CONCEPT ANALYSIS OF CRITICAL CROSS-FIELD OUTCOMES IN THE CONTEXT OF PRIVATE SERVICE PROVIDERS WITHIN FURTHER EDUCATION AND TRAINING (FET)

BY

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Title:	**Concept analysis of Critical Cross-Field Outcomes in the Context of Private Service Providers within Further Education and Training (FET)**
Degree:	**Philosophiae Doctor**
Department:	**Department of Curriculum Studies**
Faculty:	**Faculty of Education**
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This research study is a concept analysis of the Critical Cross-Field Outcomes (CCFOs). Legislation and related documentation such as SAQA Bulletins, respective Acts, and position papers of the South African Qualifications Authority (SAQA) and the National Qualifications Framework (NQF) describe the CCFOs as one of the transformational tools utilised by the SAQA to ensure access, portability and lifelong learning. CCFOs express the intended results of education and training and underpin all learning processes, thus enhancing the learning process and contributing to the full development of an individual. CCFOs are generic and cross-curricular, they are not restricted to any specific learning context, but inform the formulation of specific outcomes in the individual areas of learning for all learners at all levels on the NQF. CCFOs should direct education, training and development practices, as well as the design and implementation of learning programmes. Learning materials should also be designed and utilised accordingly.

Critical Cross-Field Outcomes are also referred to as soft competencies, personal competencies, thinking competencies and life competencies, which are the abilities that people need to be active, responsible and successful members of society. They provide the means to build a career and make the person more effective in executing a job. CCFOs should be developed during learning processes so that learners are able to deploy them when achieving work-related outcomes.

Knowledge is of little value if it cannot be utilised in new situations or in a form very different from that in which it was originally encountered. Although knowledge is a necessary requirement in education, training and development, it is not sufficient for becoming an expert. What is needed is some evidence that the learners can do something with their knowledge, which implies that they can apply what they know to new situations and problems. The CCFOs are tools that the learner or facilitator can utilise to access knowledge and to develop new knowledge of purposeful objectives.

The outcome of this research is a categorisation of underpinning competencies related to the CCFO statements that facilitators, proposers of qualifications, service providers and Education and Training Quality Assurance (ETQA) Managers can use to incorporate the CCFOs in the education, training and development initiatives. These competencies also serve as the starting point for the outcomes-based principle of designing back. These competencies can also be utilized as a benchmark for conducting competencies audits on the CCFOs. Selected competencies are to be implemented at all levels of the NQF in all the fields as identified by SAQA.

Keywords

Critical Cross-Field Outcomes
Essential outcomes
Critical outcomes
Key competencies
Mayer competencies
Generic competencies
Enabling competencies
Thinking competencies
Soft competencies
Unit standard based education and training
Curriculum design

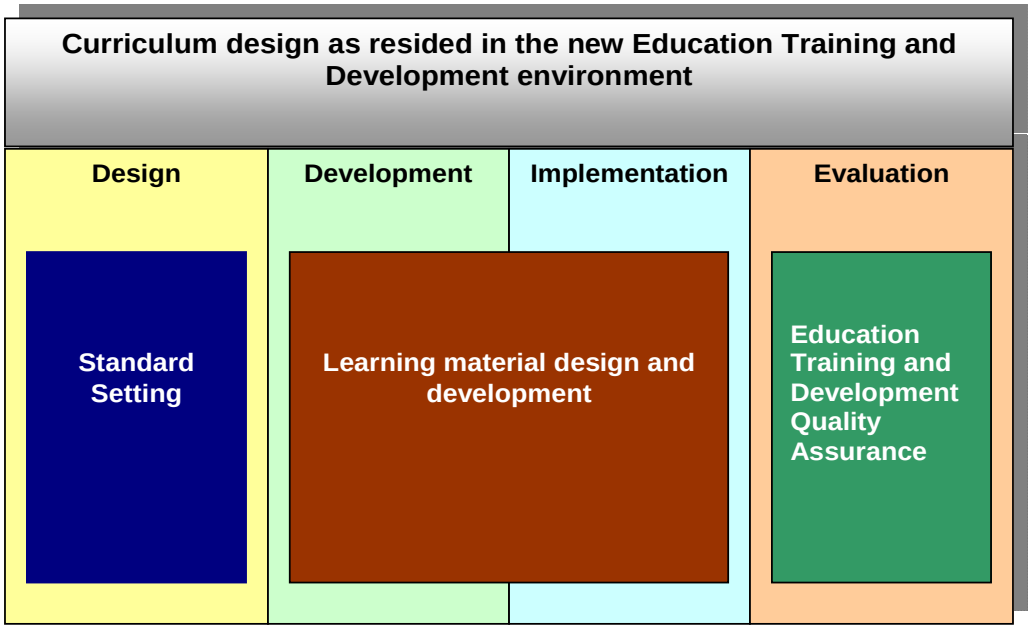
CHAPTER 1: RESEARCH ORIENTATION

1.1 INTRODUCTION

The education, training and development environment in South Africa has changed drastically over the past few years. The relatively new education, training and development system is still in progress under the authority of the South African Qualifications Authority (SAQA). This young and upcoming dynamic system has already proven its sustainability since the transformation to the democratic education system in 1994. The education system requires that all disciplines; the so-called industries, across all levels will conform to quality requirements set by SAQA. The new education, training and development system implies the need for a new curriculum. The new curriculum established for South African education, training and development is Outcomes Based Education (OBE).

The term *curriculum* needs to be clarified in terms of the new education, training and development system. There are many diverse definitions of the term *curriculum* as it means different things to different people, hence the confusion when discussions about curriculum take place. It is apparent that in the South African context particularly, curriculum is a broad concept including aspects such as standard setting, learning programme development and delivery as well as the quality assurance of the delivery process (South Africa 2002:6).

Figure 1 Curriculum design and development in the new education, training and development environment



Standard setting, learning programme development and delivery as well as the quality assurance of the delivery process are linked and create the concept of a quality cycle. The standards developed through the participatory and representative structures and processes of the Standard Generating Bodies (SGBs) are then registered on the NQF and will have their delivery and achievement quality assured through the Education and Training Quality Assurance (ETQA) system. It is in assuring the quality of both the standards and learner achievement that the quality cycle of the NQF is completed.

The South African Qualifications Authority (SAQA) hosts all qualifications and is responsible for the quality assurance of the Sector Education and Training Authorities (SETAs). Coherence, sustainability and articulation possibilities are acquired as the new education, training and development system requires conformity to the mentioned quality standards. The SETAs are allocated per industry and are responsible for compiling the unit standards and qualifications via the appointed SGBs. SAQA will then register the unit standards and qualifications on the

NQF. The SETAs are also responsible for the Education and Training Quality Assurance of the accredited Service providers as well as learner achievement.

Qualifications, as aforementioned, are constructed by means of a compilation of unit standards and are pitched on a NQF (National Qualifications Framework) level. A qualification is a planned combination of learning outcomes that has a defined purpose and provides learners with applied competence and a basis for further learning. Unit standards are the minimal requirements for a specific learning initiative and are set out by the specific outcomes and assessed against the assessment criteria of that specific unit standard. Specific outcomes are the demonstrated competencies a learner would acquire during the education, training and development initiative. Assessment criteria encompass the evidence that an assessor of the unit standard will collate in determining whether the learner is competent or not yet competent in terms of the specific outcomes of the unit standard.

The NQF is a congregation of all the qualifications and unit standards in the South African education, training and development environment. The NQF sets in place standards and qualifications that become the starting point for learning programme design, development and delivery. Registered qualification and unit standards of the NQF are described in terms of the learning outcomes that a learner will have to achieve. Hence the underlying commitment to a system of education and training that is organised around the notion of learning outcomes. The NQF currently consists of 8 levels. These levels are an indication of the difficulty of the learning encountered. An in-depth description of SAQA, NQF and the standards can be found in chapter 3.

South Africa chose to bring about systemic changes in the education, training and development system when it was decided to change the manner in which education, training and development would function in a system, how it is organised and the vision that drives participants within the system. Spady (1994:29) makes the point that OBE is not about curriculum change but about changing the nature of how the

education system works. OBE is primarily about systemic change and not curriculum change. The NQF in its commitment to a system of education and training that is organised around the notion of learning outcomes, displays the notion that OBE in that the new education, training and development system is about systemic change (SAQA 2000 (d):11).

It is in these learning outcomes that the CCFOs reside. The CCFOs are the qualities SAQA wishes all learners to demonstrate at the end of any learning programme at any level of the NQF. The CCFOs are indicated in the unit standards and qualifications as separate headings that formulate the specific outcomes and assessment criteria. See Addendum A for an example of a unit standard.

The CCFOs adopted by SAQA (SAQA 1998(a):18) are the following:

"Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made
Work effectively with others as a member of a team, group, organisation, community
Organise and manage oneself and one's activities responsibly and effectively
Collect, analyse, organise and critically evaluate information
Communicate effectively using visual, mathematical and/or language competencies in the modes of oral and/or written presentation
Use science and technology effectively and critically showing responsibility towards the environment and health of others
Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation"

In order to contribute to the full personal development of each learner and the social and economic development of the society at large, it must be the intention underlying any programme of learning to make an individual aware of the importance of:

"Reflecting on and exploring a variety of strategies to learn more effectively
Participating as responsible citizens in the life of local, national and global communities
Being culturally and aesthetically sensitive across a range of social contexts
Exploring education and career opportunities
Developing entrepreneurial opportunities"

1.2 RATIONALE

Though CCFOs have been acknowledged in education, training and development policies, not much research has been done on the topic. It is therefore difficult to source information on the topic. Policy documents and SAQA and NQF-related documentation as well as relevant references made in policies are used to investigate the CCFOs.

Existing information on the CCFOs is as follows:
Curriculum 2005 (Department of Education 1995(a):28) describes CCFOs as the expression of the intended results of education and states that these outcomes underpin all learning processes, thus enhancing learning processes in all facets. It also refers to the CCFOs as working principles, and as such they should direct training and education practices and the design and development of learning programmes and complement the learning materials. The White Paper on Education and Training (Department of Education 1995 (b):7) states in this regard that the curriculum, methods of facilitating and textbooks at all levels and in all programmes of education and training should encourage independent and critical thought. It is assumed that the CCFOs, according to aforementioned text, must be integrated into the entire curriculum development, implementation and assessment phases of education, training and development. The White Paper (Department of Education 1995(b):7) further indicates that learners must have the capacity to question, enquire reason, weigh evidence and form judgements, achieve understanding, recognise the provisional and incomplete nature of most human knowledge, and communicate clearly. The mentioned competencies only refer to cognitive competencies and

exclude the emotional/social competencies entirely. The terms *skills* and *competencies* are used interchangeably in the literature and a discussion of these terms can be found in chapter 3.

CCFOs are generic and cross-curricular (Department of Education 1995(b):28) and are not restricted to any specific learning context, but inform the formulation of specific outcomes in the individual areas of learning for all learners at all levels on the NQF. They are not generated in one sector of education and training only, but across sectors in a process of consultation among stakeholders.

No prescriptions have been provided for the implementation of the CCFOs. “There is no prescription in any of the SAQA regulations or requirements of how these outcomes are to be incorporated and developed” (SAQA(c) 2000:20). It is mandatory for unit standards setters, according to Olivier (2002:28), to incorporate at least some CCFOs in the standards that they recommend. Proposers of qualifications must ensure that all CCFOs have been addressed appropriately at the specific level concerned within the qualification being proposed. This is problematic, as the so-called proposers of qualifications and service providers do not have a consistent concept of what the CCFOs entail.

CCFOs are widely encountered in unit standards, as policies on generation of unit standards oblige SGBs to incorporate at least some of the CCFOs by selecting the CCFO statements relevant to the unit standard. CCFOs are part of the Unit standards as one of the sub-headings. Service providers, SGBs, Education and Training Quality Assurance (ETQA) Managers and Education, Training and Development Practitioners (ETDPs) comply with legislation in that the CCFOs are quoted and referred to in the Unit standards and an indication is provided as to how the CCFOs are implemented per Unit standard. An example of this scenario is demonstrated in Addendum A. By doing the above-mentioned, the stakeholders ensure that they comply with legislation, but do not ensure that the outcomes are understood by the stakeholders or transferred and internalised by the learners.

However, only limited research on CCFOs has been done thus far. Various studies have been done on:

Policy for education, training and development (ETD)
Learning theories
Outcomes Based Education (OBE)
Curriculum Development
SAQA and NQF related policy and documentation

The literature is therefore limited in that it fails to:

Address the conceptualisation of the CCFOs
Identify the refined competencies that underpin the CCFOs

My research will therefore provide a conceptual understanding of CCFOs as prescribed by SAQA and identify the competencies that underpin them.

1.3 THE RATIONALE FOR ACTION RESEARCH

Action research is the main method for conducting this research. Other research methods could be implemented as led by the action research cycle and findings because of the eclectic nature of this research methodology I opted to conduct action research since I am actively involved in the education, training and development environment as a service provider. Action research and the applicability of this method to this research study are discussed in detail in chapter 2. When initiating this study I was responsible for the implementation of CCFOs in the education, training, and development environment in the company I was employed by. One of my responsibilities was to oversee the implementation of the CCFOs in the learning material. I realised that ETDPs are usually technical experts with possibly National education, training and revelopment practitioner qualifications. I soon came to the conclusion that a multitude of ETDPs do not value CCFOs and do not understand their intention or meaning.

During the same time I served on a sub-committee of the *Learning Material Development* under the auspices of the Mining Qualifications Authority (MQA). This sub-committee was responsible for implementing CCFOs in the mining industry. In order to implement the CCFOs in the learning material of the MQA, we drafted a model to understand the CCFOs, as these statements are only vaguely explanatory. During these meetings I realised that even the *core implementers,* being the Learning Material Development sub-committee of the CCFOs, do not have a clear understanding of what the CCFOs entail. The assumption is, however, that facilitators and assessors in the industry have a broad understanding of the CCFOs as it is covered in the ETDPs training prescribed by SAQA.

Previously, during my studies of quality assuring unit standards and currently prescribing leading practices for the implementation of CCFOs in practice, I noticed that CCFOs are being copied and pasted into unit standards as well as within qualifications. This situation has resulted in that respective stakeholders, SGBs and service providers complying with legislation and regulations, but CCFOs do not add value to the development of learners, as they are supposed to.

The collective process that is followed in this research study on the CCFOs intends to reach conclusions about:

An understanding of the concept of CCFOs
The identified underpinning competencies of the CCFOs

Action research is not about consultation but rather participation in order to improve the understanding of practice. In doing the aforementioned, I shall contribute to the practice of ETDP in that the conceptual understanding and the identified competencies can support the implementation and understanding of the concept of CCFOs.

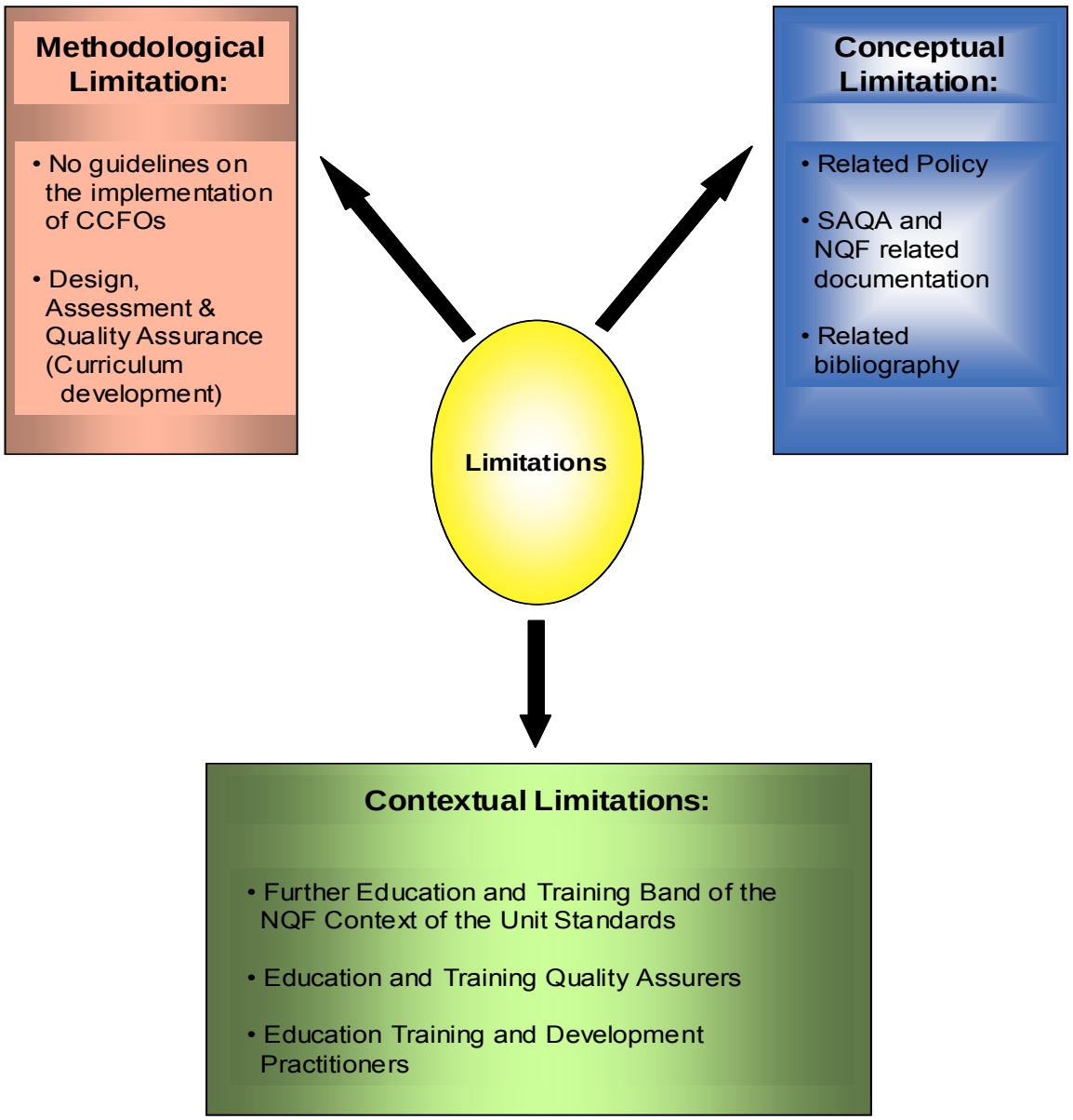
Findings from this research could be useful to improve practice and enrich the knowledge base of:

- Education, training and development practitioners
- Policymakers with regard to best practice in training in organisations
- Service Providers (including my own practice)
- Assessors
- Education and Training Quality Assurors (ETQAs)
- Training Managers

1.4 LIMITATIONS OF THE RESEARCH

The ensuing text describes the limitations of the research. A visual representation of the limitations of the research is provided initially which is discussed in the figure below.

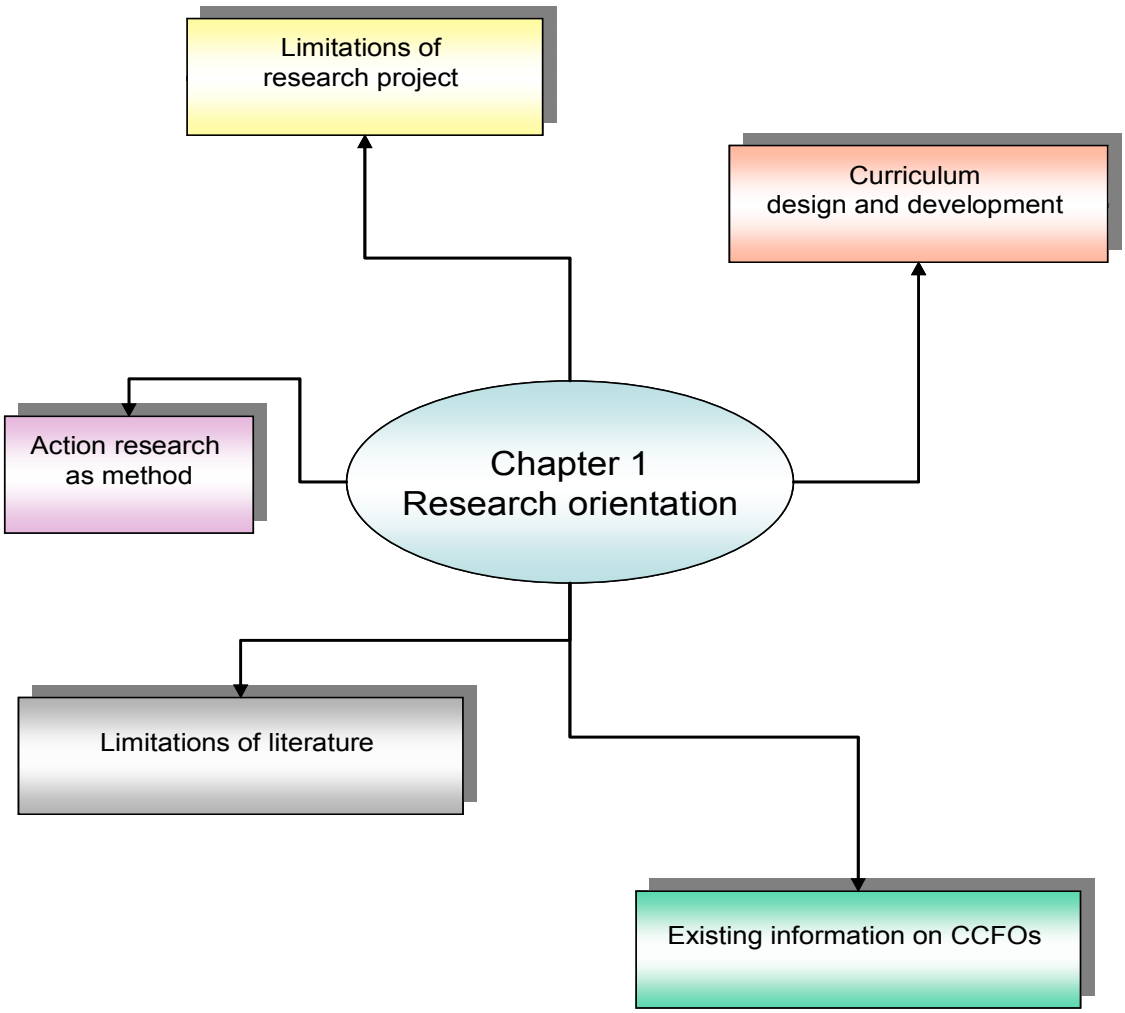
Figure 2 Limitations of the Research



1.5 CONCLUSION

This chapter provides insight into the research orientation as an attempt to become conversant with the research project. Figure 3 represents the orientation of the research project. Curriculum design and development as part of in the relatively new education, training and development environment is discussed to provide insight as to where the CCFOs reside in the system. Existing information on the CCFOs are discussed and the limitations of such information are highlighted. Action research as the method to explore the conceptual understanding of the CCFOs in an attempt to identify their underpinning competencies is subsequently outlined. This chapter is followed by a description and discussion of the research design.

Figure 3 Conclusion to chapter 1



CHAPTER 2: RESEARCH DESIGN

2.1 INTRODUCTION

The cornerstone of this research is that knowledge of the CCFOs is constructed from practice (ETDPs and ETQAs) and that practice informed by knowledge is an ongoing process. Action research and practical experience may be the foundations of educational research, and research may inform practice and lead to action (Zuber-Skerritt 1992:11).

This chapter outlines the action research design. The critical research questions of the research are provided. I do not consider myself to be an expert in conducting an enquiry with research subjects, but rather a co-worker conducting research with and for the ETD practitioners. The conceptual understanding of the CCFOs is problematic to the ETDPs and is therefore considered as a real problem that needs actual improvement (Zuber-Skerritt 1992:13). The results of this research on the CCFOs are not assumed to provide right or wrong answers to the research questions, but rather solutions based on interpretations and views of the ETDPs and ETQA managers.

The main research paradigm concerning the scientific orientation, theoretical perspective, methods and methodologies, data capturing and analysis and interpretation and validity of the research are discussed in this chapter. Action research entails the art of acting upon the conditions one faces in order to understand or improve the situation or practice. The following sub-section describes the purpose statement of the research.

2.2 STATEMENT OF THE RESEARCH FOCUS

The purpose of this research is to report a concept analysis of the CCFOs within the context of the education, training and development environment within the South African Qualifications Authority (SAQA) National Qualifications Framework (NQF).

2.3 CRITICAL RESEARCH QUESTIONS

The following clusters of critical research questions, with respective sub-questions, are addressed in this report:

The first cluster of research questions
The questions in this cluster relate to the description and legislative documentation of the CCFOs as it relates to curriculum design and development.

How do SAQA and relevant legislation describe CCFOs?
How does the relevant documentation describe the origin of CCFOs?
In what terms do policy and related documents refer to and explain the CCFOs?
How do the CCFOs contribute to curriculum design and development with reference to the legislation and relevant documentation?

The second cluster of research questions.
This cluster of questions focus on the theoretical underpinning of the CCFOs.
What theoretical groundings describe CCFOs?
How could CCFOs be described in terms of the theoretical grounding?
What underpinning refined competencies describe CCFOs?

Research question 3
What is the conceptualisation of the Education and Training Quality Assurers (ETQA) and education, training and development practitioners (ETDPs) regarding CCFOs?

The scientific orientation provides the paradigm in which the answers to the research questions are sought.

2.4 SCIENTIFIC ORIENTATION

This research intends to reach a conceptual understanding of the CCFOs, with a view to improving the understanding of the concept leading to the improvement of practice regarding the CCFOs. Because of the emancipatory nature of the study, no specific theory will be allocated as no single theory encapsulates the meaning of the CCFOs. It is necessary according to Zuber-Skerritt (1996:158) to work flexibly and eclectically in order to respond to the unique demands of the current education environment.

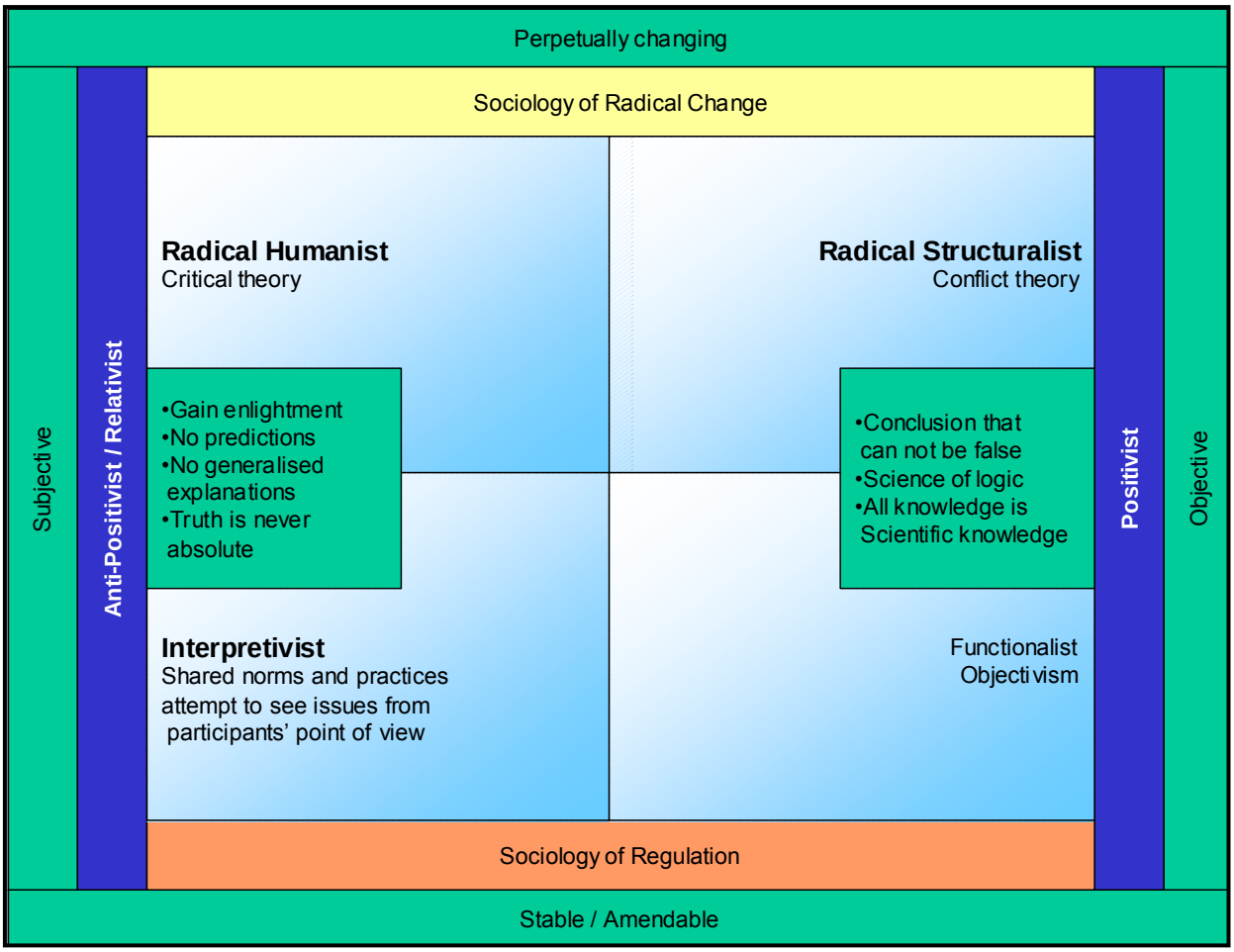
The following pluralist research strategies are implemented:

Pluralism suggests that there is no *correct* approach. As no single method can ever capture all the richness and complexity of reality, the use of a variety of approaches will allow a more complete understanding of the phenomenon to be built up.

Eclectics A mixture of the best from a variety of approaches will be most fruitful for this specific problem (Burell et al. 1979:34).

Burell and Morgan (1979:18) explain basic ontological assumptions and provide examples of how ontological assumptions lead to epistemological views. Epistemological views lead to different research methodologies (Burell & Morgan 1979:18).
The structure and framework provided by the mentioned authors serve as basis for constructing a theoretical framework for this study. Figure 4 provides a visual representation of the ontological assumptions and epistemological viewpoint.

Figure 4 Ontological assumption and Epistemological view



With reference to the green outer frame of the figure above, "Different points of view concerning reality" (Burell & Morgan 1979:20) can be summarised as *objective* or *subjective*. These views serve as two ends on a continuum on views of reality: "…the world is or is not organized as our preconceptions lead us to expect us and suggest grounded ways of understanding it" (Greenwood & Levin 1998:68).

An objective view assumes that measuring instruments are independent of the observer, and they can be used to describe all aspects of reality fully (Burell & Morgan 1979:20). Greenwood and Levin (1998:68) support this statement in that logical positivism is based on the ontological argument that the world is objectively given; the epistemological effort is to apply objective methods to acquire the truth.

Henning, van Rensburg and Smit (2004:17) describe the positivist view of the world as science that is seen as the way to get at truth, to understand the world in such a way that it can be controlled by a process of prediction.

A subjective view assumes that each individual is unique and that the world can only be partially communicated and understood "…the ontological position that the world is subjective and the epistemological project is to make interpretations of the subjective world" (Greenwood & Levin 1998:68). Scientific methods, according to Henning et al. (2004:20) can only provide an approximation of the truth and uncertainty is a key principle of this paradigm. Cohen, Manion and Morrison (2000:19) state in this regard that anti-positivist approaches agree that the social world can only be understood from the standpoint of the individuals who are part of the ongoing action being investigated.

This research study supports the subjective side of the continuum, as the ETQAs and ETDPs describe the CCFOs in their own perspectives. A CCFO cannot be objectively captured; there are multiple interpretations of the CCFOs.

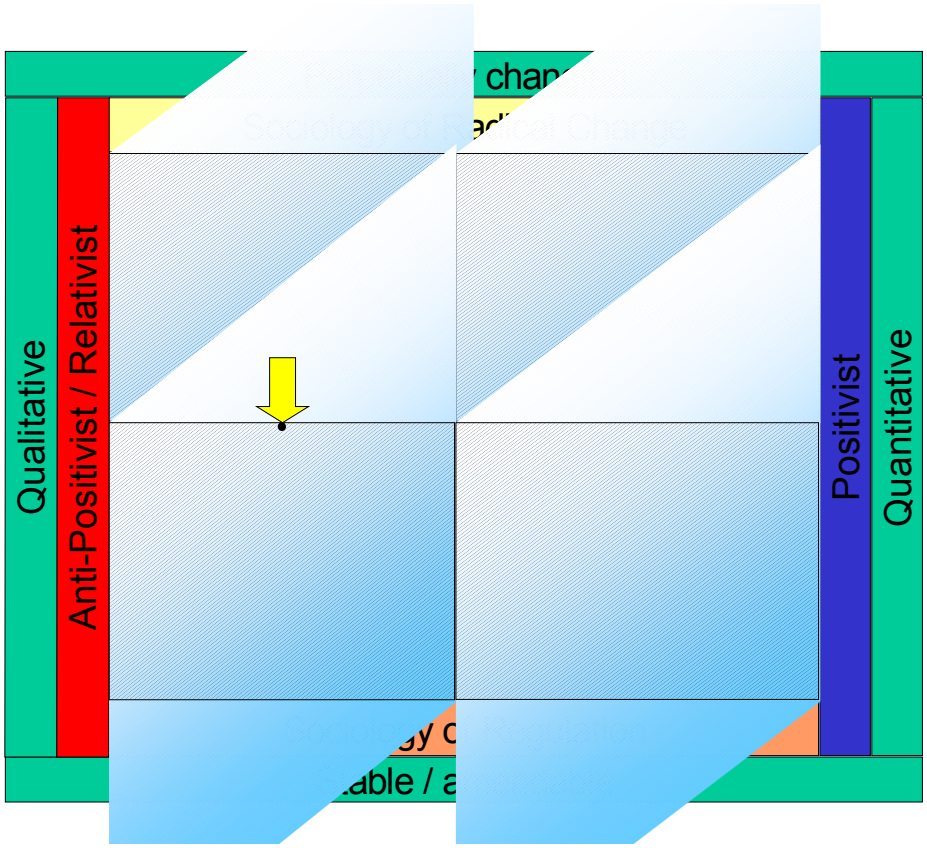
Burell and Morgan (1979:22) consider the assumptions about the nature of society as "stable and amenable to consensus (orderly) or naturally turbulent, perpetually changing". The context of the Education and Training Quality Assurors differ, as well as the content and nature of the knowledge that determine the level of understanding of the CCFOs. Therefore this study endorses the perpetually changing nature of society. The CCFOs are outcomes that industry needs to conform to as set out by SAQA, therefore the sociology of regulation, combining these two dimensions produce a two-dimensional table of different groups of social theories. The epistemological view of this study is more anti-positivist than positivist, as the research seeks to understand knowledge and gain insight into the concept of the CCFOs. The epistemological view of this study does not try to find "generalized explanations or make predictions" (Burell & Morgan 1979:25), but instead aims at understanding a particular situation and interpreting it.

