation of quality assurance

Van der Horst & McDonald (1997:70) refer to “quality” as the “particular *effectiveness* or degree of *worth* of an object” and to “assurance” as “the act of *making certain* or sure, in fact guaranteeing the *effectiveness* of an object or a *practice*”. Nielsen (1997:300) and Siebörger & Macintosh (2001:71) describe quality assurance as a *process or system of ensuring a standard* of quality in an organisation that is *maintained* by internal measures designed to keep up the desired standard.

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Quality assurance is a process to ensure and maintain effectiveness of standards in practice.

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To implement quality assurance the following needs to be in place Siebörger & Macintosh (2001:75,76):

- A mission statement [Chapter 3]
- An assessment policy [Chapter 3, Chapter 7]
- Training of the educators and learners
  - The learning programme must be in touch with the learners’ needs [Chapter 4]
  - An effective facilitation of learning and compilation of evidence [Chapter 5, Chapter 6]
  - Quality of learner assessment systems [Chapter 7]
- Communication between stakeholders about the systems and requirements [Chapter 3]

### 2.2 SAQA and Quality Assurance

The discussion in this section elaborates on the mission statement and assessment policy of SAQA as referred to in Chapter 3.

The SAQA Act (South Africa, 1995) provides for life-long learning in outcome-based education. Quality is the core of outcome-based education where quality is described as (Norms and Standards for Teacher Education, Training and Development, 1997:137):

“Quality is maintaining and applying academic and educational standards, both in the sense of specific expectations and requirements that should be complied with and in the sense of excellence that should be aimed at. These expectations and ideals can differ from context to context, partly depending on the specific purposes pursued. Applying the principle of quality entails evaluating services and products against set standards, with a view to improvement, renewal or progress”.

Quality assurance is embedded in concepts like standards, criteria, competence and evidence and the NQF provides for a register of nationally agreed and internationally comparable standards [Chapter 3]. Quality assurance involves establishing and maintaining self-improving processes and systems in an institution or program (Norms and Standards for Teacher Education, Training and Development, 1997:137).

The objectives of SAQA to promote quality are standards as set by Standard Generating Bodies [Chapter 3, Chapter 4, Chapter 7] to determine the boundaries that guide the stakeholders and learners about the qualities, behaviours, values, attitudes, knowledge and skills expected from responsible citizens. The objectives are explained in Table 132 (Mokhobo-Nomvete, 2000:3; Meyer, 2001:271; SAQA, 2000).

**Table 132: The objectives of SAQA for quality assurance**

SAQA Objective	Description	Application in this study
<b>Integration</b>	Integration of theory and practice of knowledge, skills values and attitudes in qualifications	The SAQA objective of integration is achieved in the practical application of knowledge, skills and attitudes in authentic facilitation and assessment practices [Chapter 4 section 3.2.4.3, Chapter 5 section 3.1.1 and 3.3.1, Chapter 7 section 8.6]
<b>Learning outcomes</b>	Knowledge, skills, values and attitudes in qualifications as well as the level of acquisition must be clearly stated	Each learner had been provided with a unit standard that clearly stated the specific as well the critical cross-field outcomes, assessment criteria and range statements. Learners did not always understand the unit standard because they did not understand the context within the NQF requirements [Chapter 4 section 3.2.1, Chapter 7 section 8.6]
<b>Access, mobility and progression</b>	Horizontal and vertical articulation of qualifications are essential	Learners who were denied access to a qualification on a higher level of the NQF before, could do so now with this qualification, e.g. a learner with a four year HDE can now get access to a BEd degree
<b>Redress</b>	All learners must have access to qualifications to contribute to the improvement of the social-political-economic environment of all South Africans	The only pre-requisite for the qualification is a teachers' diploma and unlimited access to computer facilities.
<b>Personal and national development</b>	All individual learners must develop to contribute to the improvement of their own social-political-economic environment	The feedback received from the learners to this qualification referred to in the research can be summarised by the one learner who stated: “Wow, this course is a must for all teachers in South Africa!”

## 2.3 Moderating Bodies and providers in quality assurance

The main focus of quality assurance is to ensure that learners are awarded with nationally and internationally comparable NQF recognised standards and qualifications with the guarantee that these learners have achieved competence with regard to the assessment criteria in the standard or qualification.

The awarding bodies are responsible for the accrediting of assessment entities and for the verification of the quality of the assessment procedures. The system foresees a mechanism of appeal for those cases in which the learner does not agree with the result.

Quality assurance is a dynamic process including accountability, consistency and continuous improvement and can be represented as a process that entails the following (Brennan & Shah, 2000:73; Meyer, 2001:273; Olivier, 2000:4; SAQA, 2000; South Africa, 1997c):