The research approach is a combination of interpretivist and critical theory. The research focus in critical theory is on specific groups (Cohen et al. 2001:35) within society; that include the SETAs, ETQAs and ETDPs. Furthermore, specific individuals of the groups are participating, namely Education and Training Quality Assurance (ETQAs), also referred to as ETQA managers due to the job descriptions of the SETAs. Small-scale (Cohen et al. 2001:35) research is conducted because of the structure of SAQA and the SETAs. The CCFOs are collective in nature in that all SETAs ETQAs, ETDPs and service providers ought to interpret and implement the CCFOs in training and development. The research seeks to understand the significance of CCFOs: their origin, intention and underpinning competencies. Henning et al. (2004:22) state in this regard that critical theory is essentially a process of deconstruction of the world. Also, people can design their own worlds (Henning et al. 2004:23). The framing of meaning in a context has consequences (Henning et al. 2004:23), thus the way in which an ETQA interprets the CCFO will consequently influence the way in which the related SETAs and service providers will interpret the CCFOs. This research is of emancipatory interest.

The research presents the concept of CCFOs from the ETQAs and ETDPs' own views. Interpretive research according to Henning et al. (2004:20) is informed by participating practitioners. According to Cohen et al. (2001:23) it is essential to "…begin with individuals and set out to understand their interpretations of the world around them". As the CCFOs are to be interpreted by the stakeholders, an approximation of the concept can be provided as each industry and field and levels differ from one another. There are different frames that shape and construct meaning.

Figure 5 provides a summary in the format of a framework for the scientific orientation of this research as discussed in the preceding text.

Figure 5 Research-specific scientific orientation



Research methods pertaining to this research project are discussed in the following section.

2.5 RESEARCH METHODS

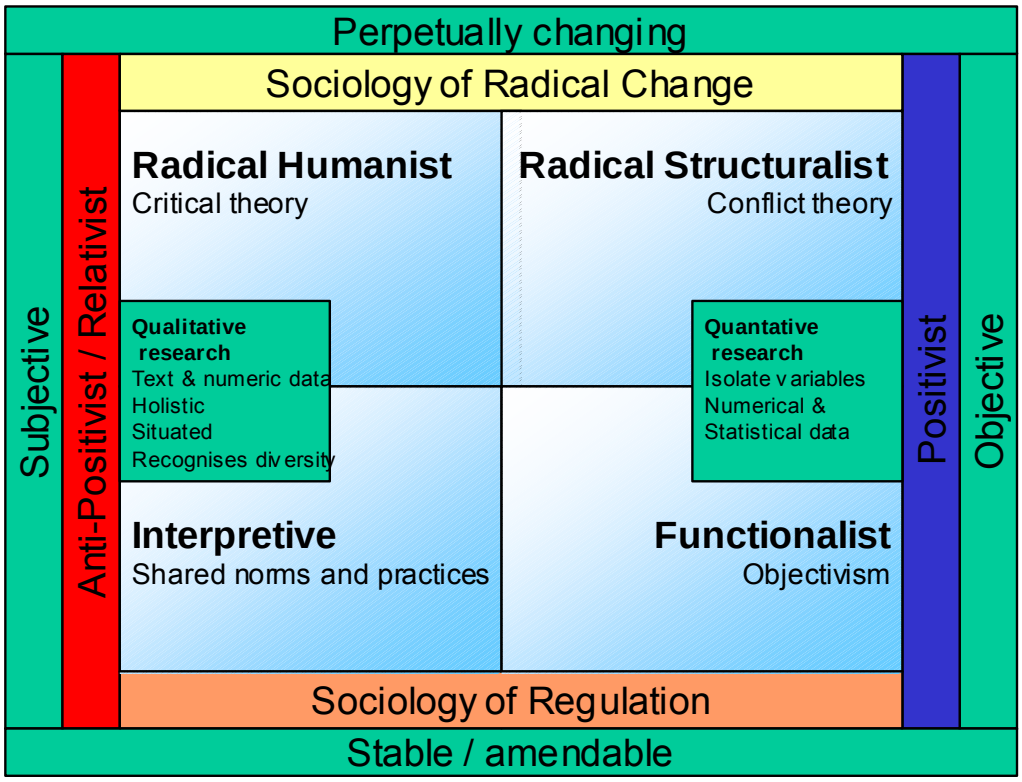
Qualitative research methods are implemented in this study. Qualitative research is carried out when anti-positivist research paradigms are adopted (Burell & Morgan 1979:30). Newman discusses the different methodologies and provides the following table on the difference between the qualitative and quantitative style of research (1997:14).

Table 1 Research styles

Quantitative style	Qualitative style
Measures objective facts	Constructs social reality, cultural meaning
Focuses on variables	Focuses on interactive processes, events
Reliability is key	Authenticity is key
Value-free	Values are present and explicit
Independent of context	Situationally constrained
Many cases, subjects	Few cases, subjects
Statistical analysis	Thematic analysis
Researcher is detached	Researcher is involved

Figure 6 below provides a framework of research methods in correlation to scientific orientation as derived from the preceding text. This is followed by a discussion on the specific research method of this study.

Figure 6 Research Methods



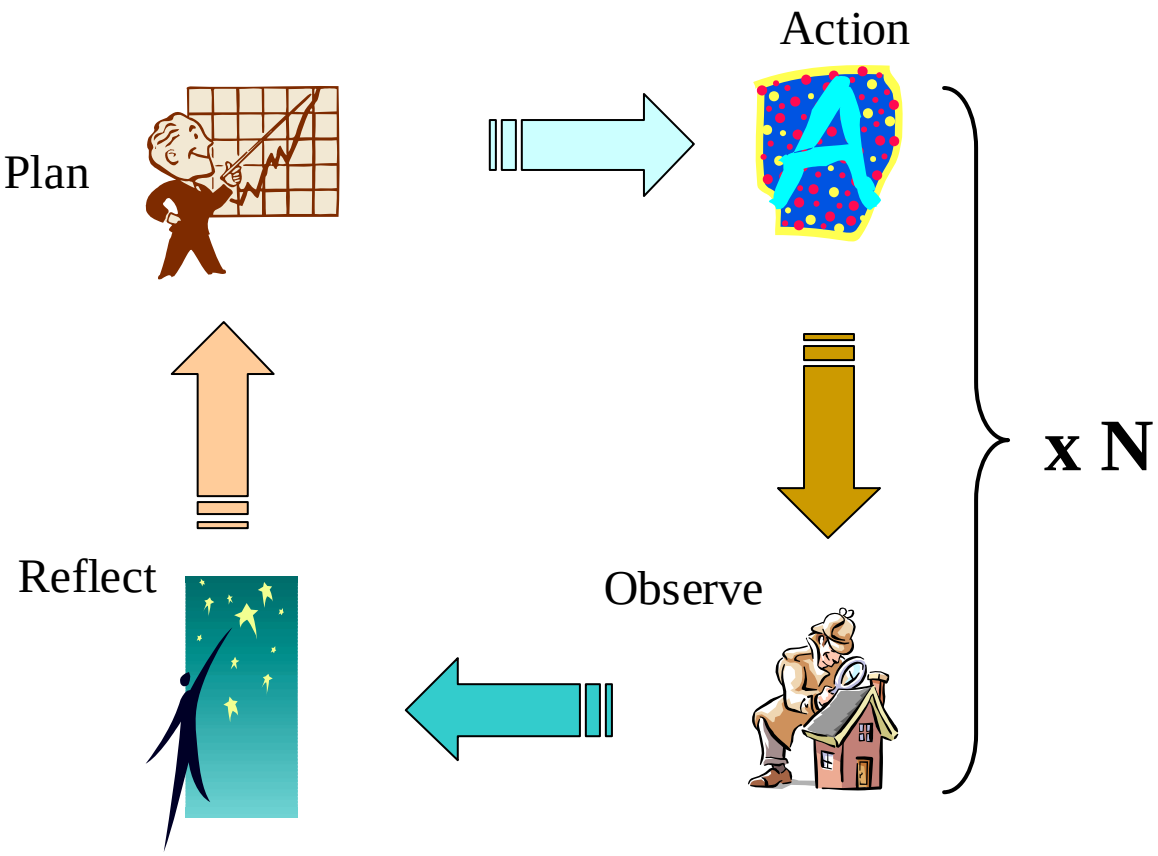
"To be scientific, social research must be socially engaged" (Greenwood & Levin 1998:195). Action research according to Henning et al. (2004:23) is one of the major concomitant methodologies of critical theory. I opted to work in the action research paradigm since I am involved in the ETDP environment as a private service provider. As a point of departure and to the purpose of collecting baseline data, I facilitated a workshop on the CCFOs with ETQA managers of the respective SETAs. "Action research is implemented with the participation of the people for whom the intervention is designed, usually with their help and with the aim of emancipation for the participants" (Henning et al. 2004:47). Action research according to Burell and Morgan (1979:35) can be considered to be a special example of Case Study Research. Action research, according to Zuber-Skerritt (1996:14) refers to ways of investigating professional experience which links practice and the analysis of practice into a single productive and continuously developing sequence, with the attempt to have new thoughts about familiar experiences. Action research according

to Cohen and Manion (1994:194) is appropriate whenever specific knowledge is required for a specific problem. In this research the CCFOs are regarded as the specific problem and the ETDP environment as the specific situation. The development of understanding and the process of change in practice are two important claims of action research (Zuber-Skerritt 1996:14*).* The emancipatory benefit of action research is implied by the following quote from Zuber-Skerritt (1996:147):

Action research is a form of collective self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own social or educational practices as well as their understanding of these practices and situations in which these practices are carried out.

The following is a representation of the action research process as implemented in the proceeding chapters.

Figure 7 Action Research Process



This action research cycle repeats itself throughout the research conducted. Each step in the process is represented by a visual image. The following steps are pursued in the specific sequence:

- Plan
- Action
- Observe
- Reflect/analyse

Plan

The first planning step is conducted in this chapter and includes problem analysis and a strategic plan (Zuber-Skerritt 1992:11). The planning of the research design, drafting of research questions and planning for data collection and data analysis form part of the first planning step.

A number of research methods are employed to secure data (McKernan 1997:75). Data in a case study are collected during unstructured or semi-structured interviews and from unpublished documents and newspapers and magazine reports, and are analysed using an interpretive or phenomenological research paradigm (Burell & Morgan 1979:35). The data collection plan of this study is in accordance with this statement, as unstructured interviews and workshops are included.

The workshop is perceived as an open-ended group interview for the purpose of the study. Burell and Morgan (1979:35) maintain that case study methods have explanatory power and they reach conclusions by means of logical arguments. The workshop intends to have explanatory power and concludes the refined competencies of the CCFOs.

Action

The next step is that of action. Action includes the implementation of the plan. The action step entails the collection of the first set of data to understand the legislative perspective on the CCFOs. A theoretical grounding of the CCFOs follows in an attempt to better understand the CCFOs.

The phenomenon of CCFOs cannot be studied outside its natural settings as it serves the education, training and development environment. Variables cannot be easily isolated or accurately measured quantitatively.

Mouton (2002:150) states that studies that involve the subjects of research as an integral part of the design use mainly qualitative methods in order to gain understanding and insight into the life-worlds of the research participants. The research design of this study is classified as empirical research rich in data; it has plenty of primary data and has low control. Inductive reasoning, according to Garbers (1996:287), has no explicit conceptual framework and a hypothesis is generated as the research is implemented.

Action research, according to Burell and Morgan (1979:37), consists of two important components, namely “the process of generating change and generating knowledge”. Knowledge generated in the workshop is reminiscent of the underpinning competencies of the CCFOs. The data collected during the workshop and information collected in the policy documents and other text analysis are the source of the questionnaire.

Observation

Observation includes an evaluation of the action by appropriate methods and techniques. The evaluation of the action in this research is partly effected by questionnaires, as the intention of the questionnaire is to verify the findings of the action that took place in the first step of this cycle of the action research. Once a list of the competencies has been created from the theoretical grounding, the workshop is conducted to verify the mentioned process.

Reflection

Reflection implies reflecting on the results of the evaluation and on the whole action and research process and may lead to the identification of a new problem. Hence a new cycle of action research can be initiated. Reflection in the first cycle of the action research process entails the CCFO workshop and includes the verification of the identified competencies by the ETQA managers. The data are then analysed and categorised in order to use the condensed list of competencies for the purpose of constructing the questionnaires.

2.6 QUESTIONNAIRE

Questionnaires are utilised to validate the underpinning competencies as identified during the CCFO workshop. “A good questionnaire forms an integrated whole” (Neuman 1997:233). The questionnaires are created according to the spider cobweb categories this is done to so they flow smoothly. Introductory remarks and instructions are provided for clarification.

The following aspects were attended to while constructing the questionnaire in order to prevent common errors from happening. The construction and findings of the questionnaires are discussed in chapter 5. This section on the questionnaire attempts to provide insight into the action research processes that follows.

No negatively stated questions are asked. The ranking format used prevents a poor and confusing questionnaire. The instrument is not too long; only six components of the spider web model are covered in the questionnaire. Mono-operational bias (Mouton 2001:104) is avoided; single construct measurement is avoided by selecting a ranking order where the respondent is expected to rank the competencies per category, which enables a relative degree of preference, priority and intensity to be charted (2001:252). No double-barrelled questions are used. The competencies are well defined and explained in the questionnaire. A pilot run is done on the questionnaire before distributing it to the identified target population. The questionnaire is piloted to increase the reliability, validity and practicability (Cohen et al. 2001:252). The clarity of the questionnaire is checked, ambiguities or difficulties in wording is eliminated, feedback on the type of questionnaire, attractiveness and appearance, layout, time taken to complete are established and the effectiveness of the drop down lists provided to rank the competencies are confirmed.
Addendum C provides examples of the questionnaires.

The cyclic processes of the research are indicated in the report as the process matures and are indicated by the mentioned visual images as stated before.

The following text discusses and argues the advantages for selecting and implementing action research and why action research is applicable to this study.

McKernan (1997:76) provides the following table on advantages and disadvantages of action research methodology. These issues, concurrent with characteristics of action research in correlation to this specific research study, are addressed in the text that follows.

Table 2 Advantages and disadvantages of action research

Advantages	Disadvantages
Reproduces phenomenological world of participants through detailed description of events Presents a credible and accurate account of the setting and action Uses multi-methods to corroborate and validate results Tells a story in language that a layman and practitioner can understand Data are 'representative'	Extremely time-consuming Results are suspended until action is concluded The researcher may have a priori assumptions which influence interpretations The researcher can be 'taken in' by respondents and informants in the field No generalization Idiosyncratic and interpretive nature Data base usually supplied by researcher Costs Training

The following characteristics (Burell & Morgan 1979:7) of action research are adhered to in this study:

It is a science of practice that is, applied within the real or natural context and not in a laboratory. This research is implemented in the education, training and development environment – an environment that is in practice. The workshop was conducted on site with the ETQAs.

It is a collaborative process in which I as the researcher and the other participants are jointly involved in seeking insights. The ultimate purpose of the workshop is to refine the underpinning competencies of the CCFOs. As no in-depth descriptions or refined competencies for the CCFOs exist, new insights are sought. This research is therefore a learning process and encourages and stimulates the quest for conceptual understanding of CCFOs.

As it is a process, it is part of an ongoing search for better ways of doing things. It does not usually produce final solutions although it may produce partial solutions, improvements or even errors that indicate the need to change direction. This research intends to clarify the meaning of the CCFOs.

A hypothesis is not proposed before the data collection is started, as is the case with positivist research, but the researcher attempts to keep an open mind, allowing theories to emerge. Whereas the CCFOs have not been analysed in terms of theoretical perspectives, this research intends to do so to complement their conceptual analysis. It is therefore accepted that there is a great deal of uncertainty in the identification of the theories underpinning the CCFOs. Complexity and uncertainty are inevitable and acceptable.

Contradictions and areas of conflict or differences of opinion are actively sought; hence the implementation of the workshop. More than one opinion of point or view is sought, partly to uncover problems and partly to validate conclusions. The questionnaires together with the workshop and text analysis validate the

conclusions. This type of research is therefore low on control. Limitations of action research (Mouton 2002:151) imply that a small number of cases and low degree of control affect overall generalisation and the possibility of strong causal and structural explanations.

The data collected are largely in the form of text and largely unstructured. Historicity is recognised. The decision and actions taken here and now are unlikely to be the same as those chosen yesterday or tomorrow, by other actors, or in some other places, because of the difference in opinion and lack of guidelines regarding the refined competencies of the CCFOs. It is therefore not a system of accumulated certainties (Zuber-Skerritt 1996:18). Because it is action and learning oriented, the research is by definition relevant.

Interpretive enquiry, unstructured observation and open interviewing are ways to capture knowledge (Henning et al. 2004:20) with key words in the methodology of critical theory being participation, involvement and collaboration. Data collection in action research includes but is not limited to the following: collection of documents, observation, interviews, written descriptions of meetings and triangulation.

The table that follows provides a framework of the data collection plan as well as the layout of the data to be collected according to the research questions. The table also determines the effectiveness and sufficiency of the data collected per research question.

Table 3 Data collection plan

CRITICAL QUESTION	*SUB-QUESTION*	*LITERATURE REVIEW*	*TEXT ANALYSIS*	*WORKSHOP*	*POLICY DOCUMENTS*	*INTERVIEWS*	*QUESTIONNAIRE*
How do SAQA and relevant legislation describe CCFOs?	How does the relevant documentation describe the origin of CCFOs?	✔	✔		✔	✔	
	In what terms do policy and related documents refer to the CCFOs?	✔	✔		✔	✔	
	How does SAQA prescribe the implementation of CCFOs?	✔	✔		✔	✔	
	How do the CCFOs contribute to curriculum development with reference to legislation and relevant documentation?	✔	✔	✔	✔	✔	
How do theoretical perspectives and ETQAs describe CCFOs?	What theoretical perspectives describe the CCFOs?	✔	✔			✔	
	How could CCFOs be described in terms of the mentioned theories?	✔	✔	✔			
	What underpinning refined competencies describe CCFOs?	✔	✔	✔		✔	✔

What is the conceptualisation of the ETQAs regarding CCFOs?				✔		✔	✔

The table provides the data collection plan and various methods of information collection. It also indicates that the data collection method for each research question is sufficient and that the methods are effective for the purpose of data collection.

2.7 ETHICS CONDUCTED

In qualitative research and specifically action research where stakeholders form an integral part of the research, ethical consideration is essential. The research should ensure that stakeholders are consulted and all accept the principles guiding the work in advance (Zuber-Skerritt 1996:16). "Full information", (Cohen et al. 2001:50) implies that the participants are fully informed of the research and research objectives. Cohen et al. (2001:68) also use the term "observe protocol" by which they indicate that the participants are fully informed, consulted and that the necessary permission and approval have been obtained. The workshop was planned and designed in consultation with SAQA. Informative letters were sent to the SETAs and ETQA managers well in advance. Addendum B reflects the CCFO Workshop layout. My intention was to inform the participants so that they could comprehend and understand the nature of the research.

All participants must be allowed to influence the work; those who do not wish to participate must be respected (Zuber-Skerritt 1996:16). This supports the "informed consent", especially the "voluntarism", mentioned by Cohen et al. (2001:50). Voluntarism ensures that the participants freely choose to take part or not. The participants of this research were invited to attend the workshop and were under no

obligation to attend. Negotiation among the participants and me as the researcher ensured that the wishes of the participants were taken into consideration.

The development of the work must be visible and open to suggestions from others (Zuber-Skerritt 1996:16). The researcher acts as moderator of the workshop and has no opinion. Progress of the workshop is reported and written on the flip charts, and remains open for suggestions. Authorisation from the participants is explicitly obtained by verbatim transcripts of the identified and nominated competencies.

Permission must be obtained before making observations or examining documents (Zuber-Skerritt 1996:16). This is ensured by means of the informative letters sent out prior to conducting the workshop.

The researcher must accept responsibility for maintaining confidentiality (Zuber-Skerritt 1996:16) but retains the right to report on the work, provided that the participants are satisfied with the fairness, accuracy and relevance. Responses will remain anonymous during the workshop.

Access and acceptance were gained via SAQA in that the outline of the workshop and objective of the research were discussed during the very early stage of the research. Mr Samuel Isaacs, Chief Executive Officer of SAQA, is the main contact person to gain access and acceptance in this regard. He channels the process to the appropriate stakeholders, as the respective SETAs report to SAQA.

2.8 PLANNING FOR DATA ANALYSIS

Qualitative research methodologies were utilised. When using qualitative analysis the researcher "…elicits meaning from the data in a systematic, comprehensive and rigorous manner" (Henning et al. 2004:127). Qualitative analysis according to the mentioned authors, takes place throughout the data collection process." Qualitative inquiry's annalistic pendulum is constantly in motion" (Denzin & Lincoln 2000:487).

Before analysis can begin, data are transcribed which means that text from a workshop and interviews are processed (Henning et al. 2004:127).

Data analysis techniques include but are not limited to: scanning and cleaning data, organising data and re-presenting data. Data are organised, reduced and described (Henning et al. 2004:127). Scanning the data requires preparation of the raw data for the analysis by reading the data, checking for incomplete, inaccurate or irrelevant data and identifying trends in the scanned data to facilitate the organisation of the data into meaningful sub-components. “Data segments are organised into a system that is predominantly derived from the data, which implies that the analysis is inductive” (Henning et al. 2004:127).

Descriptions and categorisation are to be implemented, as information needs to be arranged in a manageable format. Conceptual understanding of the CCFOs is created in the data clarification and connections are made between the concepts that in turn provide the basis for a fresh description of these. Comparison is utilised to define conceptual similarities and to discover patterns. “Categories are flexible and may be modified during the analysis” (Henning et al. 2004:127). Descriptions of meaning (Henning et al. 2004:129) form the basis for the analysis and are carried out by the researcher. When a category is assigned, the process of “coding” (Henning et al. 2004:127) is implemented.

It is important to note that the analysis should truly reflect the participants’ perception. It is important to note though that the participants are only human beings and perceive and define situations and the concept of CCFO according to their own understanding and motivations. “Inconsistencies and contradictions in humans do exist” (Henning et al. 2004:128). Social forces, pressure to conform and fear of embarrassment and conflict may also distort participants’ perception and intensions. “Pure rational accounts of respondents’ intentions cannot be expected” (Henning et al. 2004:127).

Word counts (Denzin & Lincoln 2000:776) are useful for discovering patterns of ideas in any text, from field notes to open-ended questions. This kind of analysis considers neither the context nor mode of the words used (negative or positive) but is useful to identify constructs. Word counts were implemented on the findings of the workshop as well as the theoretical text.

Triangulation, "coming from various points or angles towards a 'measured position' to find the true position" (Henning et al. 2004:103) is adhered to. Different theoretical perspectives are incorporated to identify the underpinning competencies of the CCFOs as well as the perspectives of the ETQA managers and ETDPs.

2.9 VALIDITY AND RELIABILITY

"Validity is an important key to effective research" (Cohen et al. 2001:105). To validate is to check, question, to theorise and to discuss and share research action (Henning et al. 2004:148). The theoretical component of the research explains the phenomenon that is the CCFO (theoretical validity). One way of validating is to ask people, especially the research participants. The workshop format ensures that the information provided by the participants is validated in that the researcher acts as moderator while conducting the workshop. This means that the information is questioned and discussed with the participants during the course of the workshop; checking whether the participants agree on the data presented. The researcher tries to catch the meaning, interpretations and intentions of the participants (interpretive validity). Participants are also asked continuously whether the information makes sense or not, and to identify the main themes; the research can therefore be considered to be a rationalised version of reality. "The findings of the researcher must accurately describe the phenomena being researched" (Cohen et al. 2001:107). This accuracy refers to the internal validity. Internal validity according to McMillan and Schumacher (1993:391) refers to the degree to which the explanations of the phenomena match the realities of the world. External validity refers to the generalisability and in qualitative research it addresses comparability and transferability (Cohen et al. 2001:109). This research provides sufficiently rich data

for readers and users of the research to determine whether transferability is possible. All the CCFOs were addressed in the workshop in order to define the underpinning competencies, thus the content validity was attended to.

Action research is conducted and "catalytic validity simply strives to ensure that research leads to action" (Cohen et al. 2001:111). Action research like catalytic validity is emancipatory in nature and empowers those who are being researched. Validity of qualitative data might be addressed through the honesty, depth, richness and scope of the data achieved, the participants approached and extent of triangulation (Cohen et al. 2001:105). "Triangulation demonstrates concurrent validity" (Cohen et al. 2001:112). Different methods were used to collect data, namely theoretical and text analysis (theoretical perspective), the CCFO workshop (participants' perspective) and the questionnaire.
Validity must be faithful to its premises. Cohen et al. (2001:106) provide anti-positivist principles and the ensuing text provides an indication of how this research complies with it.

The researcher is part of the researched world; the researcher acts as the moderator of the workshop and takes part in all proceedings. The researcher is the key instrument of the research rather than a research tool.

Data collected are descriptive in that the underpinning competencies of the CCFOs are identified. The data are presented in terms of the respondents rather than the researcher. The description of the CCFO is the truth as perceived by the participants. Reporting is done via the eyes of the participants. Respondent validation, as discussed earlier, is therefore important.

Cohen et al. (2001:106) suggest that understanding is a more suitable term than validity in qualitative data. The meaning that subjects present on data and inferences drawn from the data is important. The intensive personal involvement and in-depth responses of individuals secure a sufficient level of validity and reliability (Cohen et al. 2001:107).

Reliability in qualitative research is regarded as the fit between the recorded data and what actually occurs in the natural setting that is being researched. Qualitative research cannot be replicated, “that is their strength rather than their weakness” (Cohen et al. 2001:119). Reliability in qualitative research, according to Denzin and Lincoln (1994:101), can be addressed in several ways:

Stability of observation: The researcher can make the same observations and interpretation of the research if it has done at a different time or in a different place.

Parallel form: The researcher can make the same observations and interpretations of what was seen if attention is paid to other phenomena during the research conducted.

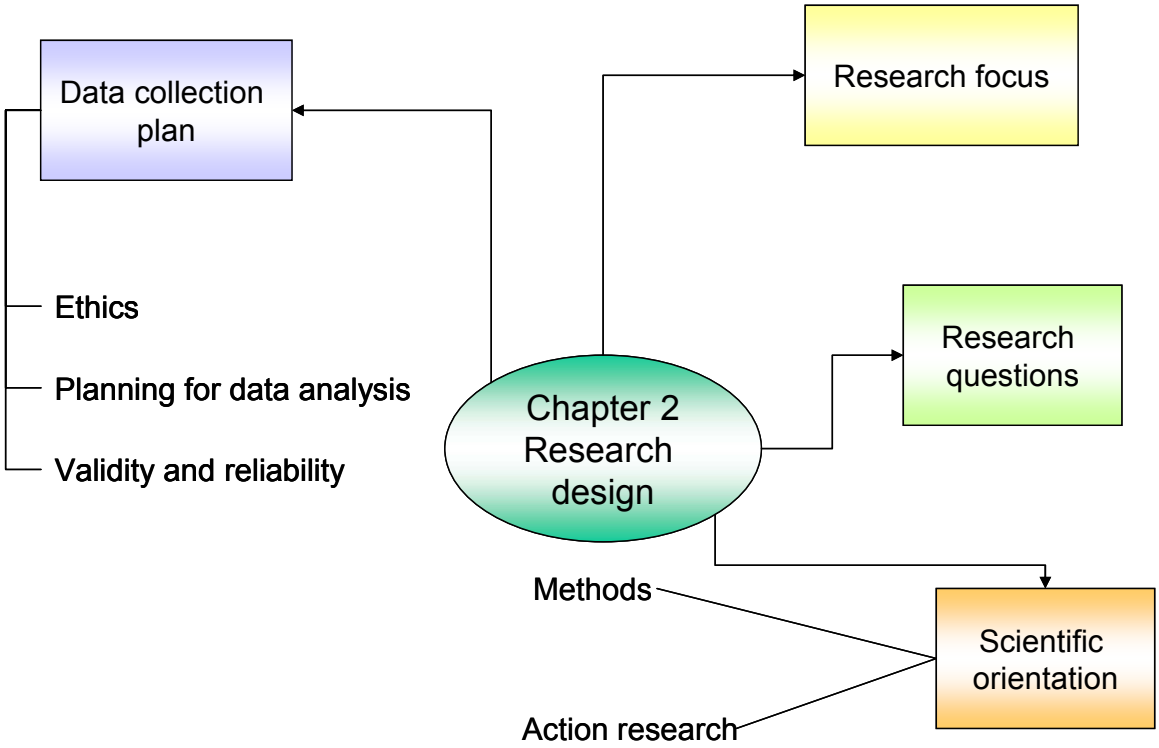
Inter-rater reliability: Another observer with the same theoretical framework, observing the same phenomena, will interpret the research in the same way.

2.10 ANTICIPATING THE REPORT OUTLINE

Chapter 1: Research orientation
Chapter 2: Research design
Chapter 3: Policy, legislation and relevant documentation are discussed and analysed to reach a conceptual understanding
Chapter 4: Theoretical perspectives on the CCFOs are analysed and refined competencies as per theoretical perspectives are identified.
Chapter 5: Empirical study
Chapter 6: Conclusion
Appenda
Bibliography

2.11 CONCLUSION

Figure 8 Summary on chapter 2

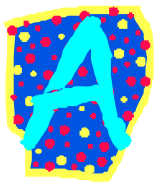


Chapter 2 reflects the research design. The research focuses together with the research questions are stated to determine the parameters of the research project. The scientific orientation from which the research methods are derived is maintained. Action research is considered to be the main research method and the rationale of the method is outlined. The plan for collection is explained and is governed by the ethical conformity of the research project. The proposed data analysis is stated and supports the validity and reliability of the research.

Chapter 3 initiates the investigation of the legislative perspective on the CCFOs.

CHAPTER 3: LEGISLATIVE PERSPECTIVE ON THE CRITICAL CROSS-FIELD OUTCOMES

3.1 INTRODUCTION



This chapter explores the legislative perspective of CCFOs. This chapter forms part of the "action" step in the action research process. An investigation on the policy documents as prescribed by the South African Qualifications Authority (SAQA) on the CCFOs is conducted. The explanation of the origin of the CCFOs is stated before the investigation is initiated.

3.2 ETIOLOGY OF THE CRITICAL CROSS-FIELD OUTCOMES IN THE CONTEXT OF THE SOUTH AFRICAN QUALIFICATIONS AUTHORITY

Documentation on the etiology of CCFOs is scarce. Discussions with stakeholders, like Mr Samuel Isaacs (Chief Executive Officer: SAQA), Christoph Vorwerk (Xasa Facilitating and consulting), Mrs Shirley Steenekamp: ETQA manager INSETA, Mr Joe Samuels (Deputy Director: SAQA), Mr Dugmore Mputing (Director: Standards Generating: SAQA) and Dr William Spady led to the understanding of the CCFOs. CCFOs are − according to the stakeholders − one of the transformational tools utilised by SAQA to ensure access, portability and lifelong learning.

The main theme derived from these discussions is that CCFOs underpin education, training and development initiatives. Any person undergoing education, training or development should demonstrate these qualities at the end of any education, training and development initiative, as the stakeholders refer to the CCFOs. In other words, after completion of any education, training and development initiative, a person should be a good communicator, be able to solve problems efficiently, work

effectively with others in a team and be organised and able to manage him-or herself effectively, amongst other competencies. Evidently these stakeholders know legislation by heart - hence the congruence in their opinion and legislation regarding SAQA and the NQF.

Bellis (2002) documented the evolution of the etiology of the SAQA. Though his explanation encompasses the etiology of SAQA and the NQF and not that of CCFOs per se, it is of importance to understand where CCFOs reside in terms of the Competencies Development initiatives of South Africa. Bellis (2002) was utilised as a main resource in this study, as no other documentation could be found that describes the etiology of SAQA and the NQF. Relevant documentation is cited as and where possible.

The origin of the NQF could be traced back to the labour movement of the early 1970s (SAQA 2000(b):3). The Black trade unions had job specific demands that employers rejected on the grounds that the workers were unskilled and therefore the demands were unjustified. Shortly after that − during the crisis in the country, in the late 80s and the early 90s, according to Bellis (2002:21) a forum was formed to discuss and find ways out of the chaos in education and specifically Black education. Certain institutions were privileged above others, because of the policy of unequal allocation of resources to learning institutions, based on race (South Africa 2001:3).

A body, the National Education Forum (NEF) was formed as a result of great pressure by the business community to bring the then government and the education community to the table. The then Minister of Education, according to Bellis (2002:21), announced the restructuring of education in an Education Renewal Strategy. Predominantly administrative structures were discussed and very little with regards to the real and urgent problems in the broad system of education, training and development was dealt with. The strong reaction that this move evoked fuelled the flames of determination to bring about change.

The National Training Strategy (NTS) was then compiled, but was never seriously debated and excluded important sections of the community; for this reason the Congress of South African Trade Unions (COSATU), in very clear terms, refused even to comment on the distributed document (Bellis 2002:21).

In the same year as the Education Renewal Strategy (ERS), namely 1992, a research project, mainly under an African National Congress (ANC) umbrella, but also involving a wide range of knowledgeable and active persons, resulted in a series of publications that became known as the National Educational Policy Investigation (NEPI). This work, according to Bellis (2002:22), was important as it discusses and makes proposals that proved seminal in many respects by covering the entire spectrum of education, training and development that brought about restructuring of the formal education system (SAQA 2000(b) :4).

The ANC published, via their education department, a Policy Framework for education, training and development in January 1994, followed by their Centre for Education Policy Development (CEPD), producing an Implementation Plan for education, training and development (IPET). In these documents the National Qualification Framework (NQF) was proposed. Initiated in 1992, with work more intensively done in 1993, a major project was in progress under the auspices of the then Minister of Manpower and the National Training Board (NTB). This consisted of a Task Team to whom eight committees reported, each responsible for researching an aspect of Education, training and development (South Africa 2000(c):5). Working Committee 2 of this project had proposed and developed the notion of an integrated National Qualification Framework (NQF) and communicated this in its Committee Report of November 1993. The final edited document of the Task Team *Discussion Document on a National Training Strategy Initiative* (NTSI) was published in April 1994. The result of this effort was the White Paper on Education, training and development, a number of Draft Bills and finally legislation regarding Education, a South African Qualification Authority and a National Qualifications Framework. These, according to Bellis (2002:21), subsequently constituted the basis of delivery structures and quality structures linked to the Competencies Development Act.

CCFOs reside in the structures provided by the South African Qualifications Authority (SAQA).

The etiology of SAQA, the NQF and The White Paper on Education, training and development are set out in the preceding text. The origin of the CCFOs is not clear from the above mentioned, though the assumption can be made that CCFOs serve the transformational attempts SAQA progressively initiates. The CCFOs are incorporated in the new Education, training and development system under the unit standards of the qualifications as registered at SAQA. Olivier (2003:21) states that qualifications are nationally agreed and internationally comparable statements of learning achievements, which are supported by the achievements of unit standards. The CCFOs are listed under the Notes section of a unit standard. See Addendum A for an example of a unit standard. Not all CCFOs need be addressed in a unit standard but, all CCFOs must be addressed in a qualification.

The South African Qualifications Authority and related documentation merely refer to the CCFOs, but provide no original purpose or etiology of the CCFOs. During discussion with SAQA it was indicated that the South African Qualifications Authority itself does not have a document that describes and explains the CCFOs per se and is in need of such a document.

The term CCFOs is analysed in the ensuing text in terms of the words from which the terms have been derived.

3.3 AN ANALYSIS OF THE TERM *CRITICAL CROSS-FIELD OUTCOME*

What follows is an analysis of the term CCFOs. This precedes a crystallisation of the definitions and terms found in the text as discussed.

Critical in the term Critical Cross-Field Outcome

According to The Concise Oxford Dictionary the term “critical” refers to: something of great importance, significant, essential, meaningful, imperative, and momentous.

Cross-Field in the term Critical Cross-Field Outcome

The word “Cross-Field”’ in the term Critical Cross-Field Outcomes indicates that these outcomes are applicable across industries, irrespective of the nature. For organisational purposes, the National Qualifications Framework (NQF) divides all Education, training and development in South Africa into 12 organising fields (SAQA 2002:4). These fields are not based on a traditional discipline or subject area, nor are they based on economic sectors. They are a convenient mixture of the two, representing nothing more than organisational necessity. Below are the proposed sub-fields that the National Standards Bodies (NSB) recommended to the Authorities for recognition. The term Cross-Field in CCFOs refers to the fields mentioned below.

Fields

The fields are listed alphabetically with an indication of the abbreviations that are used for each:

Table 4 Industry sub-fields

NSB Number	**Sub- field**	Abbreviation
NSB 01	Agriculture and nature conservation	Agric & Nature
NSB 02	Culture and arts	C & A
NSB 03	Business, commerce and management studies	BCM
NSB 04	Communication studies and language	C & L
NSB 05	Education, training and development	ETD
NSB 06	Manufacturing, engineering and technology	MET
NSB 07	Human and social studies	HSS
NSB 08	Law, military science and security	LMS
NSB 09	Health science and social services	HS & SS
NSB 010	Physical, mathematical, computer and life sciences	PMCL
NSB 011	Services	Serv
NSB 012	Physical planning and construction	Plan & C

Outcomes in the term Critical Cross-Field Outcome

Following the discussions that took place in the Committee of the National Training Board (NTB) during 1993, it was decided to use the word “outcomes” partly to avoid using the term “competence” (Bellis 2002:23). The experience of many workers of competence-based training according to the mentioned author had been of very narrow, task-related, mechanistic, do-this-do-that type of training. This training excluded any understanding of what they were to do and why. Such training, according to Bellis (2002:23), certainly did not contribute to personal development. The experience of educationalists, on the other hand, was such that they viewed competence as competencies, which, in their vocabulary and understanding, were associated with low-level manual competencies or low-level cognitive (memorising) competencies. Consequently, the term “outcome” came to be used. The term

"competence" will be favoured in this research as the CCFOs are perceived as outcomes and the intention is to identify their underpinning competencies.

In South Africa the term "outcomes" are being favoured in the formal education systems whereas both "outcome" and "competence" are being used interchangeably in the training of human resource development system (South Africa 1998(b):24). It tends to be the case that in education the word "outcome" is very widely used because of the launching of Curriculum 2005 and Outcomes-Based Education since 1998.

Various definitions of outcomes are presently in use. An outcomes-base approach implies something different from a largely content-based approach to teaching and learning; it connects the idea of learners' ability as a result of learning (Olivier 2003:46). SAQA (SQAQ 1996:24) states in this regard that an outcome is a culminating demonstration of the entire range of learning experiences and capabilities that underlie it and that occurs in a performance context that directly influences what it is and how it is carried out. Bellis (2002:25) refers to the National Training Bureau Committee 2 Working Paper that states the following:

"Outcomes are represented in a statement of learner capability that reflects an appropriate integration of knowledge and skill. This capability consists of understanding, the ability to apply, the capacity to transfer to other contexts".

Olivier (2002:46) explains outcomes in a slightly different wording from the above mentioned, in that outcomes are described as neither knowledge nor competencies or competencies, but are unique terminology such as a verb, an object (noun) and when necessary a qualifier (modifier). Olivier's view of outcomes complements the Unit standard Based Education, training and development Practice that is progressively implemented in the South African context and therefore all the above descriptions of outcomes are the same, but the interpretation differs. Outcomes in this research refer to the demonstrated end results of training and education within a specific context.

Since the terms “outcome” and “competence” are being used interchangeably in the training of the human resource development system (SAQA 1998(a):36), it is necessary to explore the term “competence” as well. Further more, this research intends to identify the refined competencies of the CCFOs and the term needs to be clearly separated from outcomes. In this study, clusters of competencies result in education, training and development outcomes and the outcomes are specifically the CCFOs.

Many experts in the fields of sociology, education, philosophy, psychology and economics have tried to define the notion of competence (Eurydice 2002:13). The Eurydice Survey is an educational related survey used by stakeholders in the field to determine and explain related issues and definitions. According to the mentioned document, educational and cultural background as well as linguistic origins of the experts shaped the definitions of competence. Competence was originally used in the context of vocational training (Eurydice 2002:13). This term refers to the ability to perform a particular task. This complements this study’s view of competence and outcomes as explained previously.

To build competence means enabling individuals to mobilise, apply and integrate acquired knowledge in complex diverse and unpredictable situations, (Eurydice 2002:13). The Australian complement for CCFOs is known as the Key Competencies. The term “key competencies” is described in the ensuing text and is correlated with the CCFOs.

3.4 CRITICAL CROSS-FIELD OUTCOMES IN RELATION TO KEY COMPETENCIES AND MAYER COMPETENCIES

The Engineering and Manufacturing Processes Report (E & MP Report) (1996) is one of the maiden documents that describe the CCFOs in education, training and development environment in South Africa. This document was sourced by Chirs Vorwerk, one of the valued stakeholders in the environment of ETD according to SAQA. This report has not been published but is available at SAQA's research department.

The CCFOs are also related to the Mayer competencies (E&MP Report 1996: 10). The Mayer competencies' wording is exactly the same as the Key competencies (See table 4). *Key competencies* are the term used for describing generic competencies in Australia. Other countries have developed differing yet equivalent sets of generic competencies for use in education, training and development, but use different terms such as essential competencies (New Zealand), foundation competencies or workplace competencies (United States), and core competencies (England and Scotland) (E&MP Final Report, 1996: 10).

The Mayer Report (1992:7) defines key competencies as "…competencies essential for effective participation in the emerging patterns of work and work organisation". The focus is on the capacity to apply knowledge and competencies in an integrated way in work situations. Key competencies are generic in that they apply to work generally rather than being specific to work in specific occupations and industries. This characteristic means that the Key Competencies are not only essential for effective participation in work but are also essential for effective participation in further education and in adult life more generally (Mayer 1992:7).

The CCFOs relate closely to key competencies as well as the Mayer competencies. The CCFOs encompass more than the Mayer competencies or the key competencies; CCFOs also include the developmental outcomes.

Eurydice (2002:14) concluded from a large number of contributions in search of a definition on key competence, that there is no universal definition of the notion of key competence. The report states that despite differing conceptualisation and interpretation of the term in question, the majority of experts seem to agree that for a competence to deserve attributes such as key, core, essential or basic, it must be necessary and beneficial to any individual and to society at large. This complements the CCFOs, as their intention is to contribute to the full development of not only any individual learner but also the society at large.

Eurydice (2002:17) identifies selection criteria for the key competencies. The criteria are applicable as CCFOs and key competencies correlate.

The first criterion for selection is that it must be potentially beneficial to all members of society. It must be relevant to the whole of the population, irrespective of gender, class, race, culture, family background or mother tongue (Eurydice 2002:14).

The second criterion for selection is that it must comply with the ethical, economic and cultural values and conventions of the society concerned.

The third determining factor is the context in which Key Competencies are to be applied.

The CCFOs comply with the criteria mentioned above. CCFOs as stated by SAQA in relation to the key competence as provided by the South Australian Science Teachers Association (SASTA) and the so called Mayer competencies are as follows:

Table 5 Correlation between CCFOs, key competencies and Mayer competencies

Number	Critical Cross Field Outcome	Number	Key competency	Number	Mayer competencies
1	Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made	6	Solving problems	6	Solving problems
2	Work effectively with others as a member of a team, group organisation community	4	Working with others in teams	4	Working with others and in teams
3	Organise and manage oneself and one's activities responsibly and effectively	3	Planning and organising activities	3	Planning and organising activities
4	Collect, analyse, organise and critically evaluate information	1	Collecting, analysing and organising information	1	Collecting, analysing and organising information
5	Communicate effectively using visual, mathematical and/or language competencies in the modes of oral and /or written presentation	2 & 5	Communicating ideas and information and using mathematical ideas and techniques	2 & 5	Communicating ideas and information and using mathematical ideas and techniques

6	Use science and technology effectively and critically showing responsibility towards the environment and health of others	7	Using technology	6	Using technology
7	Demonstrate an understanding of the work as a set of related systems by recognising that problem-solving contexts do not exist in isolation	0	No complement	0	No complement

Developmental outcomes					
1	Reflecting on and exploring a variety of strategies to learn more effectively	0	No complement	0	No complement
2	Participating as responsible citizens in the life of local, national and global communities	0	No complement	0	No complement
3	Being culturally and aesthetically sensitive across a range of social contexts	0	No complement	0	No complement
4	Exploring education and career opportunities	0	No complement	0	No complement
5	Developing entrepreneurial abilities	0	No complement	0	No complement

Evidently from the above table the first 7 CCFOS statements directly relate to the key competencies as well as Mayer competencies. There is no complement for the South African developmental outcomes to be found in the key competencies or the Mayer competencies. The (E&MP Report 1996:10) confirms the above correlation in that it refers to the CCFOs as follows:

These are the broad range of common abilities, which underpin all of human endeavour. They are developed through the interaction with a specific context into specific competencies and capability. They are variously known as Mayer competencies, generic competencies, fundamental abilities, essential outcomes and, now latterly, by SAQA as critical outcomes.

3.5 TERMINOLOGY DESCRIBING THE CRITICAL CROSS-FIELD OUTCOMES

With reference to the above-mentioned quote, SAQA has referred to CCFOs (SAQA: 7) exactly the same as the E&MP Report (1996:11) with the added descriptive statement of core competencies.

The seven CCFOs as stipulated by SAQA are examples of generic competencies. The South African Qualifications Authority (SAQA) initially referred to the CCFOs as Essential Outcomes (South Africa 1996:26). SAQA (South Africa 1997:6), states that the term Critical Cross-Field Education, training and development Outcomes (Short title: Critical Outcomes) would be adopted instead of Essential Outcomes. Industry is currently using the term CCFOs.

An international benchmarking exercise done by SAQA on the so-called essential outcomes has led to the following insights:

Table 6 Proposed Essential Outcomes

National Training Strategy Initiative Report: Generic Competencies	The Alverno College Abilities	Ontario Essential Outcomes	Proposed SA Essential Outcomes
Thinking about and using learning processes and strategies	Global perspectives	Use the competencies of learning to learn more effectively	Reflect on and use a variety of strategies to learn more effectively
Solving problems and making decisions	Problem solving	Solve problems and make responsible decisions using critical and creative thinking	Solve problems and make responsible decisions using critical and creative thinking
Planning, organising and evaluating activities	Valuing	None	None
Working with others as the member of a team/ group/organisation /community	Social interaction	Apply the competencies needed to work and get along with other people	Work with others as a member of a team/ group/ organisation/ community
Collecting, analysing, organising and critically evaluating information	Analysis	None	Collecting, analysing, organising and critically evaluating information

Communicating ideas and information	Communication	Communicate effectively	Communicate effectively using visual, mathematical, and language competencies
Participating in civil society and democratic processes through understanding and engaging with a range of interlocking systems (legal, economic, political, social)	Effective citizenship	Participate as responsible citizens in the life of the local, national and global communities	Participate as responsible citizens in the life of the local, national and global communities
Using science and technology critically to enhance control over the environment in a range of fields and context	None	Use technology effectively	Use science and technology critically, showing responsibility towards the environment and health of others
Applying mathematical concepts and tools	None	Demonstrate an understanding of the world as a set of related systems	None

Understanding and using the core competencies; concepts and procedures that underlie the domains of social and human sciences, natural sciences, art, language and literature	Aesthetic response	Apply aesthetic judgement in everyday life	Demonstrate cultural and aesthetic sensitivity across a range of social contexts
None	None	Make wise and safe choices for healthy living	Make wise and safe choices for healthy living
None	None	Explore education and career opportunities	Explore education and career opportunities

As indicated in the above-mentioned table, the CCFOs appear to be different from the initial Essential Outcomes, but it is evident that the CCFOs are derived from the Essential outcomes. CCFOs as known today are in correlation with international trends and South Africa is competing internationally regarding the CCFOs.

As mentioned, CCFOs are referred to as generic competencies. Breier (1998:80) states that employers and higher education providers are aware that conceptions of generic competencies are really concerned about the attributes required at work. Generic competencies are employability competencies and mentions that employers consider these competencies as essential. Research, (Breier 1998:80) has shown that employers prefer generic competencies requirements to knowledge or qualifications. This situation is of crucial importance to the term under discussion: CCFOs.

CCFOs relate to generic competencies, and generic competencies are perceived more important than knowledge or qualifications, which means that CCFOs deserve greater in-depth understanding and conceptualisation.

Generic competencies are also known as subject-independent or transversal competencies; they are not limited to any specific discipline, but can be applied to a whole range of subject areas and settings (Eurydice 2002:15). This complements the CCFOs as the CCFOs are cross-curricula, implemented on all NQF levels and not context specific.

Breier (1996:86) discusses generic competencies and their transferable nature. Quoting several studies that address the content dependent vs. content independent nature of generic competencies and arguing the transfer of knowledge and competencies. “The transferability of flexibility or generic competencies makes them invaluable tools for successful action…” (Eurydice 2002:15). Breier (1996:86) distinguishes transferable or core competencies, which can be deployed with little or no adaptation in a variety of social settings. Breier (1996:86) refers to transferring competencies as meta-competencies, the second order competencies: these

competencies enable one to select, adapt, and apply one's other competencies to different situations across different social contexts and perhaps similarly across different cognitive domains. Eurydice (2002:16) refers to meta-cognitive competence as the capacity to understand and control one's own thinking and learning processes. These learning processes are self-initiated, self-regulated, intentional learning at all stages of life. This - according to the survey (Eurydice 2002:16) - implies that people will be able to identify suitable places of learning and are sufficiently motivated to invest time and effort to continue learning. Therefore, knowledge and competencies will be maintained and updated in accordance with profound economic, political and social changes. This explanation is rather cognitive-orientated and does not necessarily cater for the social/emotional domain. The CCFOs encapsulate more than cognitive competencies and abilities; they include the social/emotional development of the learner in all contexts.

Breier (1996:73) differentiates between CCFOs and generic competencies and mentions that CCFOs are examples of generic competencies. She provides the following examples of generic competencies: writing competencies, oral competencies, interpersonal competencies, communication competencies and problem solving competencies.

The Eurydice Survey (2002:15) provides the following examples of prominent generic competencies: motivation, creativity, leadership, communication, problem solving, reasoning, teamwork and the ability to learn. Clearly these examples do include some of the CCFOs, but not all. CCFOs are more than only generic competencies.

Important to note is that generic competencies provide a bridge between certain areas of:

- education and the workplace
- informal and formal modes of learning

Generic competencies are regarded as one of the key elements of education in that they support lifelong learning. The ability to learn, (Eurydice 2002:18) has elicited much interest in recent years within the context of lifelong learning. The curriculum is impacted in two ways: firstly, more responsibility is being placed on the learner and secondly, curricula are emphasising the development of learners' personal competencies. This situation supports both the Outcomes-Based Education practice progressively implemented in South Africa, as well as the characteristics of the CCFOs.

CCFOs should guide curriculum planning across all levels of the education, training and development system according to Jansen (2001:555). They are not generated in one sector of education, training and development, but across sectors in a process of consultation among stakeholders (South Africa 2005(b):28). SAQA (1997:7) refers to the CCFOs as the qualities the NQF wishes to promote regardless of the specific area or content of learning (SAQA 1997:7). CCFOs should direct teaching, education, training and development practices, as well as the design and development of learning programmes and learning materials.

Table 7 summarises the above-mentioned text. A discussion of the table follows thereafter.

Table 7 CCFOs concept analysis

	General comments and reference																Policy reference												Context	
Author	Generic skills	Essential outcomes	Core skills	Life skills	Thinking skills	Transferable skills	Intangible outcomes	Personal skills	Abilities needed to be responsible	Provide means to build a career	Abilities needed to be successful member of society	Critical thinking	Lateral thinking	Problem solving	Skills necessary to assimilate knowledge	Ability to interact	Education and Training outcomes	Drive all learning processes	Achieve coherence in NQF system	Describe qualities NQF wishes to develop in learners	Critical for development of life-long learning	Transforming nature	Facilitative role in nationhood and solidarity	Release person's potential	Enhance quality of education and training	Acceleration of redress of past unfair discrimination	Cross Cultural outcomes	Contribute to full personal development	Cross Curricular	Guide curriculum planning
Oliver (2002:32)	x						x	x	x	x	x	x	x	x	x	x		x											x	x	
Bellis (2002:33)	x																														
SAQA document (May/June 1997:7)	x	x	x																			x									
NQF and Curriculum Development (2000:18)																	x		x	x	x										
Curriculum 2005:27																						x	x	x							
SAQA: Office of Executive Officer: (1997:6)																				x	x	x			x	x		x	x		
Oliver (2003:32)				x				x				x						x													
White Paper on Education and Training (1996:26)	x	x																													
Jansen (2001:555)																													x	x	
SAQA Bulletin (February 2000:4)	x																										x		x		
National Qualifications Framework: an overview (2000:10)																			x	x	x								x		

Observe

The above table is a representation of the crystallisation of the term CCFOs. It also form result in the "reflection" and "observation" steps of action research as it summarises and indicate important essential concepts of the CCFOs.

Reflect

The table supports the notion that the term CCFOs is diverse and that even knowledgeable stakeholders in the NQF are not consistent in terms of the description. It is clear from the table that the resources are of opinion that CCFOs are an essential concept in the transforming nature of SAQA and the NQF. CCFOs are critical in the development of lifelong learning and they describe the qualities SAQA envisages for the development of learners. The fact that several authors describe CCFOs diversely indicates that their implementation could be problematic. It is therefore necessary to investigate the competencies underpinning the CCFOs as prescribed by SAQA as well as related documentation and legislation.

3.6 THE NATURE OF THE CRITICAL CROSS-FIELD OUTCOMES

The Department of Education's documents, according to Bellis (2002:28), define Critical Outcomes as broad, generic cross-curricular outcomes, which ensure that learners gain the competencies, knowledge, and values that will allow them to contribute to their own successes, as well as to the successes of their family, community and nation as a whole. SAQA describes the CCFOs as intangible outcomes (Olivier 2002:32). Critical and lateral thinking, problem solving and the ability to interact with others are but a few related issues. These competencies, according to Olivier (2002:32), are critically important to drive all learning processes. The CCFOs contribute to the full development of all learners at all levels and in all contexts.

SAQA initially prescribed seven CCFOs and five Developmental Outcomes (South Africa 1997:6). The latter were initially not compulsory, but nonetheless regarded as important. CCFOs, including the Developmental Outcomes, are described and explored in this research.

The CCFOs is education, training and development outcomes and are an additional mechanism through which coherence is achieved in the framework. These CCFOs describe the qualities that the National Qualifications Framework identifies for development in learners within the education, training and development system, regardless of the specific area or content of learning. These are the outcomes that are deemed critical for the development of the capacity for lifelong learning. (SAQA 2000(c):18).

As stated in the preceding text, the CCFOs in South Africa are underpinned by transformational mechanisms, (SAQA 1997:7) which are driven by the following instruments and vested in the Constitution of the Republic of South Africa: judicial, political, economic and social instruments. Important instruments that strongly relate to the focus of this study are transformational and developmental instruments, and knowledge production instruments. Each is briefly described.

Transformational and developmental instruments

These instruments change the character or condition of a society, especially in relation to empowering previously marginalised groups and equally marginalising or eliminating irrelevant practices, responding positively to the needs of a repressed group or an underclass.

Knowledge production instruments

These instruments address the need of a new society through the creation of new learning structures and processes, or by addressing issues for more social and personal relevance and contextual impact.

The role of CCFOs (South Africa 2005(b):27) in the context of an integrated South African education, training and development system include the following:

Bolstering the spirit and letter of the Constitution by focusing on transforming the South African society from one based on major inequities to one which is fundamentally egalitarian

Acting as a conduit and playing a facilitative role in generating a sense of South African nationhood and solidarity within a Pan-African and international dynamic society.

Individuating the person within learning collectives and releasing the person's potential. Education, training and development should therefore serve in a pre-figurative and strategic way to release human resources potential in South Africa, in order to redress the imbalances created by the apartheid system.

3.7 MILIEU OF THE CRITICAL CROSS-FIELD OUTCOMES

It is mandatory for standards setters to incorporate at least some CCFOs in the standards that they recommend (SAQA 2000(d):11 and E& MP Report 1996:9). Proposers of qualifications should ensure that all CCFOs have been addressed appropriately at the level concerned within the qualification being proposed. A discussion of the qualification and how the CCFOs ought to be integrated in the qualification follows in figure 6 in this chapter.

SAQA requires that all qualifications, learning programmes and unit standards be given attention with regard to the CCFOs, trying to incorporate them where possible. The five Developmental Outcomes have acquired the same status as the seven Critical Cross Field Outcomes, as indicated in latest legislation (South Africa 1998(a):45).

SAQA is currently proceeding with the implementation of the NQF to facilitate the democratic transformation of the national education, training and development system into one that serves the needs and interests of all the people of South Africa. SAQA trusts that the CCFOs will:

…ensure the enhancement of the quality of education and training, the acceleration of redress of past unfair discrimination in education training and employment opportunities, thereby contributing to the full personal development of each learner and the social and economic development of the nation at large (South Africa 1997:6).

CCFOs cannot be ignored when designing and implementing learning programmes. As previously mentioned it is required of designers and qualifications proposers to incorporate CCFOs in the learning programme. SAQA describes the impact that a qualification will have on learning programme development in the document on the National Qualifications Framework and Curriculum Development (SAQA 2000 (c):14). In this document SAQA prescribes the following:

A qualification shall have both specific and CCFOs that promote lifelong learning, (p14) and

When a qualification is registered, there is a requirement for the critical outcomes to be articulated (p19).

Policy documents and related documentation state that level descriptors determine the level of the qualification and that CCFOs ought to be implemented accordingly. CCFOs should not be implemented only in terms of the fundamental component of a qualification, but comprehensively within the whole qualification. CCFOs ought to be implemented in such a way that the learner will utilise it in work-related outcomes. In other words, CCFOs should be embedded within the learners' capabilities in order to execute a job-related task successfully. It is therefore the responsibility of the education, training and development practitioner to facilitate the mastery of learning outcomes in such a way that the learner will utilise the CCFOs in executing a task.

SAQA states that the CCFOs are problematic for learning programme developers. “The impossibility of de-contextualising statements about core competencies with any meaning” (SAQA (d) 2000:20). The difficulty with such out-of-context descriptions is that they are too poorly defined to ensure comparability and the more precisely defined they become the more rooted in context they become (SAQA 2000(c):20). The need for this research is embedded in this statement as the CCFOs need to be defined more clearly in order to be understood and conceptualised by Education, training and development Practitioners.

The ensuing text explains how the CCFOs are entrenched in a qualification within the NQF. The explanation is required to understand the relation between a qualification, unit standard, specific outcomes and the CCFOs.

3.8 CRITICAL CROSS-FIELD OUTCOMES AS EMBEDDED IN QUALIFICATIONS WITHIN THE NQF

The White Paper on Education, training and development (Department of Education 1995(b):9) states that an integrated approach to education, training and development will link one level of learning to another and enable successful learners to progress to higher levels without restriction from any starting point in the education, training and development system. The NQF embodies all nationally recognised qualifications opposed to traditional frameworks that intend to organise qualifications within isolated levels, sectors or according to providers of education, training and development endeavours (Olivier 2002:8). The SAQA Act (South Africa 1995) sets up ways of ensuring that the quality of Education, training and development in South Africa is of a good standard and that it provides many different entry, exit and re-entry points.

The NQF structures education, training and development very differently from the vertical divisions of the past. The NQF constitutes eight levels of learning and pathways for learning specialisations, such as communications or engineering (Department of Labour 2001:18). Different qualifications fit into the framework according to their focus and how difficult they are. Figure 8 depicts a compacted representation of the NQF

Table 8 Structure of the National Qualifications Framework

Higher Education and Training Band		
8	Doctorates and Further Research Degrees	
7	Higher Degrees and Professional Qualifications	
6	First Degrees and Higher Diplomas	
5	Diplomas and Occupational Certificates	
Further Education and Training Band		
4 (Gr 12)	Further Education and Training Certificate	
3		
2		
General Education and Training Band		
1 (Gr 9)	General Education and Training Certificate	
Senior Phase Grades 7-9		ABET Level 4
Intermediate Phase Grades 4-6		ABET Level 3
Foundation Phase Grades 1-3		ABET Level 2
Pre-School Phase		ABET Level 1

The NQF is a horizontal structure; therefore the governance of each band is across the particular band.

The level of a qualification is based on the exit level – on what a person will know and can do when he/she completes a qualification. This new way of recognising learners' achievements applies to all qualifications, giving education, training and development the same status. It measures what a person knows and can do, rather where and how the person gained that knowledge. The framework is also, according to Bellis (2002:15), outcomes/competence-based.

Level 1 of the NQF is achieved at the end of ordinary, compulsory schooling up to Grade 9 (Standard 7). It can also be reached through Adult Basic Education and Training (ABET) for adults who did not have the opportunity to complete their schooling. Level 1 marks the end of the first band of the NQF. This first band is known as the General Education and Training (GET) Band.

The NQF covers further education, training and development ─ schooling and technical certificates up to the equivalent of Grade 12, or matrix (Further Education and Training FET Band). Levels 5, 6, 7 and 8 are known as band 3. Band 3 covers Higher Education and Training (HET).

Learners can progress through these levels, no matter what age they are through lifelong learning.

The levels of the NQF measure the complexity of the subject matter for different qualifications rather than the duration of studies. The levels allow comparison between different courses, e.g. between education, training and development received in different ways and at different institutions. A person can thus use the credits from one institution to qualify at another institution for a different but related course. This promotes, according to Olivier (2002:10), the fundamental goal of the NQF, namely to create a mechanism to enable and promote lifelong learning. The levels also allow comparison between South African education, training and development and the education, training and development people receive in other countries.

The level of a qualification refers to a level on the NQF of which there are currently eight. The level of the qualification is determined by level descriptors as prescribed by SAQA and mentioned in the preceding text. SAQA (2000) provides guidelines and frameworks for determining level descriptors and this benchmarks the South African level descriptors against international standards.

SAQA is currently investigating the possibility of adding yet another level to the framework. These discussions about the levels are still ongoing and relevant information is not yet available. Level descriptors are employed to determine the level of a qualification or unit standard on the NQF.

The levels of the NQF will only be referred to, as the focus of the research is on CCFOs and not the levels *per se*. It is important, though, to take cognisance of the level descriptors, as they serve as indicators to the achievement of NQF levels. When

analysing the qualifications as per set standard prescribed by SAQA, one will find that it is of critical importance to take into account the following:

- Level of the qualification
- Purpose of the qualification
- Level of CCFOs per qualification

The level of complexity in respect of the CCFOs is seen as one way of comparing qualifications and allocating qualifications and standards to levels (SAQA (d) 2000:20). The CCFOs are diffusely addressed in the qualifications; they are merely listed in the rationale of qualifications.

This is a problematic situation, as no cumulative defined understanding of the CCFOs exists and therefore the assumption can be made that the CCFOs are not effectively addressed per qualification. The focus of this study is to define the underpinning competencies of the CCFOs although the levels of the CCFOs are acknowledged but not addressed in this research. Further study ought to be conducted in this regard.

A qualification, as indicated in the above-mentioned text, is pitched on an NQF level. A qualification consists of a compilation of two types of outcomes namely specific outcomes and CCFOs.

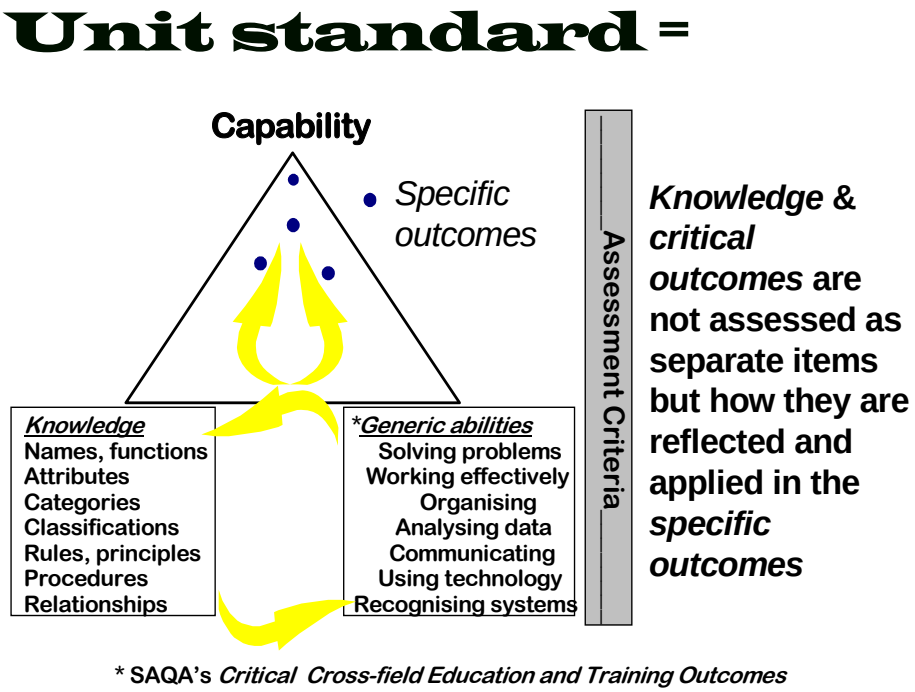
Following is a discussion of the CCFOs in relation to specific outcomes.