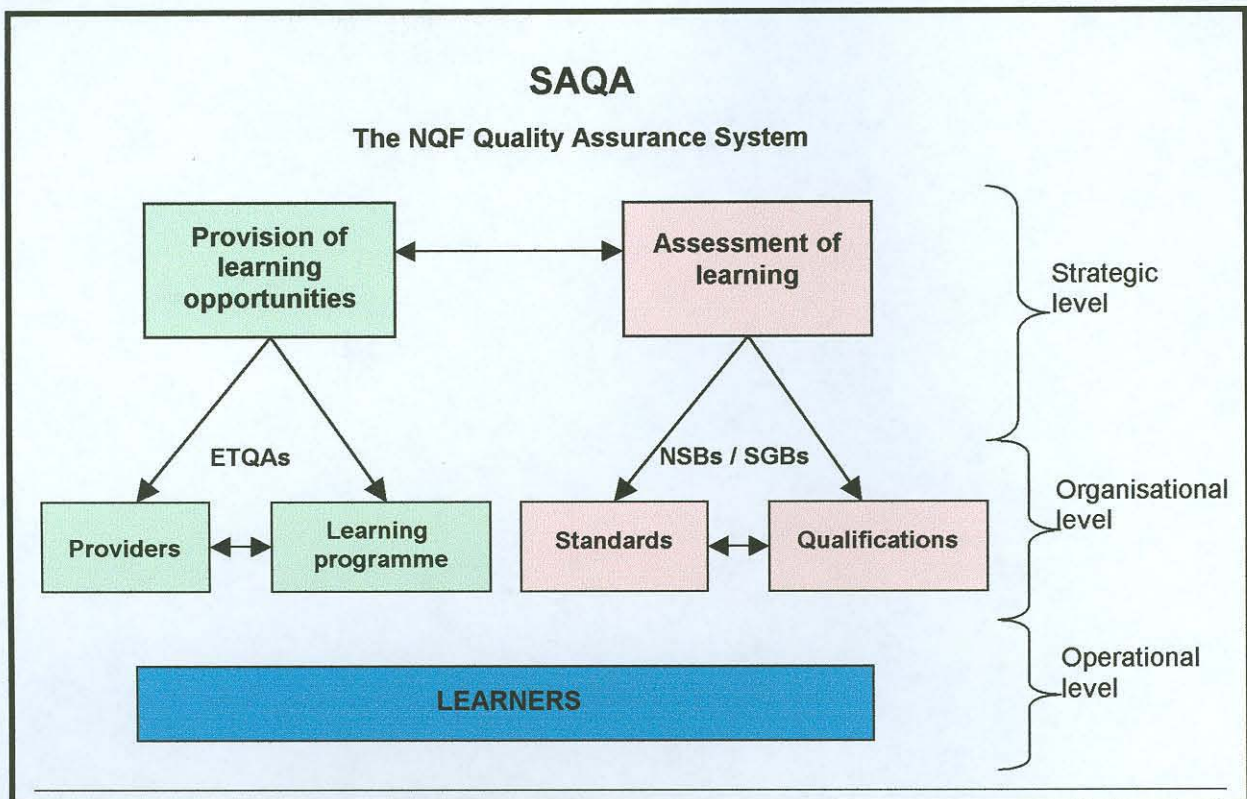
- A statutory body (SAQA) to oversee the development and implementation of the NQF (standards and qualifications), appointed by the Minister of Education in consultation with the Minister of Labour
- Standards setting bodies (SGBs) and bodies for the registration of standards and qualifications (NSBs) on the NQF [Chapter 3 section 2.1.4 and 2.1.5]
- Quality assurance bodies (ETQAs) / SETAs [Chapter 3 section 2.1.7 and 2.2.5]

The national processes correspond with international processes in as far as quality assurance in assessment will cover three levels (Brennan & Shah, 2000:43; Olivier, 2000:154):

- Strategic level: Deals with the quality management system and includes the policy statement, business plan, communication policy and human resources development policy (external moderation)
- Organisational level: Deals with the documentation of the learning programmes, copies of qualifications and record of learning achievements (internal moderation)
- Operational level: Deals with the learners where learning takes place and evidence is collected (assessor) [Chapter 7 section 4.2]

The coherence between these stakeholders as constructed by the researcher is presented in Figure 26.

Figure 26: Coherence between the stakeholders in quality assurance



### 2.3.1 Moderating Bodies

The following sections discuss the moderating bodies in the quality assurance process. Moderating bodies will be appointed by SAQA according to NSB recommendations to ensure fair, reliable, and valid assessment of registered standards and qualifications.

#### 2.3.1.1 NSBs and SGBs

The NSBs and SGBs are primarily responsible for the quality of the outcomes (achievement of standards and qualifications) because they have to ensure the quality of standards generated and registered on the NQF (Meyer, 2001:277) [Chapter 3].

#### 2.3.1.2 ETQAs

The ETQAs are primarily responsible and accredited by SAQA to monitor the quality of the inputs (learning provision, learning programme, resources) and processes (quality of learning, assessment auditing and monitoring) for the achievement of standards and qualifications.

Evaluation and reporting requirements for accredited bodies (ETQAs and providers) create a dynamic feedback into the mechanisms of standards setting for continuous improvement. ETQAs are responsible for accreditation of providers, assessment agencies and centres as well as the registration of assessors for the standards and qualifications for which they have been accredited (Olivier, 2000:170; SAQA: Discussion Document for Public Comment, 2000).

The Council on Higher Education (CHE) will be a major statutory body established to advise the Minister of Education on matters relating to the transformation and development of higher education in South Africa, and to manage quality assurance and quality promotion in the higher education sector (South Africa, 1997c:37).

### 2.3.1.3 SETAs

Sector Education and Training Authorities (SETAs) execute functions in the training environment under supervision of the ETQAs. The Sector Education and Training Authority (SETA) will also report to the ETQA. An ETQA may, with approval of SAQA, delegate selected functions to a provider [Chapter 3].

#### Moderating Bodies in quality assurance in context of this study

The processes described is not yet in place and for the purposes of this study the co-ordinator acted as the assessor, the representative of the higher education institution acted as internal moderator and the higher education institution organised an external moderator from another higher education institution.

When these processes are in place it will be included in the assessment of competence against the unit standard or qualification.

### 2.3.2 Providers

Providers are accredited for a limited period of time and report to one ETAQ. They are responsible for their own quality management system. The quality management system (QMS) of a provider includes the policy, procedures and review of the procedures to ensure that the quality is achieved and whereby members of the institution become involved in identifying and solving problems including assessment (Nielsen, 1997:305).

The quality management system for providers includes the following (Siebörger & Macintosh, 2001:77).

- Management structures
- Regular audits of human and physical resources
- Registration of assessors who will be properly qualified as well as be capable of fair, reliable, valid and credible assessment
- Fair and reliable moderation systems
- Professional development of members
- Recording progress
- Guidance and counselling
- Reviews

It is compulsory for providers to develop and implement a quality management system to be able to register with an ETQA as a training provider.



## 2.4 Aspects of quality assurance in context of this study

Good results and A-symbols of the past do not guarantee that learning has taken place and that learners are competent in the outcomes. Quality assurance in assessment implies the development of standards that will be adhered to during the actual learning process, thus eliminating variability in learning standards and reducing the failure rate (Nielsen, 1997:305). The implication is that all stakeholders (e.g. institution, facilitator, learner) have a responsibility for enhancing and maintaining the quality of learning.

Van der Horst & McDonald (1997) and Norms and Standards for Teacher Education, Training and Development (1997:138) list the aspects of quality assurance that need to be regulated in South Africa as explained in Table 133.