3.9 CRITICAL CROSS-FIELD OUTCOMES IN RELATION TO SPECIFIC OUTCOMES

A qualification has two types of outcomes, one being specific outcomes and the other the CCFOs. These differ in breadth of the context to which they apply (South Africa 1995(a):27).

The E & MP Report (1996:13) mentioned earlier is one of the very first proposals for a National Qualifications Framework. In this report the methodology of constructing qualifications and unit standards and suggestions on incorporating the CCFOs are addressed. The ensuing model addresses the methodology of constructing a unit standard and not the CCFOs *per se*, but successfully contextualises the CCFOs. A model as proposed by the E & MP Report (1996:13) follows.

Figure 9 SAQA's Critical Cross-Field Education, training and development Outcomes (E & MP Report 1996:13)



Activities and tasks that comprise a capability are formulated in the form of outcomes, combining the generic abilities and knowledge acquisition results in the development of the new capability. These so-called generic competencies refer to the CCFOs.

Spady states (Spady 2004) that any demonstration of what he calls performance is three-dimensional. The mentioned dimensions are content, context and competence and this strongly relates to the E & EM Report model. The CCFOs generic abilities/competences are woven into the specific outcomes at the capacity/performance level, from whence they find their context. The knowledge component determines the content in which the CCFOs are to be integrated. The three dimensions reflexively determine the nature and degree of difficulty.

The CCFOs or so-called *generic abilities* according to the mentioned report cannot be assessed or addressed as separate items. If the CCFOs were to be assessed or addressed separately, they would become specific outcomes. Following is a discussion on the specific outcomes.

Figure 10 Outcomes as resided in a qualification

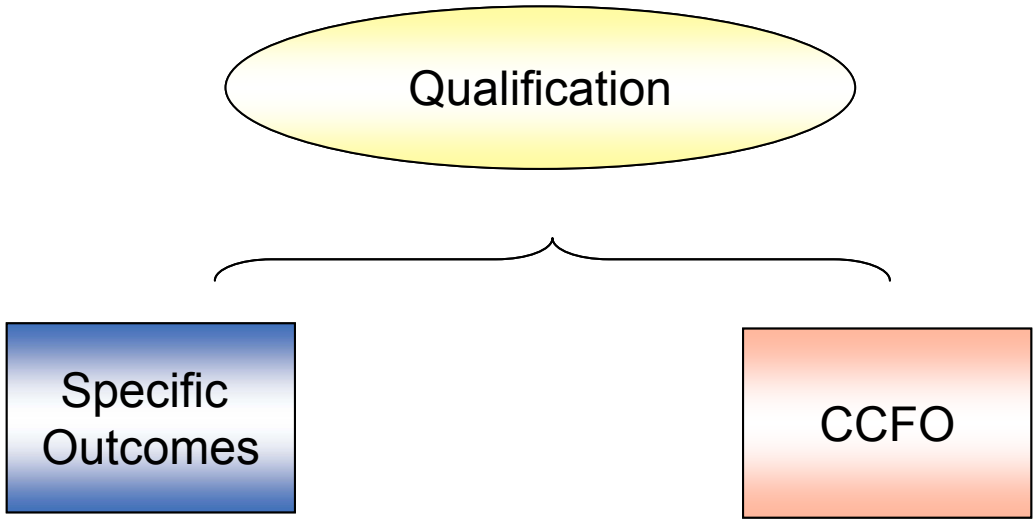


Figure 10 represents the types of outcome embedded in a qualification: specific outcomes and the CCFOs. A qualification must always consist of both outcomes with an indication of the expected level and assessment. Specific outcomes refer to the specification of what learners are able to do at the end of a learning experience. This, according to Bellis (2002:28) includes competencies, knowledge and values, which inform the demonstration of the achievement of an outcome or a set of outcomes. Olivier's (2002, 32) description is congruent to that of Bellis (2002) in that he refers to the specific outcomes as knowledge, competencies and values within a specific context.

Specific outcomes express the more narrowly defined aspects of the learning process. Specific outcomes are context-specific, informed by the CCFOs and formulated within the context in which they are to be demonstrated. These outcomes relate to the competence that learners should be able to demonstrate in specific contexts and particular areas of learning at certain levels.

Specific outcomes can be assessed by an assessor and a learner could be declared by such a party as *competen*t or not *yet competent* for the sake of progression of the learner, indirectly assessing the effectiveness of learning processes and learning programmes.

Levels of complexity, scope and learning context are therefore crucial in the formulation of specific outcomes if assessment is to be transparent, fair and effective.

Assessment policy and procedures as well as related legislation and processes will not be discussed in this study, as they do not corroborate the focus of this research report. Specific outcomes are the knowledge, competencies and values embedded in the areas of learning. According to Olivier (2002:32), specific outcomes are the basis for selecting cognitive learning objectives and technical competencies that will enable learners to achieve end-product outcomes. Assessment criteria together with specific outcomes support the achievement of unit standards, credits and qualifications.

The argument is not whether knowledge, competencies and values should be mastered, but how, when and to what extent these should be obtained, understood and applied to achieve outcomes.

SAQA ensures the implementation of CCFOs in that the Authority prescribes the format of qualifications and unit standards. The format of a unit standard ensures that the CCFOs are addressed; CCFOs resort under the NOTES sub-heading of the unit standard, and the service provider ought to give an indication of where and how the CCFOs are covered. It often occurs that proposers of unit standards and qualifications as well as service providers only list the CCFOs, but do not actually implement the CCFOs. See Addendum A for an example of a unit standard and an indication of how the CCFOs are listed in the unit standards and qualifications. When identifying unit standards and qualifications analysis I decided to use the same competency namely communication in different fields such as agriculture, numeracy and mathematics, security, project management and early childhood development. The CCFOs were merely listed in all the mentioned documents. CCFOs then do not add any value to learning experiences.

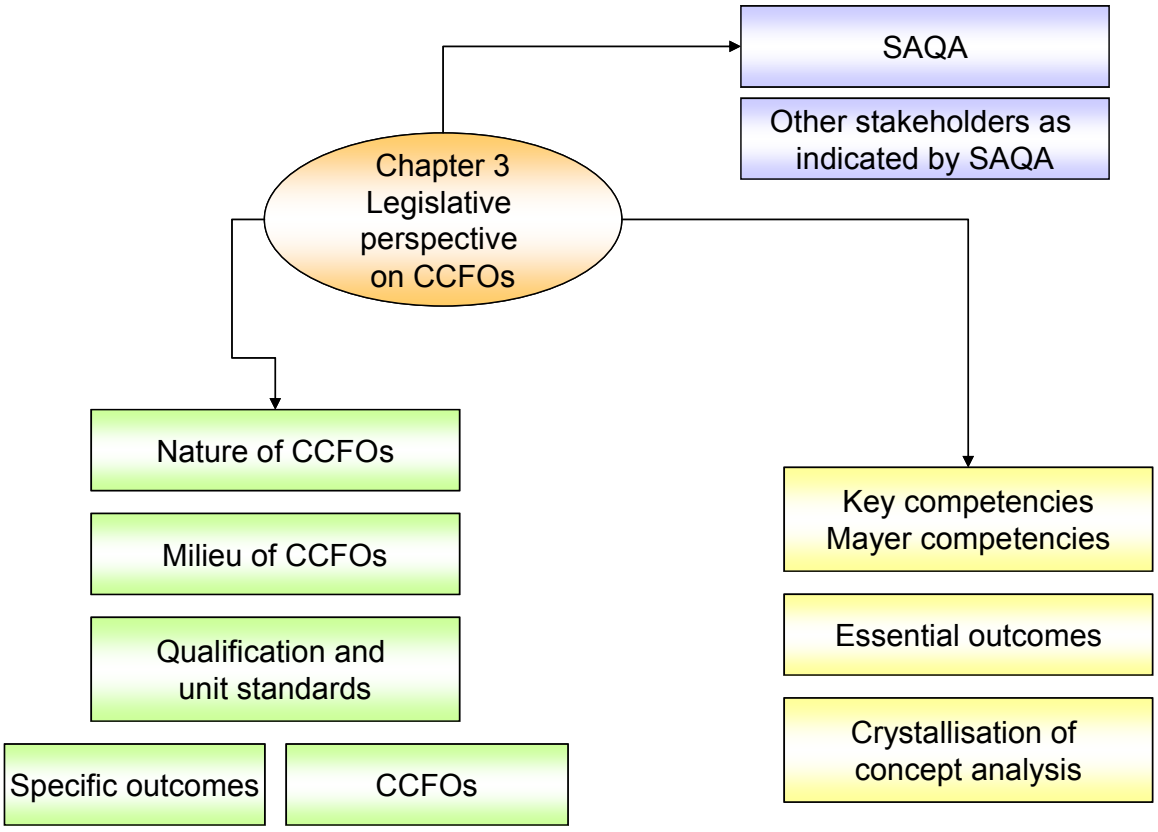
The following table depicts a correlation between the specific outcomes and CCFOs to highlight the differences between the mentioned terminologies as discussed in the preceding text. This summarises and concludes the correlation between the CCFOs and Specific outcomes.

Table 9 Correlation between specific outcomes and CCFOs

Specific outcomes	Critical Cross-Field Outcomes
Context specific	Cross-curricular
Informed by Critical Cross-Field Outcomes	Informed by formulation of Specific outcomes in individual areas of learning
Formulated within the context in which they are to be demonstrated	Underpin learning process in all facets
Describe competence which learner should be able to demonstrate	Identify qualities the NQF wishes to promote
Have specific contexts	Are not restricted to any specific learning context
Particular areas of learning	All areas of learning
Are pitched at certain levels	Include all levels of National Qualifications Framework

3.10 CONCLUSION

Figure 11 Summary of chapter 3



The table above summarises chapter 3. Interviews were held with Mr Samuel Isaacs (CEO to SAQA) to gain insight into how SAQA related documentation describes the CCFOs. SAQA made references to appropriate stakeholders that initially assisted in determining the CCFOs.

The specific words that compile the terms CCFOs are listed and then analysed to determine their specific meaning.

- Critical
- Cross-Field
- Outcomes

The CCFOs are then investigated in relation with the key competencies, Mayer competencies and the essential outcomes. A crystallisation of the concept analysis is then provided to triangulate a meaning thereof.

The nature of and the milieu that the CCFOs reside in are determined and the embeddedness within a qualification and unit standard is discussed. Specific outcomes and the CCFOs are then correlated to understand their relation.

In consonance to the summary of this chapter, I would like to provide an example of how I incorporated the CCFOs in practice. Addendum A pages 28 and 31 has reference:

The CCFO are addressed on the unit standard level under the essential embedded knowledge section as follow:

> "Critical Cross Field Outcomes
> UNIT STANDARD CCFO WORKING
> Working effectively with others as a member of a team, group, organisation or community (relates to both outcomes)
>
> UNIT STANDARD CCFO COMMUNICATING
> Communicate effectively (relates to both outcomes)
>
> UNIT STANDARD CCFO CONTRIBUTING
> Personal development (relates to both outcomes)"

An example of how the CCFOs are addressed on a qualification level can be seen in addendum A page 31-32. An extract of one of the CCFOs follows:

> "Collaborate, consult and work effectively within various professional contexts as a member of a team, group and organisation based on knowledge of group work, consultation and collaboration, and be able to reflect on their own and other's collaborative practices."

Above-mentioned are stated to ensure that the CCFOs are address on the unit standard level as well as qualification level.
In designing and developing the training material, I use to ensure that all the specific outcomes are address, same as the assessment tools. At the end of the training material as well as the assessment tool, I use to further incorporate the CCFOs by explaining how I integrated them. For example:

CCFO Identify and solve problems
The learners must identify possibilities for collaborative practice. If a conflicting problem arises, they must identify a proper technique to solve it that suit the situation.

CCFO Working in teams
Classroom discussion is one the main methods to facilitate this competency, by take part in groups.

By incorporating the CCFOs in this way, was merely a discussion and rationalisation of the CCFO.
With this much said, I would like to teas out the meaning of the CCFO statements as well as the competencies underpinning them.

Dr Spady (2004) states that proof of demonstration is found in the action verbs or so-called demonstration verbs. The CCFOs are therefore analysed in terms of the action verbs they contain

This not only demonstrates the complexity of the statements, but also provides a point of departure for the next chapter.

Table 10 An analysis of the CCFOs' statements according to the embedded required actions

CCFO statement	Analysis on CCFOs
Identifying and solving problems in which responses display that responsible decisions using critical and creative thinking have been made	Identify problems Solve problems Responsible decision-making Critical thinking Creative thinking
Working effectively with others as a member of a team, group, organisation or community	Work effectively with others
Organising and managing oneself and one's activities responsibly and effectively	Organise oneself Organise activities Manage oneself Manage activities
Collecting, analysing organising and critically evaluating information	Collect information Analyse information Organise information Critically evaluate information
Communicating effectively using visual, mathematical and/or language competencies in the modes of oral and/or written presentation	Communicate effectively using language Communicate effectively using visual competencies Communicate effectively using mathematical competencies Use oral mode of communication Use written communication
Using science and technology effectively and critically to evaluate information	Use science effectively Use technology effectively Critically evaluate information
Demonstrating an understanding of	Demonstrate and understand the world as

the world as a set of related systems by recognising that problem solving contexts do not exist in isolation	related systems Demonstrate and understand problem solving context

The aim of the CCFOs is to direct educational and training activities towards developing learners to fit within social and economic environments. When learners accomplish CCFOs, they are able to execute the developmental outcomes.

Table 11 An analysis of the developmental outcomes according to the embedded required actions

Developmental outcomes	Embedded actions required
Reflecting on and exploring a variety of strategies to learn more effectively	Reflect on variety of learning strategies Explore variety of learning strategies Learn more effectively
Participating as responsible citizens in the life of local, national and global communities	Participate as citizen Participate as responsible citizen Intra-personal competencies
Being culturally and aesthetically sensitive across a range of social contexts	Culturally sensitive Aesthetically sensitive Range of social context
Exploring education and career opportunities	Explore education opportunities Explore career opportunities
Developing entrepreneurial abilities	Entrepreneurial abilities

The above-mentioned table provides an analysis of the action verbs or demonstration verbs of the CCFOs as derived from the statements. The CCFOs are diffused statements and are compiled from a variety of different concepts resulting from the confusion regarding their conceptualisation.

The preceding chapter explores legislation and relevant documentation that describe CCFOs. These action verbs serve as guidelines to initiate the investigation. Table 9 and

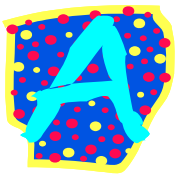
table 10 serve as points of departure for the next chapter that explores the practical underpinning competencies that describe the CCFOs.

CHAPTER 4: THEORETICAL GROUNDING OF THE UNDERPINNING COMPETENCIES OF THE CRITICAL CROSS-FIELD OUTCOMES

4.1 INTRODUCTION

This chapter addresses the research question on the theoretical grounding of the CCFOs. CCFOs, as discussed in chapter 3, are the qualities SAQA wishes all learners to have achieved at the end of any learning programme in all the fields of the NQF. CCFOs are also referred to as generic competencies and are cross-curricular critical thinking competencies that contribute to full personal development and are of transforming nature.

Action



This chapter form part of the "action" step of the action research model as it analyses the CCFOs in terms of the demonstration verbs indicated in chapter 3.

This chapter unpacks and analyses the CCFOs in terms of their underpinning competencies according to the embedded actions required in the statements. The CCFOs incorporate cognitive as well as affective domain specific characteristics. The underpinning competencies of the CCFOs are explored according to the above-mentioned characteristics. The affective domain specific characteristics are ascertained in terms of Emotional/social intelligence and the cognitive specific characteristics are explored in terms of Sternberg's triarchic theory of intelligence (Sternberg 2001), (Addendum D), Bloom's taxonomy of educational objectives (Bloom 1979), (Addendum E), and Beyer's cognitive and meta-cognitive operations (Beyer 1998) , (Addendum F). It is important to note that the CCFOs can be differentiated, they are inseparable.

The CCFOs are complex statements. The first CCFO for example, incorporates the identification of problems, solving problems, using critical thinking and creative thinking. Table 9 and 10 as reflected at the end of chapter 3, are utilised to outline the underpinning competencies of the CCFOs in terms of the affective as well as the cognitive domain.

4.2 AFFECTIVE DOMAIN SPECIFIC DESCRIPTION OF THE CCFOS

The affective domain specific underpinning competencies entail emotional intelligence and social intelligence. These are explored congruently, as the concepts are closely related. The ensuing text examines and explores the concept of emotional/social intelligence with the focus on the possible explanatory value it contributes to the concept of CCFOs.

The intention is not to explore emotional/social intelligence as concepts *per se*, but to explore the mentioned concepts in terms of CCFOs. Practical descriptions and examples from the mentioned concepts are utilised to support the purpose of this research.

The concept of emotional intelligence is not new. In fact, it is based on a long history of research and theory in Personality and Social as well as Industrial and Organisational Psychology. As early as 1940 Wechsler (1943:102) referred to *non-intellective* as well as *intellective* elements, by which he meant affective, personal and social factors. Wechsler furthermore proposed that the non-intellective abilities are essential for predicting one's ability to succeed in life. He wrote:

The main question is whether non-intellective, that is affective and cognitive abilities, are admissible as factors of general intelligence. My contention has been that such factors are not only admissible but also necessary. I have tried to show that in addition to intellective factors there are also definite non-intellective factors that determine intelligent behaviour. If the foregoing observations are correct, it follows that we cannot expect to measure total intelligence until our tests also include some measures of the non-intellective factors (Wechsler 1943:103).

Wechsler was not the only researcher who viewed non-cognitive aspects of intelligence to be important for adaptation and success. Thorndike (Thorndike 1937) also documented social intelligence in the late thirties. He described social intelligence as the ability to understand and manage people. Gardner (Gardner 1983) began to write about multiple-intelligence in 1983. Gardner proposed that intrapersonal and interpersonal

intelligences are as important as the type of intelligence typically measured by IQ and related tests (Gardner 1983: 3).

IQ in itself is not a very good predictor of job performance. IQ accounts for about 25 percent of the variance (Cherniss 2000:2). In some studies according to Cherniss (2000:2), IQ accounts for as little as four percent of the variance. The CCFOs relate to the emotional/social intelligence, for example working in teams as well as the statements that refer to the ability to contribute to the full personal development of each learner and the social and economic development of society at large, and are therefore valuable and very essential qualities for learners to acquire.

In studies that Cherniss (2000:5) conducted, it turned out that social and emotional abilities were four times more important than IQ in determining professional success and prestige. It would be absurd, according to the mentioned author, to suggest that cognitive ability is irrelevant to success. What matters, is how the candidate performs compared to his/her peers. This has less to do with IQ differences and more to do with social and emotional factors. It is for this reason the CCFOs are analysed in terms of emotional/social intelligence as well as the cognitive cluster. One should keep in mind that cognitive and non-cognitive abilities are very much related. In fact, there is research according to Cherniss (2000:3) suggests that emotional and social competencies actually help improve cognitive functioning. CCFOs are therefore an imperative component of Education, training and development interventions and ought to be integrated in all learning interventions at all levels of the NQF.

Social intelligence was initially defined as “the ability to understand and manage people” (Thorndike & Stein 1937:281). These social abilities are also directed inward and social intelligence expressed by extension, the ability to understand and manage oneself.

In essence, Salovey and Mayer (1990:198) define social intelligence as the ability to perceive one’s own and others’ internal states, motives and behaviours and to act toward them optimally on the basis of that information. Weinstein (1969:755) notes that social intelligence “boils down to the ability to manipulate the responses of others”.

In doing the research for his first book, Goleman (1996) became familiar with a wealth of research pointing to the importance of social and emotional abilities for personal success.

Salovey and Mayer (1990:198) define emotional intelligence as the sub-set of social intelligence that involves the ability to monitor one's own and others' feelings and emotion, to discriminate among them and to use this information to guide one's thinking and actions. Emotional intelligence is also part of Gardner's view of Social Intelligence, which he refers to as the p*ersonal intelligence* (Gardner 1983:239). Like social intelligence, personal intelligence (divided into inter- and intra-personal intelligence) includes knowledge about the self and others. One aspect of personal intelligence relates to feelings and is quite close to what is called emotional intelligence:

The core capacity at work here is access to one's own feeling life - one's range of affects or emotions: the capacity instantly to effect discriminations among these feelings and, eventually to label them, to enmesh them in symbolic codes, to draw upon them as a means of understanding and guiding one's behaviour. In its most primitive form, the intra-personal intelligence amounts to little more than the capacity to distinguish a feeling of pleasure from one of pain…. At its most advanced level, intra-personal knowledge allows one to detect and to symbolize complex and highly differentiated sets of feelings… to attain a deep knowledge of…. feeling life (Gardner 1983:239).

Interpersonal intelligence involves, among other things, the ability to monitor others' moods and temperaments and to enlist such knowledge into the service of predicting their future behaviour. The awareness of one's own emotional state, according to Buck (1984:46), can be seen to be useful in the regulation and coordination of one's behaviour, just as the communication of emotional information is useful in the regulation and coordination of social behaviour. To function effectively on the affective cluster, one has to be aware of one's emotions. Correspondingly, the affective cluster needs to function appropriately as a prerequisite to the cognitive cluster.

Emotional intelligence does not include the general sense of self and the appraisal of others. It rather focuses on the processes described specifically above, that is, the recognition and use of one's own and others' emotional states to solve problems and regulate behaviour.

While working on this research I met JET (Joint Education Services 2003), a company that provide private education training and development services, who is currently in a working relationship with CAEL (Council for Adult and Experiential Learning). SAQA endorses the work that JET has done with regards to the CCFOs.

The mentioned parties are exploring the possibility of implementing the Behavioural Event Interview (BEI) as an assessment tool for the CCFOs. The Behavioural Event Interview provides employees with “knowledge about their capabilities and motivates them to become involved in job and career planning and education and training” (JET 2003: 9).

The Council for Adult and Experiential Learning (CAEL) did 18 years of research on 14 capabilities. These capabilities according to the Council are most important capabilities employers expect from employees.

The CAEL implement this assessment tool to:

- guide adults to appropriate education, training and development programmes
- select job applicants
- match employees with available jobs within a company
- guide the unemployed to appropriate jobs
- empower adults with information about their competencies and abilities
- motivate adults to seek further education, training and development

CAEL refers to the CCFOs as *capabilities*. Donna Younger (Younger 2002), the facilitator during a workshop held by JET views behaviour as an indicator of competence/capabilities. A person is interviewrd to determine the capabilities and the fundamental philosophy of CAEL is that "the best predictor of how a person will behave in the future is how he or she has behaved in the past" (JET 2003:11). This interview indicates high "points" from the past. This past experience is likely to encourage or discourage the demonstration of these capabilities in the future. Donna Younger divided the CCFOs in 4 quadrants similar to that of Solovey and Mayer (2001:15) and Goleman (1996:268). The following table is a perceived division of emotional intelligence by the congregation of Salovey and Mayer (1990:15), Goleman (1996:268) and Younger (2002).

Table 12 below serves as a starting point to describe the underpinning competencies of the CCFOs in terms of Emotional/social intelligence. The table correlates the four branched model of emotional intelligence and sets the parameters for describing the CCFOs in terms of the affective characteristics thereof.

Table 12 Division of Emotional intelligence

Author	Division of Emotional intelligence Branches			
	Branch 1	Branch 2	Branch 3	Branch 4
Mayer et al. (2001:15)	Perceiving emotions	Using emotions to facilitate thought	Understanding emotions	Managing emotions in a way that enhances personal growth and social relations
Salovey & Mayer (1990: 90)	Appraising and expressing emotions in the self and others	Regulating emotion in the self and others	None	Using emotions in adaptive ways
Goleman (1996:268)	Self - awareness	Empathy	Empathy	Managing emotions
Donna Younger (2004)	Self - awareness	Self -regulation	Social awareness	Relationship management

Goleman's (1996:15) and Donna Younger's (2002) first branch of the division of Emotional intelligence correlates with each other. Goleman (1996:268) refers to self-awareness in the sense of recognising feelings and building a vocabulary for them and recognises the links between thoughts, feelings and reactions. Self-awareness includes knowing if thoughts or feelings are ruling decisions, seeing the consequences of alternative choices and applying these insights to decisions. Self-awareness (Goleman 1996:268) also takes the form of recognising one's strengths and weaknesses and seeing oneself in a positive but realistic light. The processes underlying emotional intelligence, according to Salovey and Mayer (1990:191) are initiated when affect-laden information first enters the perceptual system. Mayer et al. (2001:15) refers to the ability

as the identification of emotions in faces, pictures, etcetera. Emotional intelligence allows for the accurate appraisal and expression of feelings (Salovey & Mayer 1990:191) and stable laws may govern them. These emotional appraisals, in turn, in part determine various expressions of emotions.

There is a distinction between the second branch (using emotions) and the other three (Mayer et al. 2001:15). Whereas branches 1, 3 and 4 involve reasoning about emotions, branch 2 uniquely involves using emotions to enhance reasoning.

People experience mood on both a direct and a reflective level, (Salovey & Mayer 1990:195). In their reflective experience, individuals have access to knowledge regarding their own and others' moods. This experience according to Salovey and Mayer (1990:195) in part, represents a willingness and ability to monitor, evaluate and regulate emotions. Mayer et al. (2001:15) describe this as the ability to comprehend emotional information about relationships, to make the transition from one emotion to another and to use linguistic information about emotions. Goleman (1996:268) describes this ability as empathy. This ability entails understanding of others' feelings and taking their perspective, and respecting differences in how people feel about things. Empathy also includes assertiveness rather than being passive or aggressive. Empathy is learning the art of cooperation, conflict resolution, negotiation and the ability to compromise (Goleman 1996:268). Empathy according to Salovey and Mayer (1990:194) may be a central characteristic of emotionally intelligent behaviour. When people relate positively to one another, they experience greater life satisfaction and lower stress levels. For example, the empathy of an advice giver is an important determinant of whether the advice is perceived as good or not.

People who behave in an emotionally intelligent fashion should have sufficient social competence to weave a warm fabric of interpersonal relations. Clearly, the greater the number of emotionally intelligent friends, relatives and co-workers, the more empathic and supportive a social structure will surround a person (Salovey & Mayer 1990:194).

Empathy researchers, according to Salovey and Mayer (1990:194), in turn, have noted its dependence on subsidiary abilities similar to appraisal and expressing emotions to enable a person to:

- understand another person's point of view
- identify accurately another's emotions
- experience the same or other appropriate emotions in response to them
- communicate and/or act on this internal experience

Developmental perspectives on empathy suggest that appraisal of one's own feelings and those of others are highly related and that, in fact, one may not exist without the other (Salovey & Mayer 1990: 194).

Most people regulate emotion in themselves and others. Emotionally intelligent individuals, however, should be especially adept at this process and do so to meet particular goals. On the positive side, they may enhance their own and others' moods and even manage emotions to motivate others charismatically toward achieving a worthwhile end. On the negative side, those whose competencies are channelled anti-socially may create manipulative scenes or lead others psychopathically to nefarious ends.

Managing emotions includes the ability to manage emotions and emotional relationships for personal and interpersonal growth (Mayer et al. 2001:15). Goleman (1996:268) refers to this ability as managing emotions. This entails the ability to realise what is behind a feeling and learning ways to handle emotions. Another emphasis is on taking responsibility for decisions and actions and following through on commitments.

Finally Mayer et al. (2001:15) view the four branches as forming a hierarchy, with *emotional perception* at the bottom and *management* at the top. This hierarchy of the emotional Intelligent branches is ranked in terms of personality, not specifically in terms of underlying affective and cognitive processes. The third level is viewed as the most cognitively saturated. The top management level is viewed as involving a balance among

many factors: motivational, emotional and cognitive. This four-branch model serves as a basis for current review of the field of emotional intelligence (Mayer et al. 2001). This perception on emotional intelligence compliments the notion that CCFOs relate to emotional/social intelligence.

Both Goleman (1996:268) and Mayer et al. (Mayer et al. 2001:15) argue that by itself emotional intelligence probably is not a strong predictor of job performance; it rather provides the bedrock for competencies that are (Cherniss 2000:4). The ability to recognise accurately what another person is feeling enables one to develop a specific competency, such as influence. Similarly, people who are better able to regulate their own emotions will find it easier to develop a competency such as initiative or achievement drive. Ultimately it is these social and emotional competencies that are needed to identify the underpinning competencies of the CCFOs that relate to the emotional/social intelligence cluster.

The above-mentioned four-branched explanation of emotional intelligence and the correlation JET makes between the CAEL capabilities and emotional intelligence are used to explore the underpinning competencies of the CCFOs. Following is a layout of the CCFOs on the matrix of emotional intelligence and CAEL capabilities:

Figure 12 Correlation between CCFOs and Emotional intelligence and CAEL capabilities

Figure 12 serves as a framework to link the emotional intelligence competencies, CAEL capabilities and the CCFOs. CCFOs are analysed within the congregation of emotional intelligence competencies mentioned in Addendum G. Addendum G is a competence framework that distils findings in terms of various authors on emotional intelligence. This provides an understanding of the concept of emotional intelligence competencies. These competencies together with the CAEL capabilities are utilised to define the CCFOs' underpinning competencies in terms of emotional intelligence.

The affective domain specific characteristics are grouped as follows and represented as:

Self-regulative competencies: Represents self-awareness, awareness of own emotional state, self control, self management, self-regulation, learning orientation and goal orientation.

Social competencies: Includes concern for others, interpersonal diagnosis, flexibility and influence, social awareness, empathy with others, understand context and political perceptiveness.

Relationship managerial competencies: Includes teamwork, leadership and conflict resolution.

Following is a description of the CCFO in terms of the cognitive domain specific characteristics.

4.3 COGNITIVE DOMAIN SPECIFIC DESCRIPTION OF THE CCFOS

The future work force will require the learners of tomorrow to do more than read, write, speak, listen and perform mathematical computation. Learners, according to Teele (2000:52), will need to develop competencies that provide opportunities to think creatively, make decisions and judgements, solve problems independently, reason, envision new ideas and products and know how they learn and how others could assist them learning. The CCFOs directly relate to Teele's statement. The CCFOs also ensure access, portability and lifelong learning. They underpin all education, training and development initiatives.

The catalogue of what is taught as thinking competencies according to Beyer (1998:32) seems to be almost endless. This part of the chapter on the CCFOs intends to provide a comprehensive understanding of the concept with due understanding of the impossibility of listing every single competency that could describe it in terms of the cognitive domain specific characteristics.

It also takes into consideration that there is little widespread agreement on thinking. Following is an eclectic theoretical grounding of thinking competencies relating to the CCFOs.

4.4 THEORETICAL GROUNDING OF THE COGNITIVE DOMAIN SPECIFIC CHARACTERISTICS OF THE CCFOS

Many a psychologist has defined intelligence. The main focus of the study is not to define intelligence *per se* but rather to identify the underpinning competencies of CCFOs.

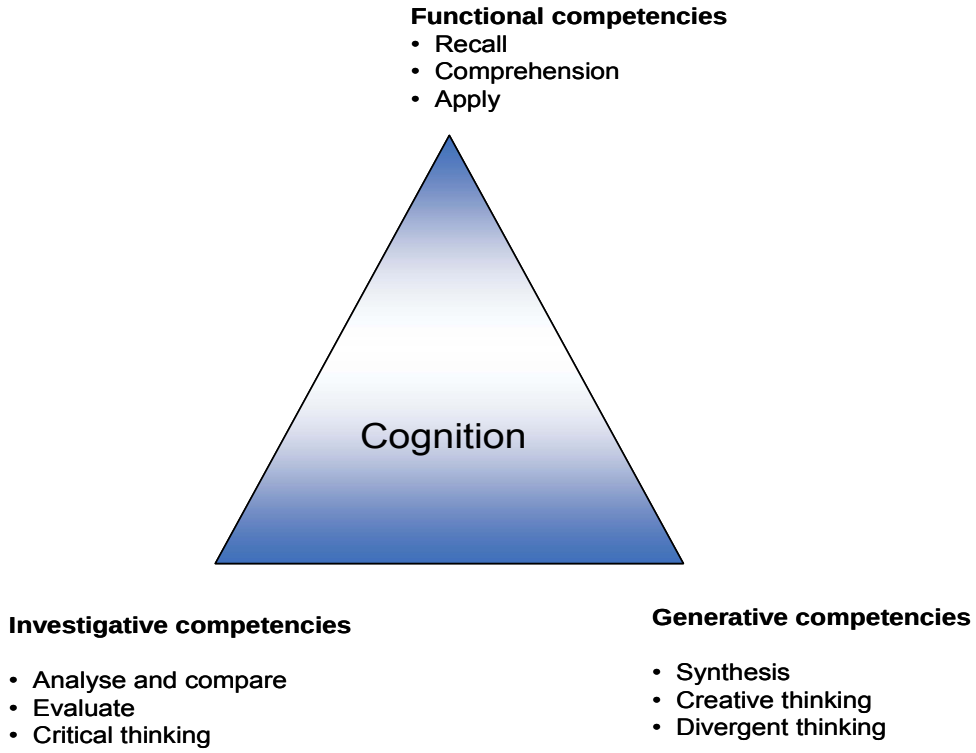
Sternberg's *Triarchic Theory of Intelligence* (Sternberg 2001:316), is one of the many theories that describe intelligence and implies that people may apply their intelligence to many kinds of problems. The triarchic theory of intelligence relates to the CCFOs statements in that the CCFOs are to be implemented on all levels and fields of the NQF. Sternberg (2001:316) distinguishes between practical, analytical and creative thinking.

In his triarchy of intelligence (Addendum B), Sternberg (Sternberg 2001:320) refers to analytical thinking as the ability to analyse, evaluate, critique or judge. *Analytical thinking* as defined by Sternberg (Sternberg 2001:318) correlates with the *evaluation* level of Bloom's taxonomy. Bloom (Bloom 1979:144) refers to these abilities as the assessment of values, ideas and things (Bloom 1979:144) as well as the judgements of given criteria. Creative abilities are used to create, invent, discover and imagine. Practical abilities according to Sternberg (2001:316) are used to apply, utilise and implement ideas. Practical abilities serve three functions: adapting to existing environments, shaping existing environments to create new environments and selecting new environments.

Thinking occurs in different forms, purposes, and arenas. Some authors describe thinking competencies as logical analysis, competencies such a reasoning, deductive logic, sequential synthesis, problem solving competencies, predicting, generalising and concluding, decision making or conceptualising competencies. Beyer (1998:54) refers to operations that imply that thinking consists of some type of mental activity. Activities can be described in terms of operations that the mind seems to perform when thinking. These types of operations are cognitive and meta-cognitive (Beyer 1998:32). Addendum D provides a representation of the mentioned operations. Yet another well-known descriptive model is explored for the purpose of defining the CCFOs, that being Blooms' taxonomy of educational objectives (Bloom 1979). The intention of identifying the mentioned perspectives is to synthesise a comprehensive model to serve the objective of this study. Bellis (2002:48&227), Addendum E, provides a detailed applied table of Bloom's taxonomy regarding the cognitive cluster.

These three mentioned explanatory theories and models presented are combined into one significant and self-descriptive model for the purpose of conceptualising the CCFOs in terms of the cognitive domain specific characteristics of the outcomes. Figure 13 explains the mentioned model and offers a brief description thereof.

Figure 13 Cognitive domain specific characteristics of the CCFOs



The presented model differentiates between functional, generative and investigative competencies. The respective competencies are discussed in the ensuing text.

4.4.1 Cognition

The cognitive competencies referred to in Figure 10 are functional competencies, generative competencies and investigative competencies. Cognition refers to those complex strategies and competencies to generate or find meaning in context. The strategies referred to by Beyer (1998:32) are the overall plan such as problem solving, decision-making and conceptualising. The competencies are mental operations such as recall or analysis or inductive reasoning used in conjunction with other similar operations such as critical thinking competencies and creative thinking competencies to execute a thinking strategy.

Addendum E, Bloom's applied taxonomy (Bellis 2002:48 & 227), provides underpinning competencies of the cognitive operations. Where insufficient descriptions occur, in depth details are provided to conceptualise the CCFOs.

4.4.2 Functional competencies

Functional competencies according to Figure 13 entail the following:

Recall
Do (Comprehension)
Apply (Problem solving)

Bellis (2002: 48&227) provides the following descriptions of Bloom's taxonomy regarding practical competencies:

Table 13 Practical competencies

Competency	Domain	Associated verbs or action		
Recall	Remember / recall terms, facts Recall information	Recall Reproduce Name Order State	Locate Arrange Define Recognise Repeat	List Label Memorise Relate
Comprehension	Knowing what a message means Interpret information in one's own words	Compare Define Classify Interpret Recognise	Explain Report Sort Restate Summarise	Generalise Identify Indicate Locate Review Select
Application Problem solving	Using what has been previously learned Apply knowledge or generalise it to a new situation	Operate Interpret Apply Choose Prepare Use	Modify Demonstrate Discover Schedule Survey	Solve Illustrate Revise Practise

4.4.3 Recall

The first row in the above-mentioned table entails *recall*. Bellis (2002:48&227) refers to this competency as the ability to recall terms, facts or information. Bloom (1979:62) refers to the same competency as *knowledge*. Knowledge according to Bloom (1979:62) emphasises remembering either by recognition or recalling of ideas, material or phenomena.

4.4.4 Comprehension

Comprehension according to Bloom (1979:89) is probably the largest general class of intellectual abilities emphasised. Comprehension is knowing what the message means, to interpret the message or information in one's own words. "In comprehension the emphasis is on the grasp of the meaning and intent of the material" (Bloom 1979:144). Comprehension in this case should not be associated with reading comprehension but put to use in a much broader sense.

Three types of comprehension are considered:
Translation: Translation means a learner can put the message into other terms.
Interpretation: Involves dealing with communication as a configuration of ideas of which the comprehension may require a reordering of the ideas into a new configuration in the mind of the learner. This includes thinking about the relative importance of the ideas, their interrelationships and their relevance to generalisations implied or described (Bloom 1979:90).
Extrapolation: Making estimates or predictions based on understanding of the trends, tendencies or conditions described in communication.

4.4.5 Application/Problem solving

Problem solving according to Sternberg in Swanson (1992:2) is pervasive in everyday psychological theories of intelligence. The ability to solve problems successfully allows individuals to become independent learners. Because the human being is constantly bombarded with new knowledge and technology, any person needs to have effective problem solving competencies that will enable him/her to learn independently to be able to adapt to the ever changing environment. Problem solving is the cognitive activity that turns thoughts into action-changing an existing undesirable situation into one that is preferred (Ashman & Conway 1993:47).

Problems are tasks for which a subject wants or needs to find a solution; no readily available procedure exists and the person must make an attempt to find a solution (Charles & Lester 1982:5). A problem is defined as a situation, quantitative or otherwise, that confronts an individual or group of individuals and that requires a solution, and for which a path to the answer is not known or uncertain. The authors further suggest that a problem in contrast to a question or exercise is a situation that requires thought and use of knowledge to resolve it. A problem is a situation to which the problem solver has no immediate solution and for which he is willing to seek a solution using existing knowledge.

Problem solving is a competency that is learned through systematic and continuous exposure to problems (Sorenson et al. 1996:5). Szetela and Nicole (1992:42) define problem solving as the process of confronting a novel situation, formulating connections between the given facts, identifying the goal and exploring possible strategies for reaching the goal. Beyer (1991:184) complements this by defining problem solving as the process by which one devises and executes a plan to resolve a question, situations or condition that needs but does not yet have an answer or solution. A synthesis of these definitions is as follows: Problem solving is a process by which the problem solver, consciously or unconsciously moves systematically or randomly through a series of operations using thinking competencies to solve the problem, gathers more information than needed, makes choices and selects priorities to arrive at the solution(s).

In order to solve a problem, an impasse must by definition result in a new strategy being chosen; otherwise a complete failure to solve the problem will result (Roberts & Erdos 1993:4). Whenever a problem-solving task has more than one possible strategy for solution, according to Roberts and Erdos (1993:5), a person may be aware (metacognitive knowledge) that more than one solution strategy might be available. Whenever a problem solving task has more than one strategy available for solution, according to Roberts and Erdos (1993:11), the solver may be aware that this is the case and will therefore need to decide on the best strategy to use.

4.4.6 Investigative competencies

Investigative competencies according to Figure 13 include:

Analysis
Evaluation and Comparison
Critical thinking competencies

Bellis (2002:48&227) provides the following descriptive explanation of Bloom's taxonomy regarding analytical competencies:

Table 14 Analytical competencies

Competency	Domain	Associated verbs or action		
Analyse and compare	Disassembling a whole into parts Break down knowledge into parts and state relationship	Categorise Deduce Infer Differentiate Compare	Contrast Criticise Discriminate Classify Distinguish	Examine Experiment Question Test
Evaluate	Assessing the value of ideas and things Make judgements of given criteria	Predict Argue Appraise Compare Score Recommend	Select Assess Choose Support	Estimate Judge Rate Justify

Analyse and compare

Analysis emphasises the breakdown of the material into its constituent parts and detection of the relationships of the parts and of the way in which they are organised. Analysis shades into evaluation, especially when thinking of critical analysis (Bloom 1979:144). As a learner is analysing the relationships of elements of an argument, he/she may be judging how well the argument hangs together. Analysis is divided into three levels:

Level one: Breaking down material into its constituent parts, to identify or classify the elements

Level two: Making explicit the relationships among the elements to determine the connections and interactions

Level three: Recognition of the organisational principles, the arrangements and structures

Evaluation according to the above-mentioned table is evaluating/assessing the value of ideas and things, making judgements about given criteria.

4.4.7 Generative competencies

Critical thinking according to McKendree et al. (2002:580) is a valuable tool for facilitating learning and has been in circulation at least since the time of Socrates. Being able to think critically according to McKendree et al. (2002:580) is essential to respond appropriately to rapid and complex changes in modern society.

Critical thinking is essentially evaluative in nature (Beyer 1988:61). This statement supports the notion that critical thinking and evaluation resort under the same cluster as mentioned in Figure 10. Critical thinking is thinking for oneself according to McKendree et al. (2002:64). Lipman (1988:39) defines critical thinking as *skilful, responsible thinking that facilitates good judgement because*

- it relies upon criteria
- it is self-correcting, and
- it is sensitive to context

One function of criteria is to provide a basis for comparison. Ennis (1985:45) states that critical thinking is reflective and reasonable thinking that is focused on deciding what to believe or do. French and Rhoder (1992:190) suggest that a critical thinker must be able to organise and manipulate information. Critical thinking is not seen as part of a sequence but rather as a group of competencies and strategies chosen and used as needed by the particular thinking task (French & Rhoder 1992:187). The mentioned

authors suggest that how one thinks critically may be related to the specific material under consideration. This statement relates to the nature of CCFOs in that the CCFOs are applicable to all fields at all levels of the NQF. Critical thinkers need more than a large knowledge repertoire; they must have the ability to evoke particular knowledge when needed and integrate information where applicable.

Critical thinking competencies according to French and Rhoder (1992:187) involve interpreting, analysing or evaluating information, arguments or experiences but need a purpose and an outcome.

Critical thinking can be described as cognitive accountability. It entails providing reliable reasons for actions or thought. This statement is congruent to the CCFOs in that learners must seek answers and better their learning strategies.
Sorenson et al. (1996:26-27) provides the following critical thinking competencies:

Comparing and contrasting
Determining similarities and differences about objects, situations ideas, institutions and the like
Distinguishing between fact and opinion
Statements that can be verified (facts) are separated from those that cannot (opinion)
Distinguishing between relevant and irrelevant information
Deciding whether something is related (relevant) to the item or situation under discussion or not (irrelevant)
Distinguishing between reliable and unreliable sources
The reliability of a source is determined by whether it is believable or not. This is based on the accuracy of the information and the agreement of the information under discussion on that of other sources
Identifying cause and effect
This process involves both identifying the causes, reasons or motives for a condition or action and the effects, results or outcomes of the cause
Sequencing and prioritising
These are organisational competencies. Sequencing involves determining the logical order of tasks or events to produce a product or attain a goal. Prioritising involves ranking each item or step according to its importance in the situation at hand

Identifying bias and stereotype

Personal feelings are involved in these processes. Bias is recognised as a view slanted in favour or against something or someone, a view often formed unfairly. Stereotype is a form of bias where certain characteristics are considered common to a group without respect or consideration for individuals and their differences

Recognising point of view

This involves identifying the position or situation from which something is observed, presented or considered. Possible elements of bias may also be present

Recognising consistent and inconsistent reasoning

Deciding whether the line of reasoning is logical (consistent) or contradictory (inconsistent)

Recognising assumptions and generalisations

Both processes demand keen judgements. Assumptions involve identifying and exploring the validity of the beliefs or ideas taken for granted or tend to be accepted as true. Generalisations are statements, laws or principles drawn from specific verifiable situations or information

Analysing arguments

Identifying the elements of an argument and then determining the strengths or weaknesses of each element

Identifying induction and deduction

These are very general ways of thinking. Induction is often called *bottom-up* thinking because conclusions are drawn from specific instances. Deduction is often referred to as *top-down* thinking because the conclusion or result is known and leads to that particular conclusion.

4.4.8 Creative thinking competencies

"Creating effective solutions to a broad range of everyday, real-life problems require a higher level of creativity" (Fobes 1996:20). During creative thinking learners learn by exploring, trying out, manipulating, experimenting, questioning and modifying ideas (Sorenson et al. 1996:23). "The difficult part of creativity is arriving at ideas that are not only new, but that also have value" (Fobes 1996:20). The most common way of generating valuable ideas is to generate as many ideas as possible. Critical thinking will then reduce those ideas that have no or little value. Creative thinking and critical thinking are not identical. Creative thinking according to Beyer (1988:64) is divergent, critical thinking is convergent. Beyer (1988:65) states that a learner invents new combinations and critically evaluates them. The first Critical Cross-Field Outcome, which directly relates to critical and creative thinking, is supported by the above-mentioned statement: "Problems are identified and solved in which responses display that responsible decisions using critical and creative thinking have been made".

Lipman (1993:10) provides the following correlation between critical and creative thinking:

Table 15 Correlation between critical and creative thinking

Critical thinking	Creative thinking
Sensitive to context (informal as well as formal logic)	Governed by context (holistic)
Self-correcting (fallibilistic)	Self-transcending (dialectical)
Guided by singular criteria in harmony (e.g. truth, consistency)	Guided by multiple criteria in opposition
Conducive to practical applications	Conducive to practical applications

If creative problem solving is understood as being any situation in which there is room for improvement, it indicates that most people recognise that there is room for improvement at any level and any environment of their lives (Fobes 1996:19).

Sternberg and Grigorenko (2003:612) and Guilford (1967:22) both refer to creativity as divergent thinking. Divergent thinking, according to Costa (1985:310), is the kind of thinking required to generate many different responses to the same question or problem. Divergent thinking also assists people to express creative, innovative and non-traditional ideas. Divergent thinking is congruent to creative thinking and directly relates to the first Critical Cross-Field Outcome: “Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made”.

Divergent thinking can be encouraged by:

- Generating many ideas or potions
- Accepting all ideas
- Reaching for limits
- Not jumping to conclusions
- Taking risk
- Letting one idea lead to another

In the following table divergent production competencies are represented by factors that are briefly explained.

Table 16 Divergent production

Factor	Description	Author	Year
Sensitivity to problems	The ability to recognise problems	Sternberg	2000:612
Fluency	Number of ideas	Sternberg	2000:612
	Ready flow of ideas	Guilford	1967:138
	The ability to think quickly and in quantity –to generate a large number of ideas or possibilities including relevant responses.	Sternberg and Grigorenko	2003:214
Flexibility	Shifts in approaches	Sternberg	2000:612
	Readiness to change direction or to modify information	Guilford	1967:138
	Involves thinking in different modes, ideally using different categories and mind-sets, it is seeing things from another point of view	Sternberg and Grigorenko	2003:214
Originality	Unusualness	Sternberg	2000:612
	The ability to think in new, unique, clever and unusual ways. Low frequency of occurrence	Sternberg and Grigorenko	2003:214
Elaboration	Elaborate on ideas, to fill out details	Guilford	1967:138
	The ability to think in detail — to embroider on and extend an idea	Sternberg and Grigorenko	2003:214

Convergent thinking is a way to narrow down ideas to the one or two that are best, correct or most useful to answer a question or solve a problem (Sorenson et al. 1996:23). To convert one needs criteria against which to make decisions. Guidelines for convergent thinking include:

- Focusing on the problem or goal
- Being clear
- Being concise and specific about evaluation criteria
- Being positive without overlooking difficult or troublesome areas
- Being deliberate and reflective

When learners become more competent in thinking, their self-confidence and self-esteem seem to be more positive. Both of the aforementioned are prerequisites for leading a self-fulfilling and contributing life.

McKendree et al. (2002:59) stress the fact of constructivism and the cognitive sciences seem to be in opposition to this in various ways. The authors try to crystallise the compatibility of the mentioned perspectives and among other reasons they state that the "best representation almost always lies beneath the surface of the given information and requires learners to engage in a deep way, often in collaboration with other, to impose their own framework on the problem". This particular statement contributes to the conceptual understanding of CCFOs, as these outcomes are a mixture of social/emotional intelligence as well as cognitive competencies.

McKendree et al. (2002:58) suggest that representational systems, one of the approaches to critical thinking that have emerged from cognitive science research of which there is much proof, are often very local to a particular problem or problem type and must be reinterpreted each time in the current context; hence the constructivist perspective on critical thinking.

The core competencies of communication, reasoning and understanding information are the focus of cognitive science as well as goals of constructivist learning. Cognitive science according to McKendree et al. (2002:58), concentrates on building models of how people learn and how they transfer what they learn from one context to another.

4.4.9 Knowledge and competencies

Substantive knowledge, (Newman 1992:107-108), enables the person to utilise analytical knowledge and enables the learner to reason an argument, distinguish between empirical and normative issues and utilise criteria for judging the reliability of evidence. Knowledge is regarded as basic to all the other ends or purposes of education, training and development (Bloom 1979:33). “Problem solving cannot be carried out in a vacuum but must be based on knowledge of some of the realities” (Bloom 1979:33). Knowledge is of little value if it cannot be utilised in new situations or in a form very different from that in which it was originally encountered (Bloom 1979:29).

Although knowledge is a necessary condition, it is not a sufficient condition for becoming an expert as documented by Sternberg and Grigorenko (2003:158). “What is needed is some evidence that the learners can do something with their knowledge, that is that they can apply the information to new situations and problems” (Bloom 1979:38).

Competencies permit knowledge to be used or applied to the solution of new problems. The learner must be able to distinguish important from irrelevant information, to anticipate and to respond to arguments in opposition to his/her own view and to state an own view clearly and persuasively. These competencies put knowledge to work in solving problems. Bellis (2002:61) defines competencies as a generalised, performed ability in any domain of human learning and endeavour. He implies that competencies require a level of understanding in order to be repeatable across a variety of cases. The competency according to Bellis (2002:61) is not the task for an occupation; it is that which the learner gives evidence of. Ernst (2003:12) defines competencies as the descriptions of a number of complex steps usually performed subconsciously and completed in several seconds or minutes.

The definition of knowledge and competencies for this study is as follows:
Knowledge is the foundation of understanding and a learner wishes to expand existing knowledge. Competencies put knowledge to work. The learner utilises knowledge to implement other competencies.

Edward de Bono's (De Bono 1999) lateral thinking courses *The six thinking hats* and *Direct Attention thinking tools* (De Bono 1997) as well as the Herrmann Brain Dominance Instrument (HBDI) are practical examples of the underpinning competencies of the CCFOs and are incorporated in the competencies list. De Bono's courses as well as the HBDI instrument's competencies are correlated with the competencies list and added where appropriate. The mentioned practical tools are incorporated in the summary of the cognitive cluster specific CCFOs.

4.5 CONCLUSION

The tables supplied above summarise the practical underpinning competencies of the CCFOs as identified in the appropriate literature. The next chapter seeks to identify the underpinning competencies of the CCFO as perceived by the ETQA managers as part of the empirical study. The theoretically grounded competencies of the CCFO have been verified with the mentioned parties.

The following chapter discusses the empirical study.

CHAPTER 5: EMPIRICAL STUDY

5.1 INTRODUCTION

This chapter forms part of the "observation" step in the action research cycle as it describe findings of the empirical research conducted.

This chapter documents the empirical study of the research project. The methodology is described and findings of the research questionnaire and other ways of data gathering are discussed. By means of triangulation of the empirical research findings, this chapter attempts to determine the competencies underpinning the CCFOs.

Even though there is no prescription for the implementation or conceptualisation of the CCFOs, SAQA requires the SGBs and SETAs to incorporate the CCFOs in the unit standards and qualifications. "There is no prescription in any of the SAQA regulations or requirements of how these outcomes (Critical Cross-Field Outcomes) are to be incorporated and developed" (South Africa 2000(d):20), and "It is agreed that these outcomes are inadequately addressed at present" (South Africa 2002(b):21).

It is standard procedure for learning programme designers and proposers thereof to ensure the incorporation and accommodation of the CCFOs in qualifications and unit standards in that they list the CCFOs, under the sub-heading, *Notes*, of the qualification or standard and provide an indication of how and where the CCFOs are addressed. See Addendum A. This, however, does not ensure that:

- the CCFOs are understood and purposefully and effectively incorporated in curriculum design and development of learning materials;
- learning is facilitated in such a way that the CCFOs are purposefully integrated in the learning event or
- the learner assimilates the integrated learning material in such a way that it contributes to the full development of the individual and society at large as it is supposed to.

The objective of Outcomes Based Education is to empower learners to fit into society at large, to think critically and to meet the needs set within the world of work (Olivier 2002:10). The new curriculum, according to Manganyi, (South Africa 1995(b):2), is based on the principles of co-operation, critical thinking and social responsibility and should empower individuals to participate in all aspects of society. Outcomes Based Education means organising the educational process to obtain the desired results and allowing learners to demonstrate the achievement as a means of evaluation (Spady 1994: III).

Outcomes based learning is a *standard based* way of learning (Olivier 2002:4). Standards are set prior to learning and serve as basis for learning. According to Olivier (2002:4), learners need to engage themselves in self-managed learning to achieve these outcomes. Outcomes Based Education is about mastering certain outcomes. Critical Cross-Field Outcomes serve as standards or outcomes and the intention is to design back in order to define and develop these outcomes.

The research objective is to define the CCFOs in terms of their underpinning competencies. Thus, the competencies that are encapsulated in the statements are to be identified. These identified competencies serve as evidence that the learner has the capabilities underwritten by the CCFO. If a learner is able to demonstrate competence in the identified competencies, it would imply that the learner is competent in demonstrating the CCFOs.

The intended result of this research is a list of competencies pertaining to the CCFO statement that the facilitator, proposer of qualifications, service providers and ETQA managers can purposefully and effectively incorporate the CCFOs in the training and

development initiatives. These competencies serve as the starting point for the outcomes based principle of designing back. This list of competencies can also be utilised as benchmarks for conducting competencies audits on the CCFOs. They competencies are to be implemented at all levels of the NQF in all the fields as identified by SAQA.

5.2 ACTION RESEARCH APPROACH

A number of research methods are employed to secure data (McKernan 1997:75), as indicated by the data collection plan (see chapter one).

The phenomenon of the CCFOs cannot be studied outside its natural settings; namely the education, training and development environment. The research is also conducted while the research is being socially engaged. “Action research is implemented with the participation of the people for whom the intervention is designed, usually with their help and with the aim of emancipation for the participants” (Henning et al. 2004:47). As I am currently involved in the practice of ETD, I assist SETAs in drafting unit standards and qualifications. The emancipatory nature of this research supports the ETD practice in which I am involved. Intervention in this context refers to the interviews, text analysis, CCFO workshop and the questionnaires that aim at investigating the respective stakeholders’ professional experience regarding the identification of the competencies underpinning the CCFOs, keeping in mind that variables cannot be easily isolated or accurately measured quantitatively. The workshop is aimed at emancipating all stakeholders involved as the content and discussions during the workshop contribute to the insights and knowledge of the CCFOs.

Action research according to Burell and Morgan (1979:37) consists of two important components in the research, namely “the process of generating change and generating knowledge”. Knowledge generated during the interviews, policy documents, literature and text analysis, is reminiscent of the questionnaire and of the identification of the competencies underpinning the CCFOs, taking cognisance that complexity and uncertainty is inevitable and acceptable (Burell & Morgan 1979:37). The decision and actions taken here and now, as mentioned in chapter 2, are unlikely to be the same as those chosen yesterday or tomorrow, by other actors, or in some other places, because

of the difference in opinion and lack of guidelines about the refined competencies of the CCFOs which is not a system of accumulated certainties (Zuber-Skerritt 1996:18). This became evident in the CCFO workshop as the planning and preparation differed from the action implementation. The intention was that the stakeholders should nominate appropriate competencies per CCFO statement. What actually happened is that the research had to nominate competencies from the theoretical research chapters already conducted prior to the workshop. The stakeholders only then seconded and logically discussed the nominated competencies. Because it is action- and learning-oriented, the research is by definition relevant.

This research has given me – both assembler and practitioner, to new insights. Since I am currently a self-employed training and development practitioner, I opted for executing action research. The implementation of CCFOs is fundamental to my practice. The outcome of this study will inform any future developments and innovation of my practice regarding curriculum development, facilitation of learning as well assessment of learning. The standard procedure of listing the appropriate CCFOs per unit standard and the indication of these outcomes per qualification do not contribute to the purposeful and effective incorporation of the CCFOs in learning material and demonstration of these by the learners. What this research has taught me is that the CCFOs are to be incorporated by means of demonstrated competencies by the learner.

The CCFOs are the outcomes SAQA wishes all learners to demonstrate at the end of any learning programme or intervention on all the levels of the NQF. Outcomes presume competencies. Competencies presume certain demonstrations by the learner. These competencies that are to be demonstrated by the learners are the intended results of this research with due understanding that this action research is a process; it is part of an ongoing search for better ways of doing things. This research has not produced final solutions to the better understanding or conceptualisation of the CCFOs, although it has produced partial solutions, improvements or even errors that indicate the need to change direction.

The following text discusses the instruments used, interviews, policy documents and text and literature analysis, as well as the CCFO workshop and finally the research questionnaire.

5.3 POLICY DOCUMENTS

Legislation and related documentation such as policy documents and position papers of SAQA are used as the main resources to explore the concept of CCFOs. Documented resources about the CCFOs are scarce, as mentioned in chapter 3. The documents that could be sourced referred to the CCFOs in similar ways: as transformational tools that ought to be implemented across all fields at all the levels of the NQF. The CCFOs are merely listed in the mentioned resources; this is the case across the board of legislation and related documentation. Chapter 3 provides an in-depth discussion of this point. The crystallisation of the concept analysis (Table 7) indicates that no coherent description of the CCFOs exists and proves that further investigation is necessary.

5.4 TEXT ANALYSIS

Text analysis is conducted by correlating registered qualifications and unit standards regarding the CCFOs. Unit standard based qualifications as well as qualifications that are not unit standards based are correlated. It has been found that the CCFOs are merely mentioned in the unit standards and qualifications (Addendum A). It has however, been discovered that reference is made to the specific tasks pertaining to the Exit Level Outcomes in the case of qualifications and in the Note section of unit standards. The following is an example of the first CCFO statement found in the unit standard: “Collect, use and communicate data that relate to farming” CCFO statement 1: “The learner will be able to identify and solve problems during the process”.

This supports the rationale of this research in that the conceptual understanding of the CCFOs is lacking when unit standards and qualifications are constructed.

5.5 LITERATURE ANALYSIS

Literature analysis is conducted on the demonstration verbs of the respective CCFO statements. The demonstration verbs are categorised in terms of affective domain

specific characteristic and cognitive domain specific characteristics. It is found that the emotional/social intelligence theory support and describe the affective domain specific characteristic. The cognitive domain specific characteristics are explored by means of a congregation of Sternberg's triarchic theory of intelligence (2001), Bloom' taxonomy of educational objectives (1979) and Beyer's (1991) cognitive and meta-cognitive operations. The eclectic nature of the action research method enabled me to explain and identify competencies underpinning the CCFOs from a variety of approaches that allowed a more complete understanding of the concept at hand. The spider cobweb model is utilised to structure the identified competencies in the respective categories from which the questionnaires are derived. The identified competencies are verified by means of the questionnaires.

5.6 INTERVIEWS

Interviews, according to Cohen et al. (2001:267), enable the participants, be they interviewers or interviewees, to discuss their interpretations of the world in which they live and to express how they regard situations from their point of view. The intention of the interview in the paradigm of the research conducted is pure information collection (Cohen et al. 2001:267).

Human embeddedness is inescapable during interviews and the interviews occur in the field, hence the unstructured, nondirective, in-depth, interviews that involve asking questions, listening, expressing interest and recording what was said (Neuman 1997:372). As researcher I shared my own background to build trust and encourage the respondents to open up, but did not use leading questions. The focus of the interviews was to obtain the respondent's perspective or experiences of the Critical Cross-Field Outcomes.

The interviews occurred in a series over time. However, some respondents were interviewed only once, as the answers provided were not reliable and did not contribute to the authenticity of the questions asked. This is a weakness of informal conversational interviewing (Cohen et al. 2001:267) as different information is collected from different people with different questions.

Isaacs (Isaacs 2004) was selected as the main respondent. He indicated markers for the research as he provided significant unpublished and published documentation, legislative information and made reference to key stakeholders like Chris Vorwerk, and Merlyn Mehl (see reference, background and contributions in chapter 2). Markers are "passing references made by a respondent to an important event or feeling state" (Weiss 1994: 77). The results of the interviews led to the identification of related concepts, such as key competencies, Mayer competencies, generic competencies and others that were explored further in chapter 2. As the interviews had been conducted prior to the CCFO workshop they confirmed the lack of trustworthiness concerning the conceptualisation of the CCFOs. The CCFO workshop's rationale was embedded in the inaccurate nature of the conceptualisation of the CCFOs.

A report on the CCFO workshop follows.

5.7 CCFO WORKSHOP

The more one wishes to acquire unique non-standardised, personalised information about how individuals view the world, the more one veers towards qualitative open-ended unstructured interviewing (Cohen et al. 2001:270). The CCFO workshop is perceived an unstructured group interview for the purpose of identifying the competencies underpinning the CCFOs as the ETQA managers perceive it.

The workshop was conducted by me with the ETQA managers of the respective SETAs to identify, determine and verify the competencies underpinning of the CCFOs. I sought to interpret the opinion that the ETQA managers have of the CCFOs; even if this entailed a nuance description of the CCFOs. Qualitative knowledge expressed in normal language was the target.

The objective of this workshop was to define the Critical Cross-Field Outcomes as perceived by the ETQA managers. The outcomes of the workshop were defined in order to identify the competencies underpinning the Critical Cross-Field Outcomes and to determine the ETQAs' level of understanding of the CCFOs. The theoretical grounding of the CCFOs as identified in chapter 3 was verified by the ETQAs during the workshop. The group interview generated a wider range of response than would have been the case with individual interviews and brought together ETQA managers with varied opinions on the CCFOs as perceived and experienced in different fields and levels of the NQF.

The results of the workshop were used as the foundation for constructing the research questionnaire.

5.7.1 Methodology pertaining to the CCFO workshop

The sample for the CCFO workshop was that of the ETQA managers of the respective SETAs. The allocation of the SETAs per industry field by SAQA is discussed in chapter 3. Important though is that each SETA fulfils a quality assurance function by means of the ETQA. The function of the ETQA is to accredit service providers and also the learning programmes that these accredited service providers offer. The CCFOs ought to be embedded in the learning material that the accredited service providers offer. Thus the ETQA managers were identified as the sample group for the CCFO workshop.

The workshop was planned and prepared well in advance of the allocated date. The 25 ETQA managers each received an invitation letter to the workshop as well as a discussion document stating its purpose and objective. The list of the prospective participants was distributed among the ETQA managers to confirm attendance. 18 ETQA managers confirmed their attendance a day prior to the workshop; however, less than a quarter of the ETQA managers attended the workshop. The group consisted of 5 people only that limited the gathering of qualitative data.

The intention was for the ETQA managers to nominate competencies per CCFO statement. This was problematic as they experienced difficulties in generating and indicating underpinning competencies. The researcher, referring to respective chapters of the research under discussion, nominated competencies and the ETQA managers had to pitch the competencies under each CCFO statement to the best of their knowledge and understanding. A total of 275 competencies were identified, which included all the CCFO statements and all dimensions identified in the cognitive and affective domains.

Most of the identified competencies are repeated in most of the CCFO statements. This indicates that the CCFOs can be differentiated but that they are inseparable. While demonstrating the capability or competency of one CCFO statement it simultaneously develops or results in the next. It is important to note once again that the initial list of competencies is not the alpha and omega of the competencies underpinning the CCFOs but rather a starting point for further investigation, as it is not a system of accumulated certainties (Zuber-Skerritt 1996:18).

5.7.2 Rationale for the spider cobweb model

The following text describes the rationale for the spider cobweb model. This model is a way of structuring the 275 identified competencies in categories that intend to order the competencies in such a way that feasible questionnaires can be compiled and conclusions reached. In order to understand the spider cobweb model, a few concepts need to be explained.