**Table 133: Aspects of quality assurance in context of this study**

SAQA Objective	Description	In context of this study
<b>Registration of standards and qualifications</b>	To ensure relevant, up to date and integrated qualifications	The qualification is registered as an interim qualification according to the SAQA requirements
<b>Registration of educational and training establishments</b>	To ensure quality training in terms of e.g. physical facilities	UP is a registered training provider for higher education. The partnership between UP and FKSA includes FKSA as a training provider for the qualification. UP does the assessment and quality assurance
<b>Accreditation of providers</b>	To ensure quality training in terms of qualified educators, assessors	All the educators of FKSA on behalf of UP are qualified educators, but none of them are trained assessors, except the co-ordinator
<b>Ongoing moderation of assessment</b>	To ensure consistency and quality assessment	UP provides for the moderating to ensure consistency and ongoing assessment
<b>Systematic evaluation</b>	To ensure effective performance of the education system in South Africa by: <ul style="list-style-type: none"> <li>➤ A core set of standards</li> <li>➤ A demonstration of sound and appropriate educational practices</li> <li>➤ Self-evaluation and external peer review</li> <li>➤ Client satisfaction</li> </ul>	<ul style="list-style-type: none"> <li>➤ There is a core set of standards</li> <li>➤ The co-ordinator oversees the sound and appropriate educational practices</li> <li>➤ All aspects of the qualification are available for self-evaluation and peer review</li> <li>➤ The majority of stakeholders are satisfied</li> </ul>

## 3 Educational aspects of quality assurance

Quality assurance in outcome-based learning could be described as the active involvement of learners in the learning process [Chapter 5] that results in the ability of learners to demonstrate the outcomes they have achieved [Chapter 5, Chapter 6, Chapter 7] (Coetzee-Van Rooy, 2002:125). Hay & Herselman (2001:132) report that quality assurance is determined by creating and ensuring continuing programme development [Chapter 4] and an enabling environment for learning [Chapter 5], based on self-evaluation and self-reflecting practices [Chapter 6, Chapter 7] whilst rewarding staff and students for excellent performances. As this is still a very unfamiliar practice, little reference is found with regard to addressing the concerns of the quality assessment practices as discussed in the following sections.

### 3.1 Checklist for quality assurance

A checklist for quality assurance of assessment was constructed and applied from RMC Research Corporation (2000) as presented in Table 134.

**Table 134: Checklist for quality assurance**

Assessment Procedure	In this study	Evidence to support in this study
Is the assessment related to the specific outcomes of the unit standard?	<b>Yes</b>	All learning tasks and assessment activities can be related
Does the assessment include authentic situations?	<b>Yes</b>	Learners must apply their learning tasks in a real-life situation
Does the assessment reflect performance-based activities?	<b>Yes</b>	All learning tasks are performance-based and applicable in the real-life activities of the learner
Is there a systematic procedure for collecting data?	<b>Yes</b>	Data is collected in a portfolio of evidence according to class work, learning tasks, tests and information
Does the assessment include multiple sources?	<b>Yes</b>	Assessment includes tests, observation checklists, learning tasks, class-work
Is the assessor adequately trained?	<b>Yes</b>	The co-ordinator is a trained assessor, but the educators at the training centres are not trained
Does the assessment provide useful information of competence?	<b>Yes</b>	The information gathered from the assessment provided a platform for calibration of assessment against the artefacts and the performance of a learner(s) proved to be consistent
Is the assessment valid and reliable?	<b>Yes</b>	Assessment is valid and reliable because the performance of the learners is consistent over seven different training centres and 119 learners
Is the assessment fair?	<b>Yes</b>	Learners have the opportunity to appeal and dispute results and the assessor communicates with each individual
Is the assessment feasible in the time-frame?	<b>Yes</b>	In this case it was feasible within the available time-frame
Are any learners are not yet competent?	<b>Yes</b>	It differs from module to module, but there are twelve learners for the NTG 471 module

The checklist in Table 134 indicates that the assessment adheres to the requirements of quality assurance aspects and could be accepted as valid and reliable.

### 3.2 Review on cycles of the action research

A cyclic procedure is characteristic of action research [Chapter 2]. The following tables present the progressive cyclic events of action research in the context of quality assurance of the assessment of the learning for the NTG 471 unit standard of the FDE(CAE) qualification. Table 135 represents the holistic contribution of the assessment of the learning, including the aspects of quality assurance in this study in 1997. The development of the tables based on the action research as described in Chapter 2 and explained in each chapter are now complete and represented in Table 135 to Table 140.

Table 135 summarises the application of action research in 1997.

Table 135: Action research application in this study for 1997

The cyclic, spiral and iterative nature of the action research in this study						
Cycle	Legislative framework and educational concepts in South African education	Learning programme	Facilitation of learning	Evidence of learning: Portfolio	Assessment of learning	Quality assurance
1997	Chapter 3	Chapter 4	Chapter 5	Chapter 6	Chapter 7	Chapter 8
<b>Idea</b>	Non-existent in any of the participants	Design and develop a curriculum from scratch	Traditional presentation of content-based learning	Traditional assignments were submitted	Traditional semester mark and summative examinations	Traditional examiner, internal moderator and external moderator
<b>Plan</b> Thematic concern Action group Rationale for changes Monitor process Evidence collected	Not applicable	No learning programme exists, a conventional content-based and teacher-centred curriculum with conventional tasks and study guides was developed	Not applicable	Students handed in traditional assignments	Students' assignments and examinations were marked against a fixed memorandum	No change from previous methodologies
<b>Action / Observe</b>	Not applicable	Unsatisfactory results because of inappropriate reading abilities of students and individual inputs	Unsatisfactory results because of inappropriate and inadequate computer facilities available	Unsatisfactory results because of a lack of motivation and technological infrastructure for students	Unsatisfactory results because of discrepancy between semester mark and final mark of students	Satisfactory results as regards moderating options, unsatisfactory as regards real learning that has taken place
<b>Reflect / Evaluate</b>	Not applicable	Alternative strategies had to be considered	Alternative strategies had to be considered	Alternative strategies had to be considered	Alternative strategies had to be considered	Alternative strategies had to be considered

**Synthesis:** The FDE(CAE) qualification was introduced in 1997 in a traditional content-based education system and according to existing behaviourist learning philosophies of a content-based and teacher-centred presentation of learning material including formal examinations.

Table 136 summarises the application of action research for 1998.