The cognitive domain specific characteristics of the CCFOs are described in chapter 4. In this chapter a model (figure 13) is constructed to explain and source competencies that constitute the mentioned domain. The cognitive domain specific characteristics are explained by means of:

- Investigative competencies
- Functional competencies
- Generative competencies

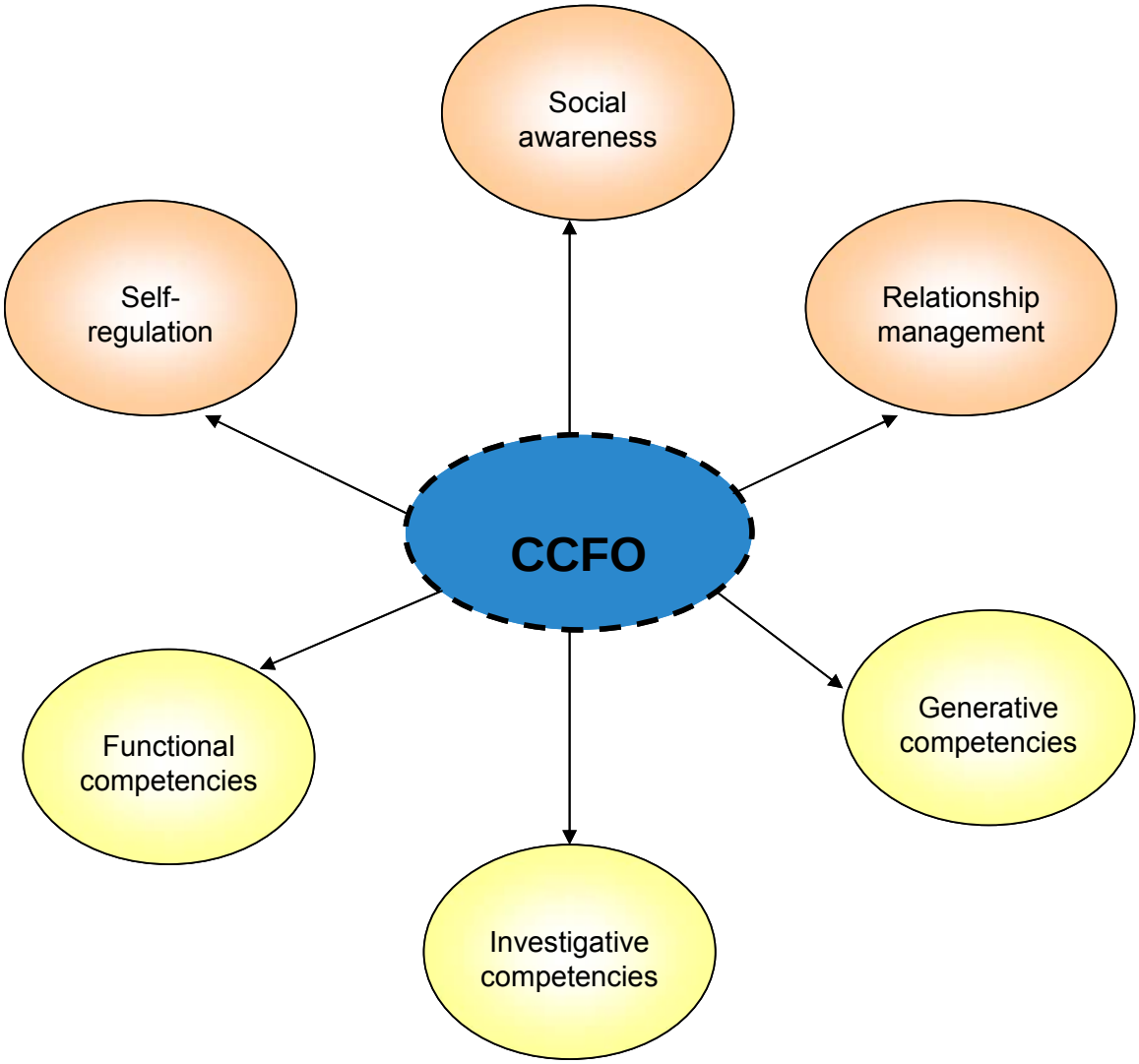
The affective domain specific characteristics are described in terms of:

- Self-regulative competencies
- Social competencies
- Relationship managerial competencies

The competencies as identified during the CCFO workshop were compacted for the spider cobweb model from which the questionnaire was compiled. This compacted model is necessary as the identified underpinning competencies were inexhaustible.

The upper half of the spider cobweb model, as illustrated below, represents the affective domain characteristics of the CCFO and the bottom half the cognitive domain characteristics. The division and positioning of the affective and cognitive domains were done merely for practical reasons and do not represent significant meaning. The mentioned spider cobweb model follows:

Figure 14 **Spider cobweb model representing the theoretical grounding of the CCFOs**



This model also relates to the life roles identified by Spady (2004:165) that complement the CCFOs. Spady describes a five-step process for translating the CCFO into a "compelling life-performance framework of 'exit outcomes' that directly empowers learners and genuinely transforms education in ways not envisioned in today's curriculum reforms". Spady has successfully analysed the CCFOs in terms of their three basic natures:

- Life role performances
- Broad enabling competencies
- Orientations or ways of thinking

Spady (2004:165) has indicated 5 life roles and these defined roles correspond to the competency components of the spider web:

- Organised life managers guided by an ethos of reflection and improvement relate to the self regulation competencies and generative competencies components of the spider cobweb model
- Conscientious global stewards guided by an ethos of caring and commitment relate to the social awareness and investigative competencies components of the spider cobweb model
- Active and collaborative citizens guided by an ethos of honesty and reliability relate to the social competencies and relationship managerial competencies components of the spider cobweb model
- Competent and productive contributors guided by an ethos of diligence and quality relate to the functional competencies and generative competencies components of the spider cobweb model
- Resourceful entrepreneurial opportunity creators guided by an ethos of initiative and innovation generative competencies relate to the self-regulative competencies and investigative competencies components of the spider cobweb model

It is impractical and not feasible to design a questionnaire to verify all 275 competencies pertaining to the CCFOs. This extensive competencies list was aligned with the six components of the spider cobweb model. Similar competencies were grouped together, synonyms were deleted, and only those competencies that best describe the spider-cobweb category were allotted. These allotted competencies were exploited for the purpose of the questionnaire.

The questionnaire was compiled according to the six components of the spider cobweb model. Discussions and findings of the questionnaires follow.

5.8 QUESTIONNAIRES

The richness of the data obtained from the CCFO workshop as well as the fact that the concentrated competencies were categorised in six components, prevented the construction of a single questionnaire. Six different questionnaires were constructed, one for each component of the spider cobweb model.
The following aspects were attended to while constructing the questionnaire in order to prevent common errors from being made.

No negatively stated questions were asked. The matrix-ranking format of the questionnaire prevents a poorly understood and confusing questionnaire. The instrument is not too long; only six components of the spider cobweb model are covered in the questionnaire. One questionnaire contains approximately 17–20 questions. Mono-operational bias (Mouton 2001:104) is avoided, and single construct measurement is avoided as the respondents are expected to order the competencies per category, which enables a relative degree of preference, priority and intensity to be charted (Cohen et al. 2001:252). No double-barreled questions were used. The competencies stated as the items, were well defined and explained in the questionnaire.

The questionnaires, constructed in Word application of the Micro Soft Office suite, were formatted to Excel spreadsheets. Initially it was decided to format the questionnaires using PDF software. This was impossible, as the software does not allow the respondent to type on the questionnaire as it appears on the screen. This also complicates the

programming of the questionnaires, as the data obtained had to be converted to an Excel spreadsheet to manipulate it with their software developed specifically for statistical manipulation.

The Excel formatted questionnaires force the respondents to complete every single ordering category. Each question contains variables that have to be ordered by the respondent. The Excel formatted questionnaires provide the respondent with drop-down lists containing values in accordance with the quantity ordering categories. Once a value has been selected, it is automatically eliminated from the list of possible values to choose from. However, the respondent is still able to change the values if decided to do so. The questionnaire is programmed in such a way that the respondent cannot exit the document unless fully completed, and the respondent receives a notification of this when opening the document. This forces the data to be comprehensive, with no missing values and no duplication of values.

Once the respondent has completed the questionnaire and returned it, the data are automatically converted to another Excel spreadsheet that captures all the responses of the entire sample group.

A pilot run of the questionnaires was performed before they were distributed to the identified sample group. The pilot run was performed to increase the reliability, validity and practicability of the data to be obtained (Cohen et al. 2001:252). The clarity of the questionnaires was checked, ambiguities or difficulties in wording were eliminated, feedback was sought on the type of questionnaire, visual appeal, layout, time taken to complete and trying out the coding.

Addendum C provides the questionnaires.

An enormous initial group of respondents was needed from which a sample group was extracted to complete the questionnaires. The sample group initially included all the ETD practitioners in South Africa. It was found after a long and intense search for a database that contains registered ETD practitioners that no such database exists. The ETDP SETA, which is responsible for the training of these practitioners, is not in possession of

a database of the qualified ETDPs. This SETA only reflects statistics of service providers that provide training towards an ETDP qualification.

The next step included contacting the National Learner Record Database (NLRD) of SAQA. The NLRD only reflects the registered SETAs. The SETAs were contacted to source information on the ETDPs. No information pertaining to the qualified ETDPs exists. After careful consideration it was decided to utilise the responses of accredited service providers of the respective SETAs.

Accredited service providers offer training and development initiatives per industry of the respective SETA. In order to become an accredited service provider one has to offer unit standard based training towards a registered qualification on the NQF. In order to provide training the service providers must have qualified as ETDPs; hence the rationale for utilising the accredited service providers.

The websites of the respective SETAs contain a section of accredited service providers under the ETQA heading. In total 1353 accredited service providers were sourced. Only the accredited service providers that appear on the websites of the respective SETAs were taken into account for the sample grouping. It was, however, found that 3 SETA websites were under construction and I could not access the contact details of those service providers. In an attempt to source these, the SETAs replied that I would have to wait until the websites were active and they could not give an indication of when that would be.

Furthermore, the details of the accredited service providers reflect only the name of the company, contact person, and contact detail. The sample group could therefore not be stratified due to the fact that limited information on the service providers was available.

As a PhD student at the University of Pretoria, I was entitled to obtain statistical support. I was allocated to a statistician and a research consultant from STATOMET. Dr L Louw, the statistician, Dr M van der Linde, the research consultant, my supervisor and I were all stakeholders in determining the sample group. I shall refer to this group as the research caucus group.

The total of 1353 accredited service providers were analysed to eliminate duplication. Since the questionnaires were distributed electronically via e-mail, those providers that did not have e-mail addresses according to the data as presented on the SETAs' websites, were eliminated. As many as 1325 providers were sourced and served as the sample group.

The questionnaires were transmitted electronically to the respondents. A programmer was sourced for this task. The questionnaires were to be presented in such a way that the respondent would not be able to change the font, size or characters of the questionnaires for the purpose of effective data capturing and coding. The programmer designed the questionnaires in an Excel format as discussed previously in this chapter.

As many as 290 e-mail messages were returned with the notification that the addresses could not be traced, thus indicating that the data on the websites of the SETAs could not be regarded as trustworthy.

Since the mail was sent electronically, the respondents were able to communicate with me by replying to the message. 8 respondents had immense negative criticism towards the SAQA and NQF concepts and refused to participate in the research. 3 service providers were of the opinion that research should rather be conducted on the question as to why the industry is so reluctant to take part in research in the Education, training and development environment. 35 respondents indicated that they were too busy to adhere and conform to the new legislation and requirements to complete the questionnaire and that research of this kind did not add value to them at all. Only 3 respondents requested that the results of this research be communicated to them.

Since six questionnaires were distributed, six different sample groups were identified. After two follow-up messages and resending the questionnaires to the identified sample groups, delaying the research project plan by a month and a half, the response rate for the different questionnaires was as follows:

Table 17 Questionnaires frequency

Questionnaire	Frequency of answers
Questionnaire 1	9
Questionnaire 2	8
Questionnaire 3	13
Questionnaire 4	8
Questionnaire 5	12
Questionnaire 6	11

Neither reliable nor valid results, and no correlation or interpretation can statistically be made on such limited responses. Action research is the overarching paradigm of the research, but true to this nature of research the initial planning differs from that being implemented during the second and third stages of the research cycle: I could change from the intentional statistical format I had planned for to one with a statistical descriptive format.

One of the alternatives was to contact the respondents, interview them and conduct a qualitative study on their practice and learning programme design and delivery modes. Logistically this would be impossible. The service providers are distributed nationally. Time, costs and availability were all obstacles in contacting the respondents. Moreover, such follow-up contact would be futile in view of the ETDPs' overwhelming negativity towards the investigation.

The data were analysed in depth. It was then decided to group some of the relating variables in order to describe the data more accurately. Variable 1 to Variable 7 in all 6 questionnaires are all related to the biographical information of the respondents. The frequency of the responses was correlated with the questionnaires. It was cumulatively decided that question 2 in all 6 questionnaires, indicating where the respondent's qualification was obtained, would be merged into 2 groups: University and Technikon being grouped as **Higher Education** and Technical College, private training provider/centre, RPL and Compilation of short courses being grouped as **Other Training Interventions**. Question 3, relating to the work environment, was converted in all 6

questionnaires in two groups, namely **Higher Education and Training Institutions** (indicating only Higher Education and Training Institutions) and **Other Training Providers** (including Further Education, training and development Institutions, General Education, training and development Institutions, SETAs, ETQA managers, Industry service providers as well as SAQA). Question 4 remained unchanged. Question 5 was converted into two groups, namely **Formal Training Programmes** (indicating Training Programmes) and **Other Instances** (Including SAQA, SGBs, and word of mouth). All remaining questions remained unchanged. Question 6 (variable V 8 – N) was processed in terms of the percentile pertaining to a specific statement of the CCFOs.

5.9 DATA ANALYSIS AND INTERPRETATION

Manageable themes, patterns and trends were identified during the analysis of the data. "Data are analyzed to determine the relationship between concepts, constructs or variables and to see whether there are any patterns or trends that can be identified or isolated or to establish themes in the data" (Mouton 2001:108). Steyn et al. (1999) maintain descriptive statistics and these principles were incorporated in describing the data obtained.

The representation below could be made within the limits of the data. The data are represented in tabular format. The tabular representation enables the reader to correlate the ratings of the competencies per spider cobweb model as indicated by the respective respondent groups. The competencies as represented in the tables are ranked from the highest order to the lowest.

The competency categories per spider cobweb model have been interpreted following the sequence of the CCFOs; the data is represented accordingly. Each CCFO statement needs to be discussed in its own right as the competencies per statement are unique.

The first column under the overall ranking heading indicates the V-number (variable number as indicated in the questionnaires). A V-number has been allocated to all the competencies in the questionnaires for ease of data capturing and data manipulation. These V-numbers are represented in the tables to draw a parallel to the questionnaires. The middle column provides a description of the V-number. The Code column indicates this V-number.

The third column under the overall ranking section indicates the rating of the competencies as perceived by all the respondents as a group.

The other columns indicate the V-number according to the ranking received per respondent group; the respondent groups were indicated earlier in this chapter.

The colour coding of the tables are as follows:

Indicates the competency that received the highest ranking by the respective groups

Indicates the competency that received lowest ranking by the respective groups

The tables are followed by an analysis indicating and correlating the highest and lowest competencies respectively. Each CCFO statement needs to be discussed in its own right as the competencies per statement are unique.

When “NIL” is indicated as a ranking, it indicates that the respondent group under discussion did not respond to the questionnaire.

The format of the tables differs from the rest of text for ease of reference, layout and visual representation of the data.

Following is the tabular representation of the data.

Table 17 Identify and solve problems using critical and creative thinking: Functional competencies

CCFO statement	Identify and solve problems using critical and creative thinking	
Competency category	Functional competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V13	Recognising varying contributing elements and concepts at hand	1
V8	Handle multiple demands in confronting situations	2
V11	Enlighten by offering clear explanations and descriptions	3
V12	Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others	4
V10	Systematically shape and re-shape of elements referring to sequence	5
V9	Communicate facts, thoughts and feelings	6
V14	Reflect own estimation of elements or concepts at hand	7

Comparing qualifying institutions	
Higher Education	**Other training interventions**
V13	V13
V12	V8
V11	V11
V8	V9
V10	V12
V9	V10
V14	V14
Comparing work environment	
Higher Education and Training institution	**Other training providers**
V12	V13
V10	V8
V11	V11
V13	V12
V9	V9
V8	V10
V14	V14
Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V12	V8
V13	V13
V11	V11
V14	V10
V8	V9
V9	V12
V10	V14

The overall ranking of the CCFO statement "Identify and solve problems using critical and creative thinking" within the functional category of the spider cobweb model is ranked in the following order from highest to lowest priority:

- Recognising varying contributing elements and concepts at hand
- Handle multiple demands in confronting situations
- Enlighten by offering clear explanations and descriptions
- Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others
- Systematically shape and re-shape of elements referring to sequence
- Communicate facts, thoughts and feelings
- Reflect own estimation of elements or concepts at hand

The competency "Recognising varying contributing elements and concepts at hand" received an overall highest ranking.

When comparing the qualifying institutions, this competency received highest ranking by both the "Higher Education" group and "Other Training Interventions" group.

When comparing the work environment, the "Other training providers" group's ranking for the highest ranked competency correlates with that of the overall ranking. The Higher Education and Training institution group's ranked this competency fourth.

When comparing the awareness of CCFOs, both groups ranked this competency second of all the other competencies.

The competency "Reflect own estimation of elements or concepts at hand" received the lowest overall ranking of all the competencies in this regard by all the groups in the different comparisons except for the group "Formal training programmes" that ranked this competency fourth.

Table 18 Identify and solve problems using critical and creative thinking: Investigative competencies

CCFO statement:	Identify and solve problems using critical and creative thinking
Competency category:	Investigative competencies

Overall ranking		
Variable	**Competencies**	**Ranking**
V8	Separate important from unimportant information	1
V9	Identify obstructions preventing the reaching of goals	2
V10	Sequence information	3
V12	Order information or processes categorically	4
V14	Critique thoughts, feelings and behaviour	5
V17	Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour	6
V11	Predict results	7
V13	Make fine distinctions	8
V15	Estimate results and or behaviour	9
V16	Justify the merits and applicability of thoughts, feelings and behaviour	10

Comparing qualifying institutions	
Higher Education	**Other training interventions**
V8	V8
V9	V9
V12	V12
V12	V11
V17	V12
V14	V13
V11	V14
V13	V15
V15	V16
V16	V17

Comparing work environment	
Higher Education and Training institution	**Other training providers**
V8	NIL
V9	NIL
V10	NIL
V12	NIL
V14	NIL
V17	NIL
V11	NIL
V13	NIL
V15	NIL
V16	NIL

Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V8	V9
V9	V10
V10	V8
V17	V12
V12	V11
V14	V13
V11	V14
V13	V15
V15	V16
V16	V17

The overall ranking of the CCFO statement “Identify and solve problems using critical and creative thinking” within the investigative competency category of the spider cobweb model is ranked in the following order from highest to lowest priority:

- Separate important from unimportant information
- Identify obstructions preventing the reaching of goals
- Sequence information
- Order information or processes categorically
- Critique thoughts, feelings and behaviour
- Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour
- Predict results
- Make fine distinctions
- Estimate results and or behaviour
- Justify the merits and applicability of thoughts, feelings and behaviour

The competency “Separate important from unimportant information” received the overall highest ranking by all the respective groups except the “Other instances respondent group. The latest mentioned ranked this competency third.

The competency “Justify the merits and applicability of thoughts, feelings and behaviour’ received the lowest ranking by all but the following two groups: “Other training interventions” and “Other instances”. These mentioned groups both ranked this competency as second last.

Table 19 Identify and solve problems using critical and creative thinking: Relationship managerial competencies

CCFO statement	Identify and solve problems using critical and creative thinking	
Competency category	Relationship managerial competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V11	Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour	1
V12	Plan timeously in advance to accomplish a goal	2
V9	Initiate and / or manage change	3
V8	Reveal a result orientated approach	4
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V8 V9 V10 V11	V11 V10 V9 V8	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V9 V8 V11 V10	V11 V10 V9 V8	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V11 V9 V10 V8	V10 V11 V8 V9	

The overall ranking of the CCFO statement “Identify and solve problems using critical and creative thinking” within the relationship managerial competencies category of the spider cobweb model was ranked in the following order from highest to lowest priority:

- Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour
- Plan timeously in advance to accomplish a goal
- Initiate and / or manage change
- Reveal a result orientated approach

The competency “Assimilate/Integrate information in order to adapt or adjust thoughts, feelings and behaviour” received the highest overall ranking. When comparing qualifying institutions, the “Other training interventions” group ranked this competency highest, the same as the “Overall ranking”, whereas the “Higher Education” groups ranked it the lowest.

When comparing work environment the “Other training providers” group ranked this competency highest, the same as the “Overall ranking” whereas the Higher Education and Training Institution” group ranked this competency third.

When comparing awareness of CCFOs the “Formal training programmes” group ranked this competency the highest, the same as the “ Overall ranking” whereas the “Other instances” ranked it the second.

The competency “Reveal a result orientated approach” received an overall lowest ranking.

When comparing qualifying institutions this competency received the highest ranking by the “Higher Education” group and lowest ranking by the “Other training interventions” group.

When comparing work environment this competency was ranked second highest by the "Higher Education and Training institution" group and lowest ranking by the "Other training interventions" group.

When comparing awareness of CCFOs this competency received lowest ranking by "Formal training programmes" and was ranked third by the "Other instances" group.

Table 20 Identify and solve problems using critical and creative thinking: Social competencies

CCFO statement	Identify and solve problems using critical and creative thinking	
Competency category	Social competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V11	Show sensitivity, anticipate and understand other's perspectives	1
V8	Acknowledge key power relationships and strategies accurately	2
V10	Recognise how feelings affect performance	3
V9	Identify bias or stereotypes	4
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V8 V11 V10 V9	V11 V8 V9 V10	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V11 V9 V8 V10	V11 V8 V10 V9	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V8 V11 V10 V9	V11 V8 V10 V9	

The overall ranking of the CCFO statement “Identify and solve problems using critical and creative thinking” within the social competencies category of the spider cobweb model was ranked in the following order from highest to lowest priority:

- Show sensitivity, anticipate and understand other's perspectives
- Acknowledge key power relationships and strategies accurately
- Recognise how feelings affect performance
- Identify bias or stereotypes

The competency “Show sensitivity, anticipate and understand others perspectives” received the highest overall ranking. When comparing qualifying institutions the “Other training interventions” group ranked this competency highest, the same as the “Overall ranking”, whereas the “Higher Education” groups ranked it second.

When comparing work environment the “Other training providers” group as well as the “Higher Education and Training Institution” group ranked this competency the highest, the same as the “Overall ranking”.

When comparing awareness of CCFOs, the “Formal training programmes” group ranked this competency second, whereas the “Other instances” ranked it the highest.

The competency “Identify bias or stereotype” received an overall lowest ranking.

When comparing qualifying institutions this competency received the lowest ranking by the “Higher Education” group, the same as the “Overall ranking”, and second lowest ranking by the “Other training interventions” group.

When comparing work environment this competency was ranked second highest by the “Higher Education and Training institution” group and the lowest ranking by the “Other training interventions” group.

When comparing awareness of CCFOs this competency received the lowest ranking by both the “Formal training programmes” and “Other instances” groups.

Table 21 Identify and solve problems using critical and creative thinking: Self-regulative competencies

CCFO statement	Identify and solve problems using critical and creative thinking	
Competency category	Self-regulative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V9	Think clearly and stay focused under pressure	1
V10	Admit own mistakes	2
V8	Pursue goals beyond requirements	3
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V9 V8 V10	V9 V10 V8	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V9 V8 V10	V9 V10 V8	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V9 V8 V10	V9 V10 V8	

The overall ranking of the CCFO statement “Identify and solve problems using critical and creative thinking” within the self-regulative category of the spider cobweb model was ranked in the following order from highest to lowest:

- Think clearly and stay focused under pressure
- Admit own mistakes
- Pursue goals beyond requirements

The competency “Think clearly and stay focused under pressure” received the highest ranking. All the respective groups ranked this competency the highest.

The competency “Pursue goals beyond requirements” received an overall lowest ranking.

When comparing qualifying institutions this competency received second highest ranking by the “Higher Education” group and lowest ranking by the “Other training interventions” group.

When comparing work environment this competency was ranked second highest by the “Higher Education and Training institution” group and lowest ranking by the “Other training interventions” group.

When comparing awareness of CCFOs this competency received second highest ranking by the “Formal training programmes” and lowest ranking by the “Other instances” group.

Table 22 Identify and solve problems using critical and creative thinking: Generative competencies

CCFO statement	Identify and solve problems using critical and creative thinking	
Competency category	Generative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V14	Explore fresh ideas from a variety of sources	1
V13	Assemble information or material together into a structure	2
V10	State a goal clearly and unambiguously	3
V9	Supply missing or implied information	4
V8	Generate new ideas	5
V11	Conceive, create something that did not exist before	6
V12	Design, construct and execute prepared plans	7
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V12 V14 V10 V13 V8 V11 V9	V14 V13 V10 V9 V8 V11 V12	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V14 V12 V11 V8 V9 V13 V10	V14 V13 V10 V9 V8 V11 V12	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V14 V13 V10 V8 V9 V11 V12	V13 V9 V10 V14 V8 V11 V12	

The overall ranking of the CCFO statement “Identify and solve problems using critical and creative thinking” within the generative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Explore fresh ideas from a variety of sources
- Assemble information or material together into a structure
- State a goal clearly and unambiguously
- Supply missing or implied information
- Generate new ideas
- Conceive, create something that did not exist before
- Design, construct and execute prepared plans

The competency “Explore fresh ideas from a variety of sources” received the highest overall ranking. When comparing qualifying institutions, the “Higher Education “group ranked this competency second highest, whereas the “Other training interventions” groups ranked it highest.

When comparing work environment, both the “Other training providers” group as well as “Higher Education and Training Institution” group ranked this competency the highest, the same as the “Overall ranking”.

When comparing awareness of CCFOs, the “Formal training programmes” group ranked this competency the highest, whereas the “Other instances” ranked it fourth.

The competency “Design, construct and execute prepared plans” received an overall lowest ranking.

When comparing qualifying institutions this competency received the highest ranking by the “Higher Education” group and lowest ranking by the “Other training interventions” group.

When comparing work environment this competency was ranked second highest by the "Higher Education and Training institution" group and ranked lowest by the "Other training interventions" group.

When comparing awareness of CCFOs this competency received lowest ranking by both the "Formal training programmes" and "Other instances" group.

Table 23 Work effectively with others as a member of a team, group, organisation or community: Functional competencies

CCFO statement	Work effectively with others as a member of a team, group, organisation or community	
Competency category	Functional competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V15	Communicate facts, thoughts and feelings	1
V18	Be acquainted with concept/element at hand in order to identify, distinguish an differentiate it amongst others	2
V17	Enlighten by offering clear explanations and descriptions	3
V19	Recognise varying contributing elements and concepts at hand	4
V16	Systematically shape and re-shape of elements referring to sequence	5
V20	Reflect own estimation of elements or concepts at hand	6

Comparing qualifying institutions	
Higher Education	**Other training interventions**
V18	V15
V19	V17
V15	V16
V17	V18
V16	V20
V20	V19
Comparing work environment	
Higher Education and Training institution	**Other training providers**
V18	V15
V16	V18
V17	V17
V19	V19
V15	V16
V20	V20
Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V18	V15
V20	V18
V17	V16
V19	V17
V15	V19
V16	V20

The overall ranking of the CCFO statement "Work effectively with others as a member of a team, group, organisation or community" within the functional competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Communicate facts, thoughts and feelings
- Be acquainted with concept/element at hand in order to identify, distinguish an differentiate it amongst others
- Enlighten by offering clear explanations and descriptions
- Recognise varying contributing elements and concepts at hand
- Systematically shape and re-shape of elements referring to sequence
- Reflect own estimation of elements or concepts at hand

The competency "Communicate facts, thoughts and feelings" received the highest ranking. When comparing qualifying institutions, the "Other training interventions" group ranked this competency highest, the same as the "Overall ranking", whereas the "Higher Education" groups ranked it third.

When comparing work environment, the "Higher Education and Training Institution" group ranked this competency second lowest, whereas the "Other training providers" group ranked this competency the highest, the same as the "Overall ranking".

When comparing awareness of CCFOs, the "Formal training programmes" group ranked this competency second lowest, whereas the "Other instances" group ranked this competency highest, the same as the "Overall ranking".

The competency "Reflect own estimation of elements or concepts at hand" received an overall lowest ranking.
When comparing qualifying institutions, this competency received the lowest ranking by the "Higher Education" group and the second lowest ranking by the "Other training interventions" group.

When comparing work environment, this competency was ranked lowest by both the "Higher Education and Training institution" group and the "Other training interventions" group.

When comparing awareness of CCFOs, this competency received the second highest ranking by the "Formal training programmes", whereas the "Other instances" group ranked this competency the lowest.

Table 24 Work effectively with others as a member of a team, group, organisation or community: Investigative competencies

CCFO statement	Work effectively with others as a member of a team, group, organisation or community
Competency category	Investigative competencies

Overall ranking		
Variable	**Competencies**	**Ranking**
V19	Identify obstructions preventing the reaching of goals	1
V18	Separate important from unimportant information	2
V20	Sequence information	3
V22	Order information or processes categorically	4
V26	Assimilate/Integrate information in order to adapt or adjust thoughts, feelings and behaviour	5
V21	Predict results	6
V23	Make fine distinctions	7
V24	Critique thoughts, feelings and behaviour	8
V25	Justify the merits and applicability of thoughts, feelings and behaviour	9

Comparing qualifying institutions	
Higher Education	**Other training interventions**
V19	V18
V18	V19
V20	V20
V22	V21
V26	V22
V21	V23
V24	V24
V23	V25
V25	V26

Comparing work environment	
Higher Education and Training institution	**Other training providers**
NIL	V19
NIL	V18
NIL	V20
NIL	V22
NIL	V26
NIL	V21
NIL	V23
NIL	V24
NIL	V25

Comparing awareness of CCFOs

Formal training programmes	Other instances
V19	V19
V18	V20
V20	V18
V22	V24
V26	V21
V21	V22
V23	V26
V24	V23
V25	V25

The overall ranking of the CCFO statement "Work effectively with others as a member of a team, group, organisation or community" within the investigative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Identify obstructions preventing the reaching of goals
- Separate important from unimportant information
- Sequence information
- Order information or processes categorically
- Assimilate/Integrate information in order to adapt or adjust thoughts, feelings and behaviour
- Predict results
- Make fine distinctions
- Critique thoughts, feelings and behaviour
- Justify the merits and applicability of thoughts, feelings and behaviour

The competency "Identify obstructions preventing the reaching of goals" received the highest overall ranking. All the groups ranked this competency highest except "Other training interventions", which ranked it second.

The competency "Justify the merits and applicability of thoughts, feelings and behaviour" received an overall lowest ranking. All the groups ranked this competency lowest except the "Other training interventions" group, which ranked it second last.

Table 25 Work effectively with others as a member of a team, group, organisation or community: Relationship managerial competencies

CCFO statement	Work effectively with others as a member of a team, group, organisation or community	
Competency category	Relationship managerial competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V19	Assimilate/Integrate information in order to adapt or adjust thoughts, feelings and behaviour	1
V17	Contribute ideas in order to accomplish a common goal	2
V16	Reveal team qualities like respect, helpfulness and co-operation	3
V15	Identify and nurture opportunities for collaboration	4
V18	Give and take direction	5
V13	Initiate and/or manage change	6
V12	Guide the performance of others while holding them accountable	7
V14	Cultivate and maintain extensive informal networks	8
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V17 V16 V19 V13 V15 V12 V18 V14	V19 V17 V16 V15 V18 V12 V13 V14	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V13 V15 V17 V12 V19 V16 V18 V14	V19 V17 V16 V15 V18 V12 V14 V13	

Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V19	V19
V17	V17
V16	V13
V15	V15
V18	V14
V12	V18
V13	V12
V14	V16

The overall ranking of the CCFO statement, “Work effectively with others as a member of a team, group, organisation or community” within the relationship managerial competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Assimilate/Integrate information in order to adapt or adjust thoughts, feelings and behaviour
- Contribute ideas in order to accomplish a common goal
- Reveal team qualities like respect, helpfulness and co-operation
- Identify and nurture opportunities for collaboration
- Give and take direction
- Initiate and/or manage change
- Guide the performance of others while holding them accountable
- Cultivate and maintain extensive informal networks

The competency “Assimilate/Integrate information in order to adapt or adjust thoughts, feelings and behaviour” received the highest ranking. When comparing qualifying institutions, the “Higher Education” group ranked this competency third, whereas the “Other training interventions” groups ranked it first.

When comparing work environment, the “Higher Education and Training Institution” group ranked this competency fifth, whereas “Other training providers” group ranked this competency the highest, the same as the “Overall ranking”.

When comparing awareness of CCFOs, both the “Formal training programmes” group and the “Other instances” group ranked it highest.

The competency “Cultivate and maintain extensive informal networks” received an overall lowest ranking.

When comparing qualifying institutions, this competency received the lowest ranking by both the “Higher Education” group and the “Other training interventions” group.

When comparing work environment, this competency was ranked the lowest by the “Higher Education and Training institution” group and second last by the “Other training interventions” group.

When comparing awareness of CCFOs this competency received the lowest ranking by “Formal training programmes” and the fourth lowest by the “Other instances” group.

Table 26 Work effectively with others as a member of a team, group, organisation or community: Social competencies

CCFO statement	Work effectively with others as a member of a team, group, organisation or community	
Competency category	Social competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V12	Understand diverse worldviews and demonstrate sensitivity to group differences	1
V16	Interact effectively	2
V17	Show sensitivity, anticipate and understand other's perspectives	3
V14	Acknowledge and accept information sharing	4
V13	Predict responses of others to particular actions or events	5
V15	Seek and fulfill own role in a group situation	6
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V16 V17 V15 V14 V12 V13	V12 V16 V17 V14 V19 V15	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V12 V15 V16 V17 V14 V13	V12 V16 V17 V14 V13 V15	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V12 V15 V16 V17 V14 V13	V17 V12 V16 V14 V13 V15	

The overall ranking of the CCFO statement, “Work effectively with others as a member of a team, group, organisation or community” within the social competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Understand diverse worldviews and demonstrate sensitivity to group differences
- Interact effectively
- Show sensitivity, anticipate and understand other's perspectives
- Acknowledge and accept information sharing
- Predict responses of others to particular actions or events
- Seek and fulfill own role in a group situation

The competency “Understand diverse worldviews and demonstrate sensitivity to group differences” received the highest overall ranking.

When comparing qualifying institutions, the “Higher Education” group ranked this competency second last, whereas the “Other training interventions” groups ranked it highest.