**Table 136: Action research application in this study for 1998**

The cyclic and spiral iterative nature of the action research in this study						
Cycle	Legislative framework and educational concepts in South African education	Learning programme	Facilitation of learning	Evidence of learning: portfolio	Assessment of learning	Quality assurance
1998	Chapter 3	Chapter 4	Chapter 5	Chapter 6	Chapter 7	Chapter 8
<b>Idea</b>	To bring about a change that will have an impact on outcome-based learning	Enhancement of the curriculum with appropriate references and resources	To change the approach to outcome-based learning	Traditional assignments were submitted, not really authentic	Traditional semester mark and summative examinations	Traditional examiner, internal moderator and external moderator
<b>Plan</b>	Inform participants about the legislative structures	Improvement of references and resources for students	Introduce outcome-based learning activities	Students handed in traditional assignments	Students' assignments and examinations were marked against a fixed memorandum	No change from previous methodologies
<b>Action / Observe</b>	Introduce participants to educational concepts in outcome-based learning	Resistance against provided content references and resources	Alternative approach to collect and analyse data, data management by learners	Unsatisfactory results because of a lack of motivation and technological infrastructure for students	Unsatisfactory results because of discrepancy between semester mark and final mark of students	Satisfactory results as regards moderating options, unsatisfactory as regards real learning that has taken place
<b>Reflect / Evaluate</b>	The information is not enough; background of participants insufficient	Students do not understand the variety of references and resources, still in a behaviourist paradigm of "content received is content to be learnt by heart to be reproduced"	A combination of content-based and outcome-based learning facilitation; learners object to an outcome-based facilitation of learning	Alternative strategies had to be considered	Alternative strategies had to be considered	Alternative strategies had to be considered

**Synthesis:** Participants were better informed than in 1997, but still insufficiently prepared in a content-based and teacher-centred presentation of learning material including formal examinations.

Table 137 summarises the application of action research for 1999. This was the year of the “fuzzy” idea to design and develop a learning environment from a partly unknown situation with a “fuzzy” methodology that resulted in “fuzzy” answers but provided enough evidence to direct questions and refine both questions and answers (Dick, 1993:9).

**Table 137: Action research application in this study for 1999**

The cyclic and spiral iterative nature of the action research in this study						
Cycle	Legislative framework and educational concepts in South African education	Learning programme	Facilitation of learning	Evidence of learning: portfolio	Assessment of learning	Quality assurance
1999	Chapter 3	Chapter 4	Chapter 5	Chapter 6	Chapter 7	Chapter 8
<b>Idea</b>	Think of alternative strategies to implement outcome-based assessment; read about assessment and the process and procedures, the legislative requirements	Start with the design and development of a new learning programme	To improve on the previous facilitation of learning and introduce a real outcome-based facilitation of learning	Co-ordinator assumed that every educator would be able to set learning tasks for learners to create a semester mark as required by UP	To think of alternative ways to determine the learners' performance	Traditional examiner, internal moderator and external moderator
<b>Plan</b>	Talk to educators and inform them about the change	Design and develop a completely new learning programme	Provide educators with guidelines for outcome-based facilitation of learning	Give educators and learners freedom to create learning tasks for accumulation of a semester mark	Give more detailed instructions as to what is expected in the learning tasks and submissions for evaluation purposes	No change from previous methodologies
<b>Action / Observe</b>	Encourage the educators to read and contribute; the legislative structures are still in developmental phase and more information is needed	Time constraints to fully develop and implement a new learning programme; unit standards are developed	The unit standards that had been developed were introduced but the educators and learners viewed it from a content-based learning perspective	Educators and learners used the templates from the hosting company to create learning tasks and determine semester marks in a content-based environment	To change the template activities and force educators to think divergently and introduce more exciting tasks and structured mark allocation	Satisfactory results as regards moderating options, unsatisfactory as regards real learning that has taken place
<b>Reflect / Evaluate</b>	More reading and planning to be done	The idea did not become a full reality although there was an idea	Outcome-based facilitation does not become a reality	There must be a real change in collecting evidence of learning	Educators still used the templates and disregarded the instructions to change	Alternative strategies had to be considered

**Synthesis:** Participants were better informed than in 1998, but still insufficiently prepared; a content-based and teacher-centred presentation of learning material including formal examinations. Major changes in the delivery and security of the examinations became necessary.

Table 138 summarises the application of action research for 2000.

**Table 138: Action research application in this study for 2000**

The cyclic and spiral iterative nature of the action research in this study						
Cycle	Legislative framework and educational concepts in South African education	Learning programme	Facilitation of learning	Evidence of learning: portfolio	Assessment of learning	Quality assurance
2000	Chapter 3	Chapter 4	Chapter 5	Chapter 6	Chapter 7	Chapter 8
<b>Idea</b>	Think of alternative strategies to implement outcome-based assessment; read more about assessment and the process and procedures, the legislative requirements	Start again with the design and development of a new learning programme	To improve on the previous year and implement the learning programme as well	Introduce a portfolio of evidence	Read about assessment and the process and procedures, the legislative requirements for assessment of a portfolio of evidence of competence	Read about quality assurance and processes and procedures to ensure quality assurance
<b>Plan</b>	Talk to educators and inform them about the change; visit the venues and communicate with the learners the strategies, listen to what they have to say and get their input	Although traditional methodologies were still used, the unit standards were incorporated and the plan was to introduce a completely new learning programme	Educators and learners use the unit standards and may use their expertise to facilitate their own learning programme	Introduce a portfolio of evidence. Give guidelines and support to educators and learners	Assess the portfolio of evidence against the specific and critical cross-field outcomes of the unit standards	Develop a strategy for quality assurance against the present structures
<b>Action / Observe</b>	Visits to the venues did not take place due to a number of factors	The partial introduction of a new learning programme was still confusing because of a lack of understanding of the learning programme and introduction of alternative strategies to content-based learning	There seems to be a problem with the trainers in that they do not understand how the outcome-based learning programme must be facilitated	Major problems occurred with reference to the compilation of a portfolio of evidence because neither educators nor learners had been exposed to this activity before	Assume that the educators and learners will know how to assess the portfolio of evidence according to the prescribed documentation	Implement quality assurance mechanisms like validity of the portfolio of evidence. The co-ordinator undergoes training as an assessor
<b>Reflect / Evaluate</b>	More reading and planning to be done	More training, participation and activities	More communication, training, participation and activities	A complete disaster as regards "perfect tasks", validity and reliability	Neither educators nor the learners understood what was expected	Educators and learners do not understand the principles of quality assurance

**Synthesis:** The purpose of action research, i.e. to determine *simultaneously* an understanding of the system and the best opportunities for change evolved.

The key principle of action research, i.e. let the data decide, determined the change towards a process of more valid and reliable results (Dick, 1993:9).

Table 139 summarises the application of action research for 2001.

**Table 139: Action research application in this study for 2001**

The cyclic and spiral iterative nature of the action research in this study						
Cycle	Legislative framework and educational concepts in South African education	Learning programme	Facilitation of learning	Evidence of learning: Portfolio	Assessment of learning	Quality assurance
2001	Chapter 3	Chapter 4	Chapter 5	Chapter 6	Chapter 7	Chapter 8
<b>Idea</b>	Think of alternative strategies to implement outcome-based assessment; read about assessment and the process and procedures, the legislative requirements	A fully developed learning programme for the qualification in outcome-based learning	Educators will be able to facilitate the learning programme in outcome-based learning	Educators and learners will be exposed to a portfolio of evidence as the legal documentation for performance against the unit standards with support and guidance	To introduce a completely new structure of information about assessment practices and perform a legal assessment in outcome-based learning	Introduce a completely new quality assurance system
<b>Plan</b>	Talk to educators and inform them about the change; visit the venues and communicate with the learners the strategies, listen to what they have to say and get their input	Introduce educators to the fully developed learning programme for the qualification in outcome-based education	Organise training workshops to explain the paradigm shift to educators and learners	To implement a comprehensive portfolio of evidence and explain to educators and learners what will be expected	Visit venues and explain to educators and learners what it is about; educators have to report activities to co-ordinator to become partners in the process	Visit venues and explain the principles of quality assurance
<b>Action / Observe</b>	A very positive response from the educators and learners during visits and conversations, indicating that these talks are essential	A new learning programme with a full implementation in an outcome-based scenario is still something the educators are unfamiliar with	There seems to be a problem with the trainers and that they do not understand how the outcome-based learning programme must be facilitated	Visit educators and learners and explain the legislative and educational concepts of outcome-based learning requirements and the role of a portfolio of evidence	Implement the visits to the venues, explain, get the educators involved and partners in the process	Implement the quality assurance mechanisms
<b>Reflect / Evaluate</b>	This effort was really worth while and all participants reacted positively to information about the legislative and educational concepts of outcome-based education in South Africa	The learning programme was developed and implemented and successes and failures can be reported	The workshops with the learners take place although learners do not regard this as serious. Those who attend the workshops understand. Workshop with the educators did not take place	An incredible learning curve and the information gained from this activity could be used as a valid and reliable modus operandi to determine learner performance in outcome-based learning	A successful implementation of assessment in outcome-based learning; incredible amount of information gathered and still a lot to learn	Still some way to go with quality assurance

**Synthesis:** A completely new approach that adds more clarity and converges towards precision (Dick, 1993:9).

Table 140 summarises the application of action research for 2002.

**Table 140: Action research application in this study for 2002**

The cyclic and spiral iterative nature of the action research in this study						
Cycle	Legislative framework and educational concepts in South African education	Learning programme	Facilitation of learning	Evidence of learning: portfolio	Assessment of learning	Quality assurance
2002	Chapter 3	Chapter 4	Chapter 5	Chapter 6	Chapter 7	Chapter 8
<b>Idea</b>	No first year learners for the existing qualification	A full development of the learning programme for outcome-based education adapted and changed as experienced in 2001	A full implementation of the facilitation of learning for outcome-based learning adapted and changed as experienced in 2001	Elaboration on the full implementation of an outcome-based portfolio of evidence of learning	Elaboration on the full implementation of an outcome-based assessment strategy including lessons learnt from the past	Not applicable
<b>Plan</b>	Qualification terminates	No new plans for this qualification because of the termination. However, the experience can be used and built on in future	Organise training workshops to explain the paradigm shift to educators and learners	No new addition to present portfolio of evidence; an attempt to determine whether there is an improvement after the implementation and experiences of the previous year on the learners' portfolio performance	To complete the action research cycle with as much success as possible	Not applicable
<b>Action / Observe</b>	No further training in this qualification	The learning programme for this qualification has been developed and can be implemented	Educators and learners exposed in 2001 are more comfortable and have adapted	Educators and learners exposed in 2001 are more comfortable and have a better idea of what is expected	Improve on the processes and procedures and include more activities to be monitored and included for assessment purposes	Not applicable
<b>Reflect / Evaluate</b>	Not applicable	A learning programme implemented with partial success; some educators still have to be submitted to more exposure and experience	Facilitation of learning with partial success; progress on the facilitation of outcome-based learning; there is still a learning curve and aspects to address	In most cases an improvement and a better understanding of the purpose of the portfolio of evidence as a legal document of performance	Learners are more comfortable and accept the alternative way of assessment as a process and procedure to determine competence	Not applicable

**Synthesis:** Educationally sound and acceptable investigation of the legislative framework and educational concepts in South African education, the learning programme, the facilitation of learning, the evidence of learning (the portfolio), the assessment and the quality assurance for assessment.



## 4 Evaluation of the quality assurance

The following summarises the findings of the studyer on the evaluation of the quality assurance of the data collected with reference to the contributions of the content [Table 141], the physical environment [Table 142], the time-frame [Table 143], the co-ordinator [Table 144] the educators [Table 145], the learners [Table 146], and the impact on the assessment of the outcomes against the specific outcomes of the unit standard for the qualification [Table 147]. This is an elaboration on the reflection on the action research and in context of the requirement that all participants must contribute to quality assurance [Chapter 2].

This evaluation includes the quality assessment systems, referring to those that demonstrate the extent to which learners have acquired knowledge, skills and attitudes, as well as quality assurance systems that are concerned with creating and maintaining conditions by which learners attain the desired outcomes (Nielsen, 1997:287). In each case factors contributing to a low grading and factors contributing to a high grading were taken in consideration. Major factors contributing to low performance but high quality assurance were:

- Learning tasks were not authentic
- Learners copied from one another or manuals
- A lack of feedback in some cases
- Learners did not take the learning tasks seriously as workplace orientated activities

Major factors contributing to high performance and high quality assurance were:

- Learners performed above their potential
- Learners assimilated the content and became change agents in their workplace
- Learners admitted that they understand the principles of outcome-based learning for the first time

Table 141 summarises the quality assurance against the principles of assessment [Chapter 7 section 5.2.3] in context of the content or the portfolio of evidence in detail.