When comparing work environment, both the “Higher Education and Training Institution” group and the “Other training interventions” group ranked this competency highest.

When comparing awareness of CCFOs, the “Formal training programmes” group ranked this competency highest and the “Other instances” ranked it second.

The competency “Seek and fulfill own role in a group situation”, received an overall lowest ranking.

When comparing qualifying institutions, this competency received a third ranking by the “Higher Education” group and the “Other training interventions” group ranked it lowest.

When comparing work environment, the “Higher Education and Training institution” group ranked this competency second and the “Other training interventions” group ranked it last.

When comparing awareness of CCFOs, this competency received second highest ranking by “Formal training programmes” and the lowest ranking by the “Other instances” group.

Table 27 Work effectively with others as a member of a team, group, organisation or community: Self-regulative competencies

CCFO statement	Work effectively with others as a member of a team, group, organisation or community	
Competency category	Self-regulative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V12	Adapt priorities to meet the varying requirements of a situation	1
V14	Be adaptable and aware of one's behaviour based on feedback and suggestions from others	2
V12	Honour the links between feelings, thoughts and actions of self as well as others	3
V13	Express a guiding awareness of values and goals	4
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V11 V14 V13 V12	V11 V14 V12 V13	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V13 V11 V14 V12	V11 V14 V12 V13	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V11 V13 V14 V12	V11 V14 V12 V13	

The overall ranking of the CCFO statement, “Work effectively with others as a member of a team, group, organisation or community” within the self-regulative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Adapt priorities to meet the varying requirements of a situation
- Be adaptable and aware of one's behaviour based on feedback and suggestions from others
- Honour the links between feelings, thoughts and actions of self as well as others
- Express a guiding awareness of values and goals

The competency, “Adapt priorities to meet the varying requirements of a situation” received the highest overall ranking.

When comparing qualifying institutions, the “Higher Education” group ranked this competency last, whereas the “Other training interventions” groups ranked it second last.

When comparing work environment, the “Higher Education and Training Institution” group ranked this competency last, whereas the “Other training providers” ranked it second last.

When comparing awareness of CCFOs, the “Formal training programmes” group ranked this competency last, and the “Other instances” ranked it second last.

The competency, “Express a guiding awareness of values and goals” received an overall lowest ranking.

When comparing qualifying institutions, this competency received a ranking of third by the “Higher Education” group and the “Other training interventions” group ranked it last. When comparing work environment, the “Higher Education and Training institution” group ranked this competency highest and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received second highest ranking by the “Formal training programmes” and the lowest ranking by the “Other instances” group.

Table 28 Work effectively with others as a member of a team, group, organisation or community: Generative competencies

CCFO statement	Work effectively with others as a member of a team, group, organisation or community	
Competency category	Generative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V16	State a goal clearly and unambiguously	1
V18	Design, construct and execute prepared plans	2
V15	Supply missing or implied information	3
V17	Conceive, create something that did not exist before	4
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V16 V15 V17 V18	V16 V18 V15 V17	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V16 V15 V18 V17	V16 V18 V15 V17	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V16 V18 V15 V17	V15 V16 V18 V17	

The overall ranking of the CCFO statement, “Work effectively with others as a member of a team, group, organisation or community” within the generative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- State a goal clearly and unambiguously
- Design, construct and execute prepared plans
- Supply missing or implied information
- Conceive, create something that did not exist before

The competency, “State a goal clearly and unambiguously” received the highest overall ranking. When comparing qualifying institutions, both the “Higher Education” group and the “Other training interventions” group ranked it highest.

When comparing work environment, both the “Higher Education and Training Institution” group and the “Other training providers” ranked it highest.

When comparing awareness of CCFOs, the “Formal training programmes” group ranked this competency highest and the “Other instances” ranked it second.

The competency “Conceive, create something that did not exist before” received an overall lowest ranking. When comparing qualifying institutions, this competency received a ranking of third by the “Higher Education” group, and was ranked last by the “Other training interventions” group.

When comparing work environment, both the “Higher Education and Training institution” group and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received the lowest ranking by the “Formal training programmes” group and by the “Other instances” group.

Table 29 Organise and manage oneself and one's activities responsibly and effectively: Functional competencies

CCFO statement	Organise and manage oneself and one's activities responsibly and effectively	
Competency category	Functional competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V23	Be acquainted with concept/element at hand in order to identify, distinguish an differentiate it amongst others	1
V24	Recognise varying contributing elements and concepts at hand	2
V21	Communicate facts, thoughts and feelings	3
V22	Enlighten by offering clear explanations and descriptions	4
V25	Reflect own estimation of elements or concepts at hand	5
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V24 V23 V22 V21 V25	V23 V24 V21 V22 V25	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V23 V22 V24 V21 V25	V23 V24 V21 V22 V25	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V23 V24 V25 V21 V22	V23 V24 V21 V22 V25	

The overall ranking of the CCFO statement, “Organise and manage oneself and one's activities responsibly and effectively” within the functional competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others
- Recognise varying contributing elements and concepts at hand
- Communicate facts, thoughts and feelings
- Enlighten by offering clear explanations and descriptions
- Reflect own estimation of elements or concepts at hand

The competency, “Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others” received the highest overall ranking.

When comparing qualifying institutions, the “Higher Education” group ranked it second, whereas the “Other training interventions” groups ranked it highest.

When comparing work environment, both the “Higher Education and Training Institution” group and the “Other training providers” ranked it highest.

When comparing awareness of CCFOs, both the “Formal training programmes” group and the “Other instances” group ranked it highest.

The competency, “Reflect own estimation of elements or concepts at hand” received an overall lowest ranking.

When comparing qualifying institutions, this competency received the lowest ranking from both the “Higher Education” group and the “Other training interventions” group.

When comparing work environment, both the “Higher Education and Training institution” group and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received a ranking of third by the “Formal training programmes” and a ranking of last from the “Other instances” group.

Table 30 Organise and manage oneself and one's activities responsibly and effectively: Investigative competencies

CCFO statement	Organise and manage oneself and one's activities responsibly and effectively
Competency category	Investigative competencies

Overall ranking		
Variable	**Competencies**	**Ranking**
V27	Separate important from unimportant information	1
V28	Identify obstructions preventing the reaching of goals	2
V30	Order information or processes categorically	3
V31	Make fine distinctions	4
V33	Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour	5
V29	Predict results	6
V32	Critique thoughts, feelings and behaviour	7

Comparing qualifying institutions	
Higher Education	**Other training interventions**
V27	V27
V28	V28
V30	V29
V33	V30
V31	V31
V32	V32
V29	V33

Comparing work environment	
Higher Education and Training institution	**Other training providers**
NIL	V27
NIL	V28
NIL	V30
NIL	V31
NIL	V33
NIL	V29
NIL	V32

Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V27	V28
V28	V27
V30	V30
V31	V33
V33	V29
V29	V32
V32	V31

The overall ranking of the CCFO statement, “Organise and manage oneself and one's activities responsibly and effectively” within the investigative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Separate important from unimportant information
- Identify obstructions preventing the reaching of goals
- Order information or processes categorically
- Make fine distinctions
- Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour
- Predict results
- Critique thoughts, feelings and behaviour

The competency, “Separate important from unimportant information” received the highest overall ranking.

When comparing qualifying institutions, both the “Higher Education” group the “Other training interventions” groups ranked it highest.

When comparing work environment, the “Higher Education and Training Institution” group did not respond to this questionnaire, and the “Other training providers” ranked it highest.

When comparing awareness of CCFOs, the “Formal training programmes” group ranked it highest and the “Other instances” group ranked it second.

The competency, “Critique thoughts, feelings and behaviour” received an overall lowest ranking.

When comparing qualifying institutions, this competency received second last ranking by both the “Higher Education” group and the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group did not respond to this questionnaire, and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received the lowest ranking from the “Formal training programmes”, and was ranked second last by the “Other instances” group.

Table 31 Organise and manage oneself and one's activities responsibly and effectively: Relationship managerial competencies

CCFO statement	Organise and manage oneself and one's activities responsibly and effectively	
Competency category	Relationship managerial competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V20	Plan timeously in advance to accomplish a goal	1
V21	Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour	2
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V20 V21	V20 V21	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V20 V21	V20 V21	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V20 V21	V20 V21	

The overall ranking of the CCFO statement, “Organise and manage oneself and one's activities responsibly and effectively” within the relationship managerial competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Plan timeously in advance to accomplish a goal
- Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour

All 6 comparative groups ranked this competency in accordance to the “Overall ranking”.

Table 32 Organise and manage oneself and one's activities responsibly and effectively: Social competencies

CCFO statement	Organise and manage oneself and one's activities responsibly and effectively	
Competency category	Social competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V18	Acknowledge and accept information sharing	1
V19	Seek and fulfill own role in a group situation	2
V20	Show sensitivity, anticipate and understand other's perspectives	3
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V18 V19 V20	V18 V20 V19	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V18 V19 V20	V18 V19 V20	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V18 V19 V20	V18 V19 V20	

The overall ranking of the CCFO statement, “Organise and manage oneself and one's activities responsibly and effectively” within the social competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Acknowledge and accept information sharing
- Seek and fulfill own role in a group situation
- Show sensitivity, anticipate and understand other's perspectives

All the groups ranked the competencies the same as the “Overall ranking”, except for the “Other training interventions” that ranked it second.

Table 33 Organise and manage oneself and one's activities responsibly and effectively: Self-regulative competencies

CCFO statement	Organise and manage oneself and one's activities responsibly and effectively
Competency category	Self-regulative competencies

Overall ranking		
Variable	**Competencies**	**Ranking**
V18	Establishes priorities as part of system	1
V16	Think clearly and stay focused under pressure	2
V17	Admit own mistakes	3
V15	Pursue goals beyond requirements	4

Comparing qualifying institutions	
Higher Education	**Other training interventions**
V18 V15 V16 V17	V18 V16 V17 V15

Comparing work environment	
Higher Education and Training institution	**Other training providers**
V18 V16 V15 V17	V18 V16 V17 V15

Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V18 V15 V16 V17	V18 V16 V17 V15

The overall ranking of the CCFO statement, “Organise and manage oneself and one's activities responsibly and effectively” within the self-regulative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Establishes priorities as part of system
- Think clearly and stay focused under pressure
- Admit own mistakes
- Pursue goals beyond requirements
- Critique thoughts, feelings and behaviour

The competency, “Establishes priorities as part of system” received the highest overall ranking by all the comparative groups.

The competency “Critique thoughts, feelings and behaviour” received an overall lowest ranking.

When comparing qualifying institutions, this competency received second highest ranking by the “Higher Education” group, and the “Other training interventions” group ranked it lowest.

When comparing work environment, the “Higher Education and Training institution” group ranked it second last, and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received a ranking of second by the “Formal training programmes”, and the lowest ranking by the “Other instances” group.

Table 34 Organise and manage oneself and one's activities responsibly and effectively: Generative competencies

CCFO statement	Organise and manage oneself and one's activities responsibly and effectively	
Competency category	Generative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V20	State a goal clearly and unambiguously	1
V22	Design, construct and execute prepared plans	2
V23	Assemble information or material together into a structure	3
V19	Supply missing or implied information	4
V24	Explore fresh ideas from a variety of sources	5
V21	Conceive, create something that did not exist before	6

Comparing qualifying institutions	
Higher Education	**Other training interventions**
V22	V20
V23	V22
V20	V23
V21	V19
V19	V24
V24	V21
Comparing work environment	
Higher Education and Training institution	**Other training providers**
V22	V20
V23	V23
V19	V22
V20	V19
V21	V24
V24	V21
Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V20	V20
V22	V19
V23	V23
V19	V24
V21	V22
V24	V21

The overall ranking of the CCFO statement, “Organise and manage oneself and one's activities responsibly and effectively” within the generative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- State a goal clearly and unambiguously
- Design, construct and execute prepared plans
- Assemble information or material together into a structure
- Supply missing or implied information
- Explore fresh ideas from a variety of sources
- Conceive, create something that did not exist before

The competency, “State a goal clearly and unambiguously” received the highest overall ranking.

When comparing qualifying institutions, the “Higher Education” group ranked it third and the “Other training interventions” groups ranked it first.

When comparing work environment, the “Higher Education and Training Institution” ranked it fourth, whereas the “Other training providers” ranked it first.

When comparing awareness of CCFOs, both the “Formal training programmes” group and the “Other instances” group ranked it highest.

The competency, “Conceive, create something that did not exist before” received an overall lowest ranking.
When comparing qualifying institutions, this competency received third lowest ranking by the “Higher Education” group, and lowest by the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group ranked it second last and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received a ranking of second last by the “Formal training programmes”, and the lowest ranking by the “Other instances” group.

Table 35 Collect, analyse, organise and critically evaluate information: Functional competencies

CCFO statement	Collect, analyse, organise and critically evaluate information	
Competency category	Functional competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
30	Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others	1
31	Recognise varying contributing elements and concepts at hand	2
28	Systematically shape and re-shape of elements referring to sequence	3
29	Enlighten by offering clear explanations and descriptions	4
26	Handle multiple demands in confronting situations	5
27	Communicate facts, thoughts and feelings	6
32	Reflect own estimation of elements or concepts at hand	7
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V30 V31 V28 V29 V26 V27 V32	V30 V29 V28 V31 V26 V27 V32	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V30 V28 V29 V31 V27 V26 V32	V30 V31 V29 V28 V26 V27 V32	

Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V30	V30
V31	V29
V28	V31
V29	V26
V32	V28
V27	V27
V26	V32

The overall ranking of the CCFO statement, “Collect, analyse, organise and critically evaluate information” within the functional competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others
- Recognise varying contributing elements and concepts at hand
- Systematically shape and re-shape of elements referring to sequence
- Enlighten by offering clear explanations and descriptions
- Handle multiple demands in confronting situations
- Communicate facts, thoughts and feelings
- Reflect own estimation of elements or concepts at hand

All the groups ranked these competencies the same, except for the “Other instances” group that ranked the competency “Reflect own estimation of elements or concepts at hand” third lowest, whereas all the other groups ranked it lowest.

Table 36 Collect, analyse, organise and critically evaluate information: Investigative competencies

CCFO statement	Collect, analyse, organise and critically evaluate information	
Competency category	Investigative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V34	Separate important from unimportant information	1
V35	Identify obstructions preventing the reaching of goals	2
V36	Sequence information	3
V38	Order information or processes categorically	4
V37	Predict results	5
V39	Make fine distinctions	6
V40	Critique thoughts, feelings and behaviour	7
V43	Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour	8
V42	Justify the merits and applicability of thoughts, feelings and behaviour	9
V41	Estimate results and or behaviour	10
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V34 V35 V36 V38 V40 V39 V37 V43 V42 V41	V34 V35 V36 V37 V38 V39 V40 V41 V42 V43	

Comparing work environment	
Higher Education and Training institution	**Other training providers**
NIL	V34
NIL	V35
NIL	V36
NIL	V38
NIL	V37
NIL	V39
NIL	V40
NIL	V43
NIL	V42
NIL	V41
Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V34	V35
V35	V36
V36	V34
V38	V38
V37	V39
V43	V40
V40	V42
V39	V37
V41	V43
V42	V41

The overall ranking of the CCFO statement, “Collect, analyse, organise and critically evaluate information” within the investigative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Separate important from unimportant information
- Identify obstructions preventing the reaching of goals
- Sequence information
- Order information or processes categorically
- Predict results
- Make fine distinctions
- Critique thoughts, feelings and behaviour
- Assimilate/Integrate information in order to adapt or adjust thoughts, feelings and behaviour
- Justify the merits and applicability of thoughts, feelings and behaviour
- Estimate results and or behaviour

The competency, “Separate important from unimportant information” received the highest ranking.
All the comparative groups ranked this competency the highest except for “Other instances” group that ranked it second.

The competency, “Estimate results and or behaviour” received an overall lowest ranking.

When comparing qualifying institutions, this competency received the lowest ranking by the “Higher Education” group and third lowest ranking by the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group did not respond to the questionnaire and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received the second lowest ranking by the “Formal training programmes” and the lowest ranking by the “Other instances” group.

Table 37 Collect, analyse, organise and critically evaluate information: Relationship managerial competencies

CCFO statement	Collect, analyse, organise and critically evaluate information	
Competency category	Relationship managerial competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V24	Plan timeously in advance to accomplish a goal	1
V22	Reveal a result orientated approach	2
V25	Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour	3
V23	Make sound decisions despite uncertainties and pressure	4

Comparing qualifying institutions	
Higher Education	**Other training interventions**
V22 V24 V23 V25	V25 V24 V22 V23
Comparing work environment	
Higher Education and Training institution	**Other training providers**
V22 V23 V24 V25	V24 V25 V22 V23
Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V24 V22 V25 V23	V24 V25 V22 V23

The overall ranking of the CCFO statement, “Collect, analyse, organise and critically evaluate information” within the relationship managerial competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Plan timeously in advance to accomplish a goal
- Reveal a result-orientated approach
- Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour
- Make sound decisions despite uncertainties and pressure

The competency, “Plan timeously in advance to accomplish a goal” received the highest overall ranking.

When comparing qualifying institutions, both the “Higher Education” group and the “Other training interventions” groups ranked it second.

When comparing work environment, the “Higher Education and Training Institution” ranked it third, whereas the “Other training providers” ranked it first.

When comparing awareness of CCFOs, both the “Formal training programmes” group and the “Other instances” ranked it highest.

The competency, “Make sound decisions despite uncertainties and pressure” received an overall lowest ranking.

When comparing qualifying institutions, this competency received a second last ranking from the “Higher Education” group, and the lowest ranking from the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group ranked it second and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received the lowest ranking by both “Formal training programmes”, and “Other instances” groups.

Table 38 Collect, analyse, organise and critically evaluate information: Social competencies

CCFO statement	Collect, analyse, organise and critically evaluate information	
Competency category	Social competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V21	Understand diverse world views and demonstrate sensitivity to group differences	1
V23	Demonstrate a positive attitude to new procedures or technology	2
V22	Acknowledge key power relationships and strategies accurately	3
V25	Acknowledge and accept information sharing	4
V24	Recognise how feelings affect performance	5
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V23 V22 V25 V21 V24	V21 V23 V24 V25 V22	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V22 V23 V25 V24 V21	V21 V23 V25 V22 V24	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V21 V23 V22 V25 V24	V21 V23 V24 V25 V22	

The overall ranking of the CCFO statement, “Collect, analyse, organise and critically evaluate information” within the social competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Understand diverse world views and demonstrate sensitivity to group differences
- Demonstrate a positive attitude to new procedures or technology
- Acknowledge key power relationships and strategies accurately
- Acknowledge and accept information sharing
- Recognise how feelings affect performance

The competency, “Understand diverse world views and demonstrate sensitivity to group differences” received the highest overall ranking.

When comparing qualifying institutions, the “Higher Education” group ranked it second last and the “Other training interventions” groups ranked it highest.

When comparing work environment, the “Higher Education and Training Institution” ranked it lowest, whereas the “Other training providers” ranked it highest.

When comparing awareness of CCFOs, both the “Formal training programmes” group and the “Other instances” group ranked it highest.

The competency “Recognise how feelings affect performance” received an overall lowest ranking.

When comparing qualifying institutions, this competency received the lowest ranking by the “Higher Education” group, and third highest ranking by the “Other training interventions” group.
When comparing work environment, the “Higher Education and Training institution” group ranked it second last, and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received the lowest ranking by the “Formal training programmes”, and a ranking of third by the “Other instances” group.

Table 39 Collect, analyse, organise and critically evaluate information: Self-regulative competencies

CCFO statement	Collect, analyse, organise and critically evaluate information	
Competency category	Self regulative skills	
Overall ranking		
Variable	**Competencies**	**Ranking**
V23	Establishes priorities as part of system	1
V20	Explore new perspectives, continuous learning and self development	2
V21	Think clearly and stay focused under pressure	3
V19	Honour the links between feelings, thoughts and actions of self as well as others	4
V22	Admit own mistakes	5
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V23 V20 V21 V19 V22	V20 V23 V21 V19 V22	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V20 V23 V21 V22 V19	V23 V20 V21 V19 V22	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V20 V23 V21 V19 V22	V23 V20 V21 V19 V22	

The overall ranking of the CCFO statement “Collect, analyse, organise and critically evaluate information” within the self-regulative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Establishes priorities as part of system
- Explore new perspectives, continuous learning and self development
- Think clearly and stay focused under pressure
- Honour the links between feelings, thoughts and actions of self as well as others
- Admit own mistakes

The competency, “Establishes priorities as part of system” received the highest overall ranking.

When comparing qualifying institutions, the “Higher Education” group ranked it highest and the “Other training interventions” groups ranked it second.

When comparing work environment, the “Higher Education and Training Institution” ranked it second, whereas the “Other training providers” ranked it highest.

When comparing awareness of CCFOs, the “Formal training programmes” group ranked it second and the “Other instances” ranked it highest.

The competency, “Admit own mistakes” received an overall lowest ranking.

When comparing qualifying institutions, this competency received the lowest ranking by both the “Higher Education” and the “Other training interventions” groups.

When comparing work environment, the “Higher Education and Training institution” group ranked it second last, and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received the lowest ranking by both the “Formal training programmes” and the “Other instances” group.

Table 40 Collect, analyse, organise and critically evaluate information: Generative competencies

CCFO statement	Collect, analyse, organise and critically evaluate information	
Competency category	Generative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V30	Assemble information or material together into a structure	1
V26	Supply missing or implied information	2
V31	Explore fresh ideas from a variety of sources	3
V27	State a goal clearly and unambiguously	4
V25	Generate new ideas	5
V28	Conceive, create something that did not exist before	6
V29	Design, construct and execute prepared plans	7
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V28 V30 V29 V25 V27 V31 V26	V26 V30 V31 V27 V25 V28 V29	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V30 V31 V29 V28 V26 V27 V25	V30 V26 V31 V27 V25 V28 V29	

Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V30 V26 V31 V27 V28	V26 V27 V30 V31 V25
V25 V29	V28 V29

The overall ranking of the CCFO statement "Collect, analyse, organise and critically evaluate information" within the social competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Assemble information or material together into a structure
- Supply missing or implied information
- Explore fresh ideas from a variety of sources
- State a goal clearly and unambiguously
- Generate new ideas
- Conceive, create something that did not exist before
- Design, construct and execute prepared plans

The competency, "Assemble information or material together into a structure" received the highest overall ranking.

When comparing qualifying institutions, both the "Higher Education" group and the "Other training interventions" group ranked it second.

When comparing work environment, both the "Higher Education and Training Institution" group and the "Other training providers" group ranked it highest.

When comparing awareness of CCFOs, the "Formal training programmes" group ranked it highest and the "Other instances" ranked it third.

The competency, “Design, construct and execute prepared plans” received an overall lowest ranking.

When comparing qualifying institutions, this competency received a third place ranking by the “Higher Education” group, and the lowest ranking by the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group ranked it third, and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received the lowest ranking by both the “Formal training programmes” and the “Other instances” group.

Table 41 Communicate effectively using visual, mathematical and/or language in the modes of oral and/or written presentation: Functional competencies

CCFO statement	Communicate effectively using visual, mathematical and/or language in the modes of oral and/or written presentation	
Competency category	Functional competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V33	Communicate facts, thoughts and feelings	1
V35	Enlighten by offering clear explanations and descriptions	2
V34	Systematically shape and re-shape of elements referring to sequence	3
V36	Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others	4
V37	Recognise varying contributing elements and concepts at hand	5
V38	Reflect own estimation of elements or concepts at hand	6
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V33	V33	
V35	V35	
V34	V37	
V36	V38	
V37	V34	
V38	V36	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V33	V33	
V35	V35	
V36	V34	
V34	V37	
V38	V36	
V37	V38	

Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V33	V33
V35	V35
V36	V34
V34	V37
V37	V36
V38	V38

The overall ranking of the CCFO statement "Communicate effectively using visual, mathematical and/or language in the modes of oral and/or written presentation" within the functional competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Communicate facts, thoughts and feelings
- Enlighten by offering clear explanations and descriptions
- Systematically shape and re-shape of elements referring to sequence
- Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others
- Recognise varying contributing elements and concepts at hand
- Reflect own estimation of elements or concepts at hand

The competency, "Communicate facts, thoughts and feelings" received the highest overall ranking by all the respective groups.

The competency, "Reflect own estimation of elements or concepts at hand" received an overall lowest ranking.

When comparing qualifying institutions, this competency received the lowest ranking by the "Higher Education" and the second last ranking by the "Other training interventions" groups.
When comparing work environment, the "Higher Education and Training institution" group ranked it second last, and the "Other training interventions" group ranked it lowest.

When comparing awareness of CCFOs, this competency received the lowest ranking by both the “Formal training programmes” and the “Other instances” group.

Table 42 Communicate effectively using visual, mathematical and/or language in the modes of oral and/or written presentation: Investigative competencies

CCFO statement	Communicate effectively using visual, mathematical and/or language in the modes of oral and/or written presentation	
Competency category	Investigative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V44	Separate important from unimportant information	1
V45	Identify obstructions preventing the reaching of goals	2
V46	Sequence information	3
V48	Order information or processes categorically	4
V47	Predict results	5
V52	Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour	6
V50	Critique thoughts, feelings and behaviour	7
V51	Justify the merits and applicability of thoughts, feelings and behaviour	8
V49	Make fine distinctions	9
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V44	V44	
V45	V45	
V46	V46	
V48	V47	
V52	V48	
V47	V49	
V50	V50	
V51	V51	
V49	V52	

Comparing work environment	
Higher Education and Training institution	**Other training providers**
NIL	V44
NIL	V45
NIL	V46
NIL	V48
NIL	V47
NIL	V52
NIL	V50
NIL	V51
NIL	V49
Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V44	V44
V45	V45
V46	V46
V48	V47
V52	V48
V47	V50
V50	V52
V49	V51
V51	V49

The overall ranking of the CCFO statement “Communicate effectively using visual, mathematical and/or language in the modes of oral and/or written presentation” within the investigative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Separate important from unimportant information
- Identify obstructions preventing the reaching of goals
- Sequence information
- Order information or processes categorically
- Predict results
- Assimilate/Integrate information in order to adapt or adjust thoughts, feelings and behaviour
- Critique thoughts, feelings and behaviour
- Justify the merits and applicability of thoughts, feelings and behaviour
- Make fine distinctions

The competency, “Separate important from unimportant information” received the highest ranking by all the respective groups.

The competency, “Make fine distinctions” received an overall lowest ranking.

When comparing qualifying institutions, this competency received the lowest ranking by the “Higher Education” group and the fourth lowest by the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group did not respond to this questionnaire, and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received the second lowest ranking by the “Formal training programmes”, and the lowest ranking by the “Other instances” group.

Table 43 Communicate effectively using visual, mathematical and/or language in the modes of oral and/or written presentation: Relationship managerial competencies

CCFO statement	Communicate effectively using visual, mathematical and/or language in the modes of oral and/or written presentation	
Competency category	Relationship managerial competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V28	Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour	1
V27	Offer useful feedback and identify people's needs for development	2
V26	Contribute ideas in order to accomplish a common goal	3

Comparing qualifying institutions	
Higher Education	**Other training interventions**
V26	V28
V27	V27
V28	V26

Comparing work environment	
Higher Education and Training institution	**Other training providers**
V28	V28
V27	V26
V26	V27

Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V28	V28
V27	V26
V26	V27

The overall ranking of the CCFO statement “Communicate effectively using visual, mathematical and/or language in the modes of oral and/or written presentation” within the relationship managerial competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour
- Offer useful feedback and identify people's needs for development
- Contribute ideas in order to accomplish a common goal

The competency, “Assimilate/Integrate information in order to adapt or adjust thoughts, feelings and behaviour” received the highest overall ranking.

When comparing qualifying institutions, the “Higher Education” group ranked it lowest and the “Other training interventions” group ranked it highest.

When comparing work environment, both the “Higher Education and Training Institution” group and the “Other training providers” group ranked it highest.

When comparing awareness of CCFOs, both the “Formal training programmes” group and the “Other instances” group ranked it highest.

The competency, “Contribute ideas in order to accomplish a common goal” received an overall lowest ranking.

When comparing qualifying institutions, this competency received the highest ranking by the “Higher Education” group, and the lowest ranking by the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group ranked it lowest and the “Other training interventions” group ranked it second.

When comparing awareness of CCFOs, this competency received the lowest ranking by the “Formal training programmes”, and was ranked second by the “Other instances” group.

Table 44 Communicate effectively using visual, mathematical and/or language in the modes of oral and/or written presentation:

Social competencies

CCFO statement	Communicate effectively using visual, mathematical and/or language in the modes of oral and/or written presentation	
Competency category	Social competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V30	Interact effectively	1
V27	Predict responses of others to particular actions or events	2
V29	Acknowledge and accept information sharing	3
V26	Acknowledge key power relationships and strategies accurately	4
V28	Recognise how feelings affect performance	5

Comparing qualifying institutions	
Higher Education	**Other training interventions**
V30	V30
V28	V27
V29	V26
V27	V29
V26	V28

Comparing work environment	
Higher Education and Training institution	**Other training providers**
V26	V30
V30	V27
V29	V29
V27	V26
V28	V28

Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V30	V30
V27	V29
V29	V26
V28	V27
V26	V28

The overall ranking of the CCFO statement “Communicate effectively, using visual, mathematical and/or language in the modes of oral and/or written presentation” within the social competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Interact effectively
- Predict responses of others to particular actions or events
- Acknowledge and accept information sharing
- Acknowledge key power relationships and strategies accurately
- Recognise how feelings affect performance

The competency, “Interact effectively” received the highest overall ranking.

When comparing qualifying institutions, both the “Higher Education” group and the “Other training interventions” group ranked it highest.

When comparing work environment, the “Higher Education and Training Institution” ranked it second and the “Other training providers” ranked it first.

When comparing awareness of CCFOs, both the “Formal training programmes” group and the “Other instances” ranked it highest.

The competency, “Recognise how feelings affect performance” received an overall lowest ranking.

When comparing qualifying institutions, this competency received a ranking of second by the “Higher Education” group, and the lowest ranking by the “Other training interventions” group.

When comparing work environment, both the “Higher Education and Training institution” group and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received a ranking of second last by the “Formal training programmes”, and the lowest ranking by the “Other instances” group.

Table 45 Communicate effectively using visual, mathematical and/or language in the modes of oral and/or written presentation: Self-regulative competencies

CCFO statement	Communicate effectively using visual, mathematical and/or language in the modes of oral and/or written presentation	
Competency category	Self-regulative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V25	Be adaptable and aware of one's behaviour based on feedback and suggestions from others	1
V26	Learn from mistakes; analyse own performance strategies in order to improve performance	2
V24	Honour the links between feelings, thoughts and actions of self as well as others	3
V27	Admit own mistakes	4
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V24 V25 V26 V27	V26 V25 V24 V27	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V26 V25 V24 V27	V25 V24 V26 V27	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V25 V24 V26 V27	V26 V24 V25 V27	

The overall ranking of the CCFO statement "Communicate effectively using visual, mathematical and/or language in the modes of oral and/or written presentation" within the self-regulative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Be adaptable and aware of one's behaviour based on feedback and suggestions from others
- Learn from mistakes; analyse own performance strategies in order to improve performance
- Honour the links between feelings, thoughts and actions of self as well as others
- Admit own mistakes

The competency, "Be adaptable and aware of one's behaviour based on feedback and suggestions from others" received the highest overall ranking.

When comparing qualifying institutions, both the "Higher Education" group and the "Other training interventions" group ranked it second.

When comparing work environment, the "Higher Education and Training Institution" group ranked it second, and the "Other training providers" ranked it first.

When comparing awareness of CCFOs, the "Formal training programmes" group ranked it highest and the "Other instances" ranked it second last.

The competency, "Admit own mistakes" received an overall lowest ranking by all the respective groups.

Table 46 Communicate effectively using visual, mathematical and/or language in the modes of oral and/or written presentation: Generative competencies

CCFO statement	Communicate effectively using visual, mathematical and/or language in the modes of oral and/or written presentation	
Competency category	Generative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V33	State a goal clearly and unambiguously	1
V32	Supply missing or implied information	2
V35	Design, construct and execute prepared plans	3
V34	Conceive, create something that did not exist before	4
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V33	V33	
V32	V32	
V34	V35	
V35	V34	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V32	V33	
V33	V32	
V35	V35	
V34	V34	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V33	V33	
V32	V32	
V35	V35	
V34	V34	

The overall ranking of the CCFO statement “Communicate effectively, using visual, mathematical and/or language in the modes of oral and/or written presentation” within the generative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- State a goal clearly and unambiguously
- Supply missing or implied information
- Design, construct and execute prepared plans
- Conceive, create something that did not exist before

The competency, “State a goal clearly and unambiguously” received the highest overall ranking.

When comparing qualifying institutions, both the “Higher Education” group and the “Other training interventions” group ranked it highest.

When comparing work environment, the “Higher Education and Training Institution” group ranked it second, and the “Other training providers” ranked it highest.

When comparing awareness of CCFOs, both the “Formal training programmes” group and the “Other instances” group ranked it highest.

The competency, “Conceive, create something that did not exist before” received an overall lowest ranking.

When comparing qualifying institutions, this competency received a second last ranking by the “Higher Education” group, and the lowest ranking by the “Other training interventions” group.

When comparing work environment, both the “Higher Education and Training institution” group and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received the lowest ranking by both the “Formal training programmes” and the “Other instances” group.