**Table 141: Evaluation of quality assurance in context of this study with reference to the principles of assessment and the content**

Principle	Grading	Content
Authenticity		The idea of a portfolio of evidence is to contain authentic performance tasks [Chapter 4]
	Low	There is a tendency to complete the portfolio of evidence for the sake of submitting a document [Chapter 6, Chapter 7]
	High	Learners who had made a paradigm shift submitted evidence of a high quality of authentic performance tasks [Addendum 13] [refer <a href="http://www.lmp.co.za">http://www.lmp.co.za</a> ]
Consistency	Low	In one case a learner did not hand in a portfolio of evidence and yet received a semester mark from the educator in 2000 Discrepancies occurred where there was no coherence and the portfolio of evidence consisted of a number of unstructured tasks or no tasks at all [Addendum 14]
	High	All activities were in coherence to contribute to the competence of learners against the specific outcomes of the unit standard [Chapter 4, Chapter 5, Chapter 7] Learners who had accepted the challenge of outcome-based learning had performed consistently on all activities [Addendum 14]
Fairness	High	All learners had equal opportunities to get acquainted with the content and compilation of a portfolio of evidence [Chapter 4, Chapter 5, Chapter 6, Chapter 7] Learners had the same exposure to the unusual formative and summative assessment methodologies [Chapter 7 section 2.4] and the opportunity to continuously improve on the evidence; it was up to the learner to deliver a product according to his or her abilities All activities present authentic application in the learning area of the learner and provide for cultural diversity
Feedback	Low	A major complaint of learners was the lack of feedback on their activities. This could be improved through communication
	High	In some centres learners receive frequent positive feedback
Flexibility	High	Learners were allowed flexibility in the learning tasks and class activities
Holistic	Low	Behaviourist learners struggled to deliver and interpret content in an holistic way [Chapter 5 section 3.2.1]
	High	Cognitive learners enjoyed the freedom of holistic perspectives on the content and delivered outstanding performances [Chapter 5 section 3.2.1]
Objectivity	Low	It is difficult to maintain objectivity unless the specific outcomes, assessment criteria and range statements are clear [Chapter 3]. Learners often interpret their "feelings" and not the evidence of competence
Relevance	Low	A few learners complained about the irrelevance of the content and a few interpreted some tasks as repetition [Chapter 4]
	High	Most of the learners liked the content and regarded it as essential to all educators in the country
Reliability	Low	Some learners did not deliver the same interpretation of content under different circumstances
	High	The reliability of the learners' competence is high because the interpretation of content under different circumstances is the same [Addendum 13, Addendum 14]
Sufficiency	High	The correlation between the learners' input and output is sufficient to determine that the learner is competent or not yet competent [Addendum 13, Addendum 14]
Transparency	High	All learners had equal opportunities to get acquainted with the content and compilation of a portfolio of evidence
Validity	Low	The content is prescribed in the unit standard and the learners had to find information to construct their own knowledge. Some learners had access to previous manuals and copied and pasted Four learners copied and pasted from manuals and four learners copied and pasted from one another and there was plagiarism
	High	Some portfolios were of high validity and could be accepted as valid documents [Addendum 12]

Recommendation:

This was a first attempt to determine quality assurance for the assessment of the content of learning. Lessons learnt from the areas of low quality assurance are valuable and can be implemented in future opportunities through better communication.

Inadequate infrastructure and technical support at training centres and learners without the minimum requirements in technology contributed to low performance and could be detected during the quality assurance of the learning. Learners with adequate exposure had no problems.

Table 142 summarises the quality assurance against the principles of assessment [Chapter 7 section 5.2.3] in context of the physical environment in general.

**Table 142: Evaluation of quality assurance in context of this study with reference to the principles of assessment and the physical environment**

Principle	Grading	Physical environment
Authenticity	Low	> Inadequate infrastructure in training centres re internet and software influenced all the principles of assessment in terms of the infrastructure > Learners did not have access to infrastructure at home although unlimited access to computer facilities is a prerequisite > Technical support needed attention, e.g. although the software was requested to be loaded, on arrival for assessment it was obvious that it had not been done
Consistency		
Fairness		
Feedback		
Flexibility		
Holistic	High	> Learners who were exposed to the prescribed infrastructure were successful in submitting authentic activities to be assessed against the outcomes [Addendum 12, Addendum 13]
Objectivity		
Relevance		
Reliability		
Sufficiency		
Transparency		
Validity		

Recommendation:

There was a remarkable difference between the learners who were exposed to the essential physical environment and those that did not have access to the desired infrastructure. To be successful needs unlimited access to computer technology at home and a secure network system at training centres where learners will be able, for example, access to the internet to find information and to construct knowledge.

Factors that caused low performance of the learners during quality assurance were lack of infrastructure, neglecting notional hours of learning and waiting until the last moment to complete the task. Factors contributing to high quality assurance were the visits to the venues and learners who spent time close to the notional hours of learning. Table 143 summarises the quality assurance against the principles of assessment [Chapter 7 section 5.2.3] in context of the timeframe.

**Table 143: Evaluation of quality assurance in context of this study with reference to the principles of assessment and the timeframe**

Principle	Grading	Time-frame
Authenticity	Low	<ul style="list-style-type: none"> <li>➤ An inadequate infrastructure caused time-frame problems where learners did not finish portfolios and asked to hand in later than the assessment date</li> <li>➤ Learners did not complete the tasks on a continuous time-schedule influencing the authenticity and consistency</li> <li>➤ There was not enough lecturing time according to certain learners</li> <li>➤ Learners did not spend the notional hours of learning on the qualification and that could have influenced the competence [Chapter 2, Chapter 4, Chapter 5]</li> <li>➤ Learners who spent time closer to the notional hours of learning were better rated in terms of competence</li> <li>➤ There was enough time for full feedback in some cases</li> <li>➤ The time spent to visit training centres was worth while</li> </ul>
Consistency		
Fairness		
Feedback		
Flexibility		
Holistic		
Objectivity		
Relevance		
Reliability		
Sufficiency		
Transparency		
Validity	High	

Recommendations:

There seems to be a relationship between the notional hours of learning and the competence of a learner. Better control over the notional hours of learning may be accomplished if learners keep a diary. Time must be allocated to explain the process and the quality assurance of assessment. It cannot be taken for granted that stakeholders understand the process of notional hours [Chapter 9].

Draper-Alston & Patton (1998:13) emphasise the importance of stakeholders to assure the quality of the learning at a distance and to employ safeguards to sustain integrity of academic programs and to avoid potential abuses. To improve the quality assurance the co-ordinator was responsible for visiting training centres, acting as problem solver, creating authentic learning tasks and submitting NQF aligned unit standards. Table 144 summarises the quality assurance against the principles of assessment [Chapter 7 section 5.2.3] in context of the activities of the co-ordinator.

**Table 144: Evaluation of quality assurance in context of this study with reference to the principles of assessment and the co-ordinator**

Principle	Grading	Co-ordinator
<b>Authenticity</b>	Low	The major difference between the FKSA approach to education and the outcome-based approach described in this study, is that FKSA system of education is primarily template-based. The implication is that learners were provided with templates and this did not contribute to the authenticity (the learners' own work and as in real life). The co-ordinator could not change the educators' minds.
<b>Consistency</b>	High	All educators and learners were treated equal and with clear guidelines
<b>Fairness</b>	High	The co-ordinator invited the learners to communicate any problems and provided contact details. Learners did not use this opportunity until it was too late. Many problems could have been solved if the co-ordinator were informed in time.
<b>Flexibility</b>	High	The co-ordinator was flexible and adapted to the circumstances of the educators and learners within a framework of guidelines as indicated in this study
<b>Holistic</b>	High	The co-ordinator was not interested in detail, but in the knowledge, skills and attitudes gained in the qualification
<b>Objectivity</b>	High	Learners were supplied with a student number that ensured objectivity in assessment
<b>Relevance</b>	High	All tasks were as relevant to the learners' situation as possible [Chapter 4, Chapter 5, Addendum 10]
<b>Reliability</b>	High	Reliability occurred over a period of time, with different educators and different learners at the different venues [Chapter 4 section 3.1.5]
<b>Sufficiency</b>	High	The co-ordinator included sufficient data in all assessment activities to be assessed [Chapter 4, Chapter 5, Chapter 7, Addendum 12, Addendum 13]
<b>Transparency</b>	High	All activities were transparent and anybody could communicate any activities with the co-ordinator
<b>Validity</b>	High	The co-ordinator visited all centres to ensure validity of performance of learners and that the learners would know what is expected

#### Recommendations:

The co-ordinator is the person who has to oversee the quality assurance and the action research involved in this study and created various opportunities to develop problem-solving abilities and to act pro-actively.

The factors contributing to the quality assurance of assessment regarding the educators are the background of the educators as far as their own qualifications and outcome-base learning are concerned, objectivity of educators and the fact that the educators were not trained assessors.

Table 145 summarises the quality assurance against the principles of assessment [Chapter 7 section 5.2.3] in context of the educators.

**Table 145: Evaluation of quality assurance in context of this study with reference to the principles of assessment and the educator**

Principle	Grading	Educators
Authenticity	Low	<ul style="list-style-type: none"> <li>➤ The template-based environment did not contribute to authenticity of the learners' work and educators will have to change their approach</li> <li>➤ Educators did not understand the concept 'authentic' and used it in an incorrect way which caused confusion among learners</li> </ul>
	High	<ul style="list-style-type: none"> <li>➤ Educators who had made the paradigm shift towards outcome-based learning exposed the learners to authentic activities and learners made positive comments on that</li> </ul>
Consistency	Low	Different educators acted differently. In some cases the original trained educators left the company and their replacements were educators who were trained by the original educators who were outspoken about the inadequate training that they had received
	High	In cases where educators had been with the company for the whole period of the training, consistencies in training and assessment practices were obvious
Fairness	Low	Angry learners complained to the co-ordinator about unfair practices and the co-ordinator had to visit the training centres more often to settle differences. In most cases it seemed as if the educators were not properly prepared and the partners did not understand the concept that the educator becomes a facilitator and a co-learner
Flexibility	Low	Educators did not follow instructions and made unilateral decisions without consulting the co-ordinator regarding important aspects like using outsiders who are not accredited trainers for training purposes
Holistic	Low	<ul style="list-style-type: none"> <li>➤ It is difficult to get an holistic overview in a template-based environment</li> <li>➤ This may be the single contribution to the discrepancy between the semester marks of learners and the examination marks. Learners from a template-based learning situation could not deliver an examination question where the theme was a prize-giving event and learners had to design a programme, invitation card and certificate for the event without using a template.</li> </ul>
Objectivity	Low	Educators were not always objective and the co-ordinator received the blame for all the unanswered questions of the learners. Once the co-ordinator visited the learners' objectivity was restored
Relevance	Low	It is difficult to transfer a template-based scenario to the relevance of the learners' environment
Reliability	Low	Educators did not follow examination procedures, e.g. they talked to learners during assessment sessions, proposed answers to questions and they phoned one another to clarify uncertainties instead of phoning the co-ordinator
	High	Learner profiles [Chapter 5 section 3.2.1] determine reliability of activities and the IS and IN learners submitted evidence of reliability
Sufficiency	Low	Educators who took over from the original trained educators often complained about the feeling of insufficiency to do training and the fear that they were inadequately trained to perform the task
Transparency	Low	Educators were not always transparent and blamed the co-ordinator for their own uncertainties
Validity	Low	Educators misinterpreted an "open book" assessment as to be able to copy and paste content or to be able to discuss answers
	High	For valid and reliable assessment educators will have to be trained as assessors

Recommendations:

It cannot be taken for granted that educators know what to do when outcome-based learning is introduced. Training and the monitor of their activities are essential. It is recommended that additional assessors' training is made compulsory for all educators.

Learners gained confidence and progressed in the process of learning during the qualification towards achievement and better performance. Although the authenticity and validity of the portfolio of evidence improved in 2001 and even more in 2002, it is difficult and time-consuming to change the minds of learners. Table 146 summarises the quality assurance against the principles of assessment [Chapter 7 section 5.2.3] in context of the learners.

**Table 146: Evaluation of quality assurance in context of this study with reference to the principles of assessment and the learners**

Principle	Grading	Learners
<b>Authenticity</b>	Low	<ul style="list-style-type: none"> <li>➤ It is difficult to provide evidence that the learners completed the learning tasks and not someone else [Chapter 7 section 5.2.3]; learners did not understand the importance of the signed document</li> <li>➤ A student who is a computer studies teacher indicated that the learning area is "Animals"</li> </ul>
<b>Consistency</b>	High	A learner performed consistently across the different activities [Addendum 12]
<b>Fairness</b>	High	Learners acknowledged the assessment as fair and unbiased
<b>Flexibility</b>	High	The flexibility is restricted to the learners at a venue to decide on a date for assessment
<b>Holistic</b>	Low	Due to different learning styles [Chapter 5 section 3.2.1] learners are able or not able to interpret information in an holistic manner
<b>Objectivity</b>	Low	Learners had difficulty to be objective in the self-assessment and in the research conducted by Penny & Grover (1996) to determine the level of self-assessment of learners, they found that learners tend to be subjective
<b>Relevance</b>	High	<ul style="list-style-type: none"> <li>➤ Learners gained confidence and reported that they had learnt a lot with reference to the practical application</li> </ul>
<b>Reliability</b>	Low	<ul style="list-style-type: none"> <li>➤ Learners misinterpreted an "open book" assessment as to be able to copy and paste content or to be able to discuss answers</li> <li>➤ Learners copied from manuals</li> <li>➤ A learner indicated a learning area as "Grade 2"</li> </ul>
<b>Sufficiency</b>	Low	When learners constructed documentation little experience of outcome-based principles [Chapter 3, Chapter 4] could be detected and there is a lack of a variety of activities to support sufficient evidence of competence
<b>Transparency</b>	High	All documentation could be discussed and queries could be communicated
<b>Validity</b>	Low	<ul style="list-style-type: none"> <li>➤ Learners did not pay serious attention to the header and footer [Chapter 7 section 5.2.3.1]</li> <li>➤ Learners and witnesses did not sign all documents [Chapter 7 section 5.2.3.1]</li> <li>➤ The witness who signed the document (e.g. M Delpont) and the witness whose information appeared on the document (e.g. R Maree) are not the same person</li> <li>➤ Learners and witnesses are in different locations when documents are signed, indicating that the educator did not oversee the activities, but signed the documents because they "know that the learners did it"</li> <li>➤ Educators signed documents that were supposed to have been completed by the learners at home and a different witness should have signed, that leaves the impression that learning tasks were done as class activities</li> </ul>

### Recommendations:

It cannot be taken for granted that learners know what to do when outcome-based learning is introduced. Training and monitoring of activities are essential. It is recommended that additional module focussing on assessor training is a compulsory addition to the qualification.

From the quality assurance of the assessment of the outcomes it becomes clear that it discriminates between the different principles of assessment. The learners need to be informed and about the changes taking place and that they must submit valid and reliable evidence of learning. Table 147 summarises the quality assurance against the principles of assessment [Chapter 7 section 5.2.3] in context of the assessment of outcomes.

**Table 147: Evaluation of quality assurance in context of this study with reference to the principles of assessment of outcomes**

Principle	Grading	Assessment of outcomes
<b>Authenticity</b>	Average	The authenticity of the evidence against the outcomes could be considered average, because some learners were successful and other learners still had to make progress towards real authentic evidence of learning
<b>Consistency</b>	Average	The consistency of the evidence against the outcomes could be considered average, because some learners were successful and other learners still had to make progress towards consistency in their evidence of learning
<b>Fairness</b>	High	All educators and learners had been kept informed about all activities and there were no complaints about the fairness or bias against the outcomes
<b>Flexibility</b>	Average	Learners could use their own creativity in constructing evidence of competence against the outcomes. Some learners' performance was outstanding and some learners still had to deliver
<b>Holistic</b>	Average	Learners present evidence of competence in sub-divisions according to the separate specific outcomes in the unit standard and could not see the relationship between the different components
<b>Objectivity</b>	Low	Educators and learners struggled to distinguish between "I know I can do it" and the evidence provided for the competence. The assessor could be objective because of training and student numbers and not getting emotionally involved in the situation to "feel bad if the learners perform badly"
<b>Relevance</b>	Average	Learners present evidence of competence for the sake of completing a task and not necessarily for the sake of the relevance to their real-life situation
<b>Reliability</b>	High	Reliability is in the fact that the average of a measurement of different learners at different training centres is consistent [Chapter 7 section 7.2.4.]
<b>Sufficiency</b>	Average	Learners did not always submit sufficient evidence of competence against the outcome, but in those cases the learners' performance were consistent with what they had submitted
<b>Transparency</b>	High	All educators and learners had been kept informed about all activities and there were no complaints about the transparency against the outcomes
<b>Validity</b>	High	The validity could be categorised as high. The internal validity is in the fact that the performance of the learners is consistent within each learner's own performance [Addendum 15]. External validity is in the fact that the learners in different training centres delivered the same result. The assessment processes and procedures tested what was supposed to be tested [Chapter 7 section 7.2.4.]



### Recommendations:

Action research generates more questions than answers. The contribution of these findings is invaluable in this study towards a fair and acceptable structure for assessment in South African education, training and development. It is recommended that these principles of assessment are to be taken into consideration to elaborate on in further research, and to apply in the quality assurance the assessment of learning.

## **5 Summary**

Quality assurance in assessment addresses different inputs, e.g. providers, assessors, moderating bodies and a quality management system, that may have different criteria for what constitutes quality and may cause confusion if not clearly defined (Brennan & Shah, 200:18).

It is, however, worthwhile to investigate ways of improving student performance that is quality assured and relevant to real world learning. Thus, with more information supplied to learners about the expected outcomes, different types of assessment methodologies and forms of evidence are included, and with more communication on assessment practices and procedures within the legislative requirements, there is better feedback and learner involvement in their own assessment and a better process

Quality assurance is embedded in assessment in terms of the principles and objectives of the NQF in the format for standards and qualification as laid out by the National Standards Bodies regulations, and occurring as prescribed by the quality management system of ETQA's and providers (Mokhobo-Nomvete, 2000:8) [Chapter 3, Chapter 7]. Hay & Herselman (2001:137) support this with their result of a research on perceptions of quality assurance in teaching and learning in South African universities that indicates that the majority of respondents agreed that the registration of programmes with SAQA and the NQF will enhance the quality and uniformity of qualifications.

Dasher-Alston & Patton (1998:17) emphasise that the primary focus of education and training is the assurance of academic quality and the advancement of educational excellence. It is genuinely a new frontier filled with many unknowns and unfamiliar ground, but eventually it is true that "(A)ll administration – and quality assurance processes – are simply a means to an end: namely better teaching and, more particularly, better teachers" (Norms and Standards for Teacher Education, Training and Development, 1997:163).

Chapter 1 was the introduction to the research project and chapter 2 argued action research as the research methodology. Chapter 3 to chapter 7 was a description of all the aspects that contributed to the process of assessment of outcomes in outcome-based education. Chapter 8 was a discussion on the quality assurance of the assessment. Chapter 9 will be the conclusion and recommendations on this study.