Table 47 Use science and technology effectively and critically showing responsibility towards the environment and health of others: Functional competencies

CCFO statement	Use science and technology effectively and critically showing responsibility towards the environment and health of others	
Competency category	Functional competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V39	Combine physical and sensory skills needed to operate equipment with the understanding of scientific and technological principles	1
V40	Handle multiple demands in confronting situations	2
V42	Systematically shape and re-shape of elements referring to sequence	3
V45	Recognise varying contributing elements and concepts at hand	4
V44	Be acquainted with concept/element at hand in order to identify, distinguish an differentiate it amongst others	5
V41	Communicate facts, thoughts and feelings	6
V46	Reflect own estimation of elements or concepts at hand	7
V43	Enlighten by offering clear explanations and descriptions	8

Comparing qualifying institutions	
Higher Education	**Other training interventions**
V40	V39
V39	V42
V42	V40
V44	V45
V45	V44
V41	V46
V43	V41
V46	V43

Comparing work environment	
Higher Education and Training institution	**Other training providers**
V39	V39
V44	V40
V42	V42
V45	V45
V40	V41
V46	V44
V43	V46
V41	V43
Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V44	V40
V39	V39
V42	V42
V45	V45
V40	V41
V41	V46
V43	V44
V46	V43

The overall ranking of the CCFO statement "Use science and technology effectively and critically showing responsibility towards the environment and health of others" within the functional competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Combine physical and sensory skills needed to operate equipment with the understanding of scientific and technological principles
- Handle multiple demands in confronting situations
- Systematically shape and re-shape of elements referring to sequence
- Recognise varying contributing elements and concepts at hand
- Be acquainted with concept/element at hand in order to identify, distinguish an differentiate it amongst others
- Communicate facts, thoughts and feelings
- Reflect own estimation of elements or concepts at hand
- Enlighten by offering clear explanations and descriptions

The competency, “Combine physical and sensory skills needed to operate equipment with the understanding of scientific and technological principles” received the highest overall ranking.
When comparing qualifying institutions, the “Higher Education” group ranked it second, and the “Other training interventions” group ranked it highest.

When comparing work environment, both the “Higher Education and Training Institution” group and the “Other training providers” group ranked it highest.

When comparing awareness of CCFOs, both the “Formal training programmes” group and the “Other instances” group ranked it second.

The competency, “Enlighten by offering clear explanations and descriptions” received an overall lowest ranking.

When comparing qualifying institutions, this competency received a ranking of second last by the “Higher Education” group, and the lowest ranking by the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group ranked it second last and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received a ranking of second last by both the “Formal training programmes”, and the lowest ranking by the “Other instances” group.

Table 48 Use science and technology effectively and critically showing responsibility towards the environment and health of others: Investigative competencies

CCFO statement	Use science and technology effectively and critically showing responsibility towards the environment and health of others	
Competency category	Investigative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V54	Separate important from unimportant information	1
V55	Identify obstructions preventing the reaching of goals	2
V56	Sequence information	3
V58	Order information or processes categorically	4
V63	Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour	5
V57	Predict results	6
V53	Apply technology in a responsible manner	7
V61	Estimate results and or behaviour	8
V59	Make fine distinctions	9
V60	Critique thoughts, feelings and behaviour	10
V62	Justify the merits and applicability of thoughts, feelings and behaviour	11
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V55	V53	
V54	V54	
V56	V55	
V58	V56	
V63	V57	
V57	V58	
V61	V59	
V59	V60	
V53	V61	
V62	V62	
V60	V63	

Comparing work environment	
Higher Education and Training institution	**Other training providers**
NIL	V54
NIL	V55
NIL	V56
NIL	V58
NIL	V63
NIL	V57
NIL	V53
NIL	V61
NIL	V59
NIL	V60
NIL	V62
Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V54	V55
V55	V56
V56	V54
V58	V58
V63	V57
V53	V62
V57	V63
V59	V60
V61	V61
V60	V59
V62	V53

The overall ranking of the CCFO statement “Use science and technology effectively and critically showing responsibility towards the environment and health of others” within the investigative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Separate important from unimportant information
- Identify obstructions preventing the reaching of goals
- Sequence information
- Order information or processes categorically
- Assimilate/Integrate information in order to adapt or adjust thoughts, feelings and behaviour
- Predict results
- Apply technology in a responsible manner
- Estimate results and or behaviour
- Make fine distinctions
- Critique thoughts, feelings and behaviour
- Justify the merits and applicability of thoughts, feelings and behaviour

The competency, “Separate important from unimportant information” received the highest overall ranking.

When comparing qualifying institutions, both the “Higher Education” group and the “Other training interventions” group ranked it second.

When comparing work environment, the “Higher Education and Training Institution” group did not respond to this questionnaire, and the “Other training providers” ranked it highest.

When comparing awareness of CCFOs, the “Formal training programmes” group ranked it highest and the “Other instances” ranked it third.

The competency, “Justify the merits and applicability of thoughts, feelings and behaviour” received an overall lowest ranking.

When comparing qualifying institutions, this competency received a ranking of second last by both the “Higher Education” group and the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group did not respond to this questionnaire, and the “Other training interventions” group ranked it the lowest.

When comparing awareness of CCFOs, this competency received the lowest ranking by the “Formal training programmes”, and the sixth lowest ranking by the “Other instances” group.

Table 49 Use science and technology effectively and critically showing responsibility towards the environment and health of others: Relationship managerial competencies

CCFO statement	Use science and technology effectively and critically showing responsibility towards the environment and health of others	
Competency category	Relationship managerial competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V30	Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour	1
V29	Reveal a result orientated approach	2
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V29	V30	
V30	V29	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V29	V30	
V30	V29	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V30	V30	
V29	V29	

The overall ranking of the CCFO statement "Use science and technology effectively and critically showing responsibility towards the environment and health of others" within the relationship managerial competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Assimilate/Integrate information in order to adapt or adjust thoughts, feelings and behaviour
- Reveal a result orientated approach

The competency, "Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour" received the highest overall ranking.

When comparing qualifying institutions, the "Higher Education" group ranked it second and the "Other training interventions" group ranked it highest.

When comparing work environment, the "Higher Education and Training Institution" group ranked it second and the "Other training providers" ranked it highest.

When comparing awareness of CCFOs, both the "Formal training programmes" group and the "Other instances" ranked it highest.

The competency, "Reveal a result orientated approach" received an overall lowest ranking.

When comparing qualifying institutions, this competency received the highest ranking by the "Higher Education" group, and lowest ranking by the "Other training interventions" group.

When comparing work environment, the "Higher Education and Training institution" group ranked it highest and the "Other training interventions" group ranked it lowest.

When comparing awareness of CCFOs, this competency received lowest ranking by both the "Formal training programmes" and the "Other instances" group.

Table 50 Use science and technology effectively and critically showing responsibility towards the environment and health of others: Social competencies

CCFO statement	Use science and technology effectively and critically showing responsibility towards the environment and health of others	
Competency category	Social competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V31	Demonstrate a positive attitude to new procedures or technology	1
V32	Show sensitivity, anticipate and understand other's perspectives	2
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V31	V31	
V32	V32	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V31	V31	
V32	V32	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V31	V31	
V32	V32	

The overall ranking of the CCFO statement “Use science and technology effectively and critically showing responsibility towards the environment and health of others” within the social competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Demonstrate a positive attitude to new procedures or technology
- Show sensitivity, anticipate and understand other's perspectives

The rankings for above competencies were the same by all the respondent groups.

Table 51 Use science and technology effectively and critically showing responsibility towards the environment and health of others: Self-regulative competencies

CCFO statement	Use science and technology effectively and critically showing responsibility towards the environment and health of others	
Competency category	Self-regulative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V29	Adapt priorities to meet the varying requirements of a situation	1
V30	Think clearly and stay focused under pressure	2
V28	Pursue goals beyond requirements	3
V31	Admit own mistakes	4
Comparing qualifying institutions		
Higher Education	**Other Training interventions**	
V29	V29	
V28	V30	
V30	V31	
V31	V28	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V29	V29	
V30	V30	
V28	V28	
V31	V31	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V29	V29	
V28	V30	
V30	V31	
V31	V28	

The overall ranking of the CCFO statement “Use science and technology effectively and critically showing responsibility towards the environment and health of others” within the self-regulative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Adapt priorities to meet the varying requirements of a situation
- Think clearly and stay focused under pressure
- Pursue goals beyond requirements
- Admit own mistakes

The competency, “Adapt priorities to meet the varying requirements of a situation” received the highest ranking by all the respective groups. All the groups ranked this competency highest.

The competency, “Admit own mistakes” received an overall lowest ranking.

When comparing qualifying institutions, this competency received the lowest ranking by the “Higher Education” group, and the second lowest ranking by the “Other training interventions” group.

When comparing work environment, both the “Higher Education and Training institution” group and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received the lowest ranking by the “Formal training programmes”, and the second lowest ranking by the “Other instances” group.

Table 52 Use science and technology effectively and critically showing responsibility towards the environment and health of others: Generative competencies

CCFO statement	Use science and technology effectively and critically showing responsibility towards the environment and health of others	
Competency category	Generative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V34	Explore fresh ideas from a variety of sources	1
V37	Explore and adapt equipment as and when needed	2
V39	State a goal clearly and unambiguously	3
V36	Generate new ideas	4
V38	Supply missing or implied information	5
V42	Assemble information or material together into a structure	6
V40	Conceive, create something that did not exist before	7
V41	Design, construct and execute prepared plans	8

Comparing qualifying institutions	
Higher Education	**Other training interventions**
V34	V34
V37	V39
V36	V37
V38	V36
V39	V38
V41	V42
V42	V40
V40	V41

Comparing work environment	
Higher Education and Training institution	**Other training providers**
V34	V34
V37	V37
V42	V39
V41	V36
V39	V38
V36	V42
V38	V40
V40	V41

Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V34	V34
V37	V36
V39	V38

V36	V39
V42	V37
V38	V42
V40	V40
V41	V41

The overall ranking of the CCFO statement "Use science and technology effectively and critically showing responsibility towards the environment and health of others" within the generative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Explore fresh ideas from a variety of sources
- Explore and adapt equipment as and when needed
- State a goal clearly and unambiguously
- Generate new ideas
- Supply missing or implied information
- Assemble information or material together into a structure
- Conceive, create something that did not exist before
- Design, construct and execute prepared plans

The competency, "Explore fresh ideas from a variety of sources" received the highest ranking by all the respective groups.

The competency, "Design, construct and execute prepared plans" received an overall lowest ranking.

When comparing qualifying institutions, this competency received third lowest ranking by the "Higher Education" group and the lowest ranking by the "Other training interventions" group.
When comparing work environment, the "Higher Education and Training institution" group ranked it fourth and the "Other training interventions" group ranked it the lowest.

When comparing awareness of CCFOs, this competency received the lowest ranking by both the "Formal training programmes" and the "Other instances" group.

Table 53 Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation: Functional competencies

CCFO statement	Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation	
Competency category	Functional competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V50	Be acquainted with concept/element at hand in order to identify, distinguish an differentiate it amongst others	1
V51	Recognise varying contributing elements and concepts at hand	2
V47	Communicate facts, thoughts and feelings	3
V48	Systematically shape and re-shape of elements referring to sequence	4
V49	Enlighten by offering clear explanations and descriptions	5
V52	Reflect own estimation of elements or concepts at hand	6
Comparing qualifying institutions		
Higher Education	**Other raining interventions**	
V50	V50	
V51	V47	
V47	V49	
V48	V48	
V49	V51	
V52	V52	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V50	V50	
V51	V51	
V52	V47	
V49	V48	
V48	V49	
V47	V52	

Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V50	V51
V47	V50
V51	V48
V52	V49
V48	V47
V49	V52

The overall ranking of the CCFO statement "Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation" within the functional competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Be acquainted with concept/element at hand in order to identify, distinguish an differentiate it amongst others
- Recognise varying contributing elements and concepts at hand
- Communicate facts, thoughts and feelings
- Systematically shape and re-shape of elements referring to sequence
- Enlighten by offering clear explanations and descriptions
- Reflect own estimation of elements or concepts at hand

The competency, "Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others" received the highest ranking by all the respective groups, except by the "Other instances" group which ranked it second.

The competency, "Reflect own estimation of elements or concepts at hand" received an overall lowest ranking.

When comparing qualifying institutions, this competency received lowest ranking by both the "Higher Education" group and the "Other training interventions" group.

When comparing work environment, the "Higher Education and Training institution" group ranked it third, and the "Other training interventions" group ranked it lowest.

When comparing awareness of CCFOs, this competency received third lowest ranking by the “Formal training programmes” and lowest by the “Other instances” group.

Table 54 Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation: Investigative competencies

CCFO statement	Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation	
Competency category	Investigative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V65	Separate important from unimportant information	1
V66	Sequence information	2
V68	Order information or processes categorically	3
V64	Systematically compare alternatives	4
V72	Assimilate/ integrate information on order to adapt or adjust thoughts, feelings and behaviour	5
V67	Predict results	6
V69	Make fine distinctions	7
V70	Critique thoughts, feelings and behaviour	8
V71	Justify the merits and applicability of thoughts, feelings and behaviour	9
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V65	V64	
V68	V65	
V66	V66	
V64	V67	
V72	V68	
V69	V69	
V67	V70	
V70	V71	
V71	V72	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
NIL	V65	
NIL	V66	
NIL	V68	
NIL	V64	
NIL	V72	
NIL	V69	
NIL	V70	
NIL	V71	

Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V64	V66
V65	V65
V68	V68
V66	V70
V72	V69
V67	V64
V69	V67
V70	V71
V71	V72

The overall ranking of the CCFO statement "Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation" within the investigative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Separate important from unimportant information
- Sequence information
- Order information or processes categorically
- Systematically compare alternatives
- Assimilate/ integrate information on order to adapt or adjust thoughts, feelings and behaviour
- Predict results
- Make fine distinctions
- Critique thoughts, feelings and behaviour
- Justify the merits and applicability of thoughts, feelings and behaviour

The competency, "Separate important from unimportant information" received the highest overall ranking by all the respective groups.

When comparing qualifying institutions, the "Higher Education" group ranked it highest and the "Other training interventions" group ranked it second.

When comparing work environment, the "Higher Education and Training Institution" group did not respond to this questionnaire, and the "Other training providers" ranked it highest.

When comparing awareness of CCFOs, this competency was ranked second by both the "Formal training programmes", and the "Other instances" group.

The competency, "Justify the merits and applicability of thoughts, feelings and behaviour" received an overall lowest ranking.

When comparing qualifying institutions, this competency received the lowest ranking by the "Higher Education" group, and was ranked second last by the "Other training interventions" group.

When comparing work environment, the "Higher Education and Training institution" group did not respond to this questionnaire, and the "Other training interventions" group ranked it lowest.

When comparing awareness of CCFOs, this competency received the lowest ranking by the "Formal training programmes", and was ranked second last by the "Other instances" group.

Table 55 Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation: Relationship managerial competencies

CCFO statement	Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation	
Competency category	Relationship managerial competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V33	Plan timeously in advance to accomplish a goal	1
V32	Make sound decisions despite uncertainties and pressure	2
V31	Reveal a result orientated approach	3
V34	Offer useful feedback and identify people's needs for development	4
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V33	V33	
V32	V32	
V31	V34	
V34	V31	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V31	V33	
V33	V32	
V32	V34	
V34	V31	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V33	V32	
V32	V33	
V34	V31	
V31	V34	

The overall ranking of the CCFO statement “Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation” within the relationship managerial competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Plan timeously in advance to accomplish a goal
- Make sound decisions despite uncertainties and pressure
- Reveal a result orientated approach
- Offer useful feedback and identify people's needs for development

The competency, “Plan timeously in advance to accomplish a goal” received the highest overall ranking by all the respective groups.

When comparing qualifying institutions, both the “Higher Education” group and the “Other training interventions” group ranked it highest.

When comparing work environment, the “Higher Education and Training Institution” group ranked it second, and the “Other training providers” ranked it highest.

When comparing awareness of CCFOs, this competency was ranked highest by the “Formal training programmes”, and ranked second by the “Other instances” group.

The competency, “Offer useful feedback and identify people's needs for development” received an overall lowest ranking.

When comparing qualifying institutions, this competency received the lowest ranking by the “Higher Education” group and second lowest by the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group ranked it lowest, and the “Other training interventions” group ranked it second lowest.

When comparing awareness of CCFOs, this competency received the ranking of second last by the “Formal training programmes”, and the lowest ranking by the “Other instances” group.

Table 56 Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation: Social competencies

CCFO statement	Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation	
Competency category	Social competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V33	Understand diverse world views and demonstrate sensitivity to group differences	1
V34	Acknowledge key power relationships and strategies accurately	2
V35	Acknowledge and accept information sharing	3
V36	Show sensitivity, anticipate and understand other's perspectives	4
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V33	V33	
V34	V34	
V35	V35	
V36	V36	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V34	V33	
V33	V34	
V36	V35	
V35	V36	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V33	V33	
V34	V35	
V35	V34	
V36	V36	

The overall ranking of the CCFO statement “Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation” within the social competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Understand diverse world views and demonstrate sensitivity to group differences
- Acknowledge key power relationships and strategies accurately
- Acknowledge and accept information sharing
- Show sensitivity, anticipate and understand other's perspectives

The competency, “Separate important from unimportant information” received the highest overall ranking by all the respective groups.

All the groups ranked this competency the same except for “Higher Education” group which ranked it second.

The competency “Justify the merits and applicability of thoughts, feelings and behaviour” received an overall lowest ranking.

All the groups ranked this competency the lowest, except for “Higher Education and Training institution” that ranked it second last.

Table 57 Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation: Self-regulative competencies

CCFO statement	Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation	
Competency category	Self-regulative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V33	Establishes priorities as part of system	1
V32	Learn from mistakes; analyse own performance strategies in order to improve performance	2
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V33	V33	
V32	V32	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V33	V33	
V32	V32	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V33	V33	
V32	V32	

The overall ranking of the CCFO statement “Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation” within the self-regulative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Establishes priorities as part of system
- Learn from mistakes; analyse own performance strategies in order to improve performance

The competency, “Establishes priorities as part of system” received the highest overall ranking by all the respective groups.

The competency, “Learn from mistakes; analyse own performance strategies in order to improve performance” received an overall lowest ranking.

All the groups ranked this competency the same.

Table 58 Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation: Generative competencies

CCFO statement	Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation	
Competency category	Generative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V48	Assemble information or material together into a structure	1
V45	State a goal clearly and unambiguously	2
V46	Conceive, create something that did not exist before	3
V44	Supply missing or implied information	4
V47	Design, construct and execute prepared plans	5

Comparing qualifying institutions	
Higher Education	**Other training interventions**
V46	V48
V48	V45
V45	V44
V47	V46
V44	V47
Comparing work environment	
Higher Education and Training institution	**Other training providers**
V48	V48
V47	V45
V46	V46
V45	V44
V44	V47
Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V48	V45
V45	V44
V46	V48
V44	V46
V47	V47

The overall ranking of the CCFO statement “Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation” within the generative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Assemble information or material together into a structure
- State a goal clearly and unambiguously
- Conceive, create something that did not exist before
- Supply missing or implied information
- Design, construct and execute prepared plans

The competency, “Assemble information or material together into a structure” received the highest overall ranking by all the respective groups.

When comparing qualifying institutions, the “Higher Education” group ranked it second, and the “Other training interventions” group ranked it highest.

When comparing work environment, both the “Higher Education and Training Institution” group and the “Other training providers” ranked it highest.

When comparing awareness of CCFOs, the “Formal training programmes” group ranked it highest and the “Other instances” group ranked it third.

The competency, “Design, construct and execute prepared plans” received an overall lowest ranking.

When comparing qualifying institutions, this competency received a ranking of second last by the “Higher Education” group, and the lowest ranking by the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group ranked it second, and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received the lowest ranking by both the “Formal training programmes” and the “Other instances” group.

Table 59 Reflect on and explore a variety of strategies to learn more effectively: Functional competencies

CCFO statement	Reflect on and explore a variety of strategies to learn more effectively	
Competency category	Functional competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V56	Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others	1
V54	Systematically shape and re-shape of elements referring to sequence	2
V57	Recognise varying contributing elements and concepts at hand	3
V55	Enlighten by offering clear explanations and descriptions	4
V58	Reflect own estimation of elements or concepts at hand	5
V53	Communicate facts, thoughts and feelings	6

Comparing qualifying institutions	
Higher Education	**Other training interventions**
V56	V56
V57	V55
V54	V54
V58	V57
V55	V58
V53	V53

Comparing work environment	
Higher Education and Training institution	**Other training providers**
V58	V56
V57	V54
V54	V57
V55	V55
V56	V53
V53	V58

Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V55	V54
V56	V56
V53	V57
V57	V58
V58	V55
V54	V53

The overall ranking of the CCFO statement "Reflect on and explore a variety of strategies to learn more effectively" within the generative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others
- Systematically shape and re-shape of elements referring to sequence
- Recognise varying contributing elements and concepts at hand
- Enlighten by offering clear explanations and descriptions
- Reflect own estimation of elements or concepts at hand
- Communicate facts, thoughts and feelings

The competency, "Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others" received the highest overall ranking by all the respective groups.

When comparing qualifying institutions, both the "Higher Education" group and the "Other training interventions" group ranked it highest.

When comparing work environment, the "Higher Education and Training Institution" group ranked it second last, and the "Other training providers" ranked it highest.

When comparing awareness of CCFOs, both the "Formal training programmes" group and the "Other instances" group ranked it second.

The competency, "Communicate facts, thoughts and feelings" received an overall lowest ranking.

When comparing qualifying institutions, this competency received the lowest ranking by both the "Higher Education" group and the "Other training interventions" group.

When comparing work environment, the "Higher Education and Training institution" group ranked it lowest, and the "Other training interventions" group ranked it second last.

When comparing awareness of CCFOs, this competency was ranked third by the “Formal training programmes”, and ranked the lowest by the “Other instances” group.

Table 60 Reflect on and explore a variety of strategies to learn more effectively: Investigative competencies

CCFO statement	Reflect on and explore a variety of strategies to learn more effectively
Competency category	Investigative competencies

Overall ranking		
Variable	**Competencies**	**Ranking**
V74	Identify obstructions preventing the reaching of goals	1
V75	Sequence information	2
V77	Order information or processes categorically	3
V73	Systematically compare alternatives	4
V76	Predict results	5
V78	Make fine distinctions	6
V79	Critique thoughts, feelings and behaviour	7
V81	Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour	8
V80	Justify the merits and applicability of thoughts, feelings and behaviour	9

Comparing qualifying institutions	
Higher Education	**Other training interventions**
V74	V73
V75	V74
V77	V75
V73	V76
V79	V77
V76	V78
V78	V79
V81	V80
V80	V81

Comparing work environment	
Higher Education and Training institution	**Other training providers**
NIL	V74
NIL	V75
NIL	V77
NIL	V73
NIL	V76
NIL	V78
NIL	V78
NIL	V81
NIL	V80

Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V74	V74
V73	V75
V75	V77
V77	V79
V78	V76
V81	V78
V76	V80
V79	V73
V80	V81

The overall ranking of the CCFO statement “Reflect on and explore a variety of strategies to learn more effectively” within the investigative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Identify obstructions preventing the reaching of goals
- Sequence information
- Order information or processes categorically
- Systematically compare alternatives
- Predict results
- Make fine distinctions
- Critique thoughts, feelings and behaviour
- Assimilate/Integrate information in order to adapt or adjust thoughts, feelings and behaviour
- Justify the merits and applicability of thoughts, feelings and behaviour

The competency, “Identify obstructions preventing the reaching of goals” received the highest overall ranking by all the respective groups.

All the groups ranked this competency the same, except for the “Other training interventions” group that ranked it second.

The group “Higher Education and Training institution” did not respond to this questionnaire.

The competency, “Justify the merits and applicability of thoughts, feelings and behaviour” received an overall lowest ranking.

When comparing qualifying institutions, this competency received the lowest ranking by the “Higher Education” group, and a ranking of second last by the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group did not respond to this questionnaire, and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received lowest ranking by the “Formal training programmes” group, and was ranked the third lowest by the “Other instances” group.

Table 61 Reflect on and explore a variety of strategies to learn more effectively: Relationship managerial competencies

CCFO statement	Reflect on and explore a variety of strategies to learn more effectively	
Competency category	Relationship managerial competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
36	Make sound decisions despite uncertainties and pressure	1
35	Reveal a result orientated approach	2
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V36	V36	
V35	V35	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V35	V36	
V36	V35	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V36	V36	
V35	V35	

The overall ranking of the CCFO statement “Reflect on and explore a variety of strategies to learn more effectively” within the relationship managerial competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Make sound decisions despite uncertainties and pressure
- Reveal a result orientated approach

The competency, “Make sound decisions despite uncertainties and pressure” received the highest overall ranking by all the respective groups.

All the groups ranked this competency the same except the “Higher Education and Training institution”, which ranked it second.

The competency, “Reveal a result orientated approach” received an overall lowest ranking.

All the groups ranked this competency the same except the “Higher Education and Training institution” that ranked it highest.

Table 62 Reflect on and explore a variety of strategies to learn more effectively: Social competencies

CCFO statement	Reflect on and explore a variety of strategies to learn more effectively	
Competency category	Social competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V37	Demonstrate a positive attitude to new procedures or technology	1
V38	Identify bias or stereotypes	2
V39	Recognise how feelings affect performance	3
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V37	V37	
V38	V38	
V39	V39	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V37	V37	
V39	V38	
V38	V39	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V37	V37	
V38	V39	
V39	V38	

The overall ranking of the CCFO statement “Reflect on and explore a variety of strategies to learn more effectively” within the social competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Demonstrate a positive attitude to new procedures or technology
- Identify bias or stereotypes
- Recognise how feelings affect performance

The competency, “Demonstrate a positive attitude to new procedures or technology” received the highest overall ranking by all the respective groups.

The competency, “Recognise how feelings affect performance” received an overall lowest ranking.

When comparing qualifying institutions, this competency received the lowest ranking by both the “Higher Education” group and the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group ranked it second, and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received the lowest ranking by the “Formal training programmes”, and was ranked second by the “Other instances” group.

Table 63 Reflect on and explore a variety of strategies to learn more effectively: Self-regulative competencies

CCFO statement	Reflect on and explore a variety of strategies to learn more effectively	
Competency category	Self-regulative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V36	Explore new perspectives, continuous learning and self development	1
V38	Learn from mistakes; analyse own performance strategies in order to improve performance	2
V37	Be adaptable and aware of one's behaviour based on feedback and suggestions from others	3
V35	Express a guiding awareness of values and goals	4
V34	Honour the links between feelings, thoughts and actions of self as well as others	5
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V36	V36	
V38	V37	
V35	V38	
V37	V35	
V34	V34	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V36	V36	
V35	V38	
V38	V37	
V37	V35	
V34	V34	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V36	V36	
V38	V38	
V35	V37	
V37	V35	
V34	V34	

The overall ranking of the CCFO statement “Reflect on and explore a variety of strategies to learn more effectively” within the self-regulative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Explore new perspectives, continuous learning and self development
- Learn from mistakes; analyse own performance strategies in order to improve performance
- Be adaptable and aware of one's behaviour based on feedback and suggestions from others
- Express a guiding awareness of values and goals
- Honour the links between feelings, thoughts and actions of self as well as others

The competency, “Explore new perspectives, continuous learning and self development” received the highest overall ranking by all the respective groups.

The competency, “Honour the links between feelings, thoughts and actions of self as well as others” received an overall lowest ranking.

All the groups’ rankings were the same.

Table 64 Reflect on and explore a variety of strategies to learn more effectively: Generative competencies

CCFO statement	Reflect on and explore a variety of strategies to learn more effectively	
Competency category	Generative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V50	State a goal clearly and unambiguously	1
V49	Supply missing or implied information	2
Comparing qualifying institutions		
Higher Education	**Other Training interventions**	
V50	V50	
V49	V49	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V50	V50	
V49	V49	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V50	V50	
V49	V49	

The overall ranking of the CCFO statement “Reflect on and explore a variety of strategies to learn more effectively” within the generative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- State a goal clearly and unambiguously
- Supply missing or implied information

The competency, “Assemble information or material together into a structure” received the highest overall ranking by all the respective groups.

The competency, “Design, construct and execute prepared plans” received an overall lowest ranking.

The respective group’s rankings were all the same.

Table 65 Participate as responsible citizens in the life of local, national and global communities: Functional competencies

CCFO statement	Participate as responsible citizens in the life of local, national and global communities	
Competency category	Functional competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
59	Communicate facts, thoughts and feelings	1
63	Recognise varying contributing elements and concepts at hand	2
61	Enlighten by offering clear explanations and descriptions	3
62	Be acquainted with concept/element at hand in order to identify, distinguish an differentiate it amongst others	4
60	Systematically shape and re-shape of elements referring to sequence	5
64	Reflect own estimation of elements or concepts at hand	6

Comparing qualifying institutions	
Higher Education	**Other training interventions**
V59	V63
V63	V59
V61	V60
V62	V61
V60	V62
V64	V64
Comparing work environment	
Higher Education and Training institution	**Other training providers**
V63	V59
V59	V63
V62	V61
V60	V62
V61	V60
V64	V64
Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V63	V59
V59	V63
V61	V61
V62	V62
V60	V60
V64	V64

The overall ranking of the CCFO statement “Participate as responsible citizens in the life of local, national and global communities” within the functional competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Communicate facts, thoughts and feelings
- Recognise varying contributing elements and concepts at hand
- Enlighten by offering clear explanations and descriptions
- Be acquainted with concept/element at hand in order to identify, distinguish an differentiate it amongst others
- Systematically shape and re-shape of elements referring to sequence
- Reflect own estimation of elements or concepts at hand

The competency, “Communicate facts, thoughts and feelings” received the highest overall ranking by all the respective groups.

When comparing qualifying institutions the “Higher Education” group ranked it highest and the “Other training interventions” group ranked it second.

When comparing work environment, the “Higher Education and Training Institution” group ranked it second, and the “Other training providers” ranked it highest.

When comparing awareness of CCFOs, the “Formal training programmes” group ranked it second, and the “Other instances” group ranked it highest.

The competency, “Reflect own estimation of elements or concepts at hand” received an overall lowest ranking, and was ranked accordingly by all the respective groups.

Table 66 Participate as responsible citizens in the life of local, national and global communities: Investigative competencies

CCFO statement	Participate as responsible citizens in the life of local, national and global communities	
Competency category	Investigative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V82	Separate important from unimportant information	1
V83	Identify obstructions preventing the reaching of goals	2
V84	Order information or processes categorically	3
V86	Justify the merits and applicability of thoughts, feelings and behaviour	4
V85	Make fine distinctions	5
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V82	V82	
V83	V83	
V84	V84	
V86	V85	
V85	V86	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
NIL	V82	
NIL	V83	
NIL	V84	
NIL	V86	
NIL	V85	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V82	V83	
V83	V82	
V84	V84	
V86	V86	
V85	V85	

The overall ranking of the CCFO statement “Participate as responsible citizens in the life of local, national and global communities” within the investigative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Separate important from unimportant information
- Identify obstructions preventing the reaching of goals
- Order information or processes categorically
- Justify the merits and applicability of thoughts, feelings and behaviour
- Make fine distinctions

The competency, “Separate important from unimportant information” received the highest overall ranking by all the respective groups.

All the respective groups ranked this competency the same except for the “Other instances” group, which ranked it second.

The competency, “Make fine distinctions” received an overall lowest ranking.

All the groups ranked this competency the lowest except for “Other training interventions”, which ranked it second last.

Table 67 Participate as responsible citizens in the life of local, national and global communities: Relationship managerial competencies

CCFO statement	Participate as responsible citizens in the life of local, national and global communities	
Competency category	Relationship managerial competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V38	Identify and nurture opportunities for collaboration	1
V37	Cultivate and maintain extensive informal networks	2
V39	Offer useful feedback and identify people's needs for development	3
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V38	V38	
V37	V37	
V39	V39	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V38	V38	
V37	V37	
V39	V39	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V38	V38	
V37	V37	
V39	V39	

The overall ranking of the CCFO statement “Participate as responsible citizens in the life of local, national and global communities” within the relationship managerial competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Identify and nurture opportunities for collaboration
- Cultivate and maintain extensive informal networks
- Offer useful feedback and identify people's needs for development

The competency, “Identify and nurture opportunities for collaboration” received the highest overall ranking by all the respective groups.

The competency, “Offer useful feedback and identify people's needs for development” received an overall lowest ranking.

All the groups ranked this competency accordingly.

Table 68 Participate as responsible citizens in the life of local, national and global communities: Social competencies

CCFO statement	Participate as responsible citizens in the life of local, national and global communities
Competency category	Social competencies

Overall ranking		
Variable	**Competencies**	**Ranking**
V40	Understand diverse world views and demonstrate sensitivity to group differences	1
V41	Acknowledge key power relationships and strategies accurately	2
V47	Interact effectively	3
V46	Seek and fulfil own role in a group situation	4
V42	Predict responses of others to particular actions or events	5
V48	Show sensitivity, anticipate and understand other's perspectives	6
V44	Recognise how feelings affect performance	7
V45	Acknowledge and accept information sharing	8
V43	Identify bias or stereotypes	9

Comparing qualifying institutions	
Higher Education	**Other training interventions**
V46	V40
V48	V41
V47	V42
V40	V44
V42	V47
V41	V45
V43	V46
V45	V48
V44	V43

Comparing work environment	
Higher Education and Training institution	**Other training providers**
V46	V40
V40	V41
V42	V47
V44	V46
V45	V48
V48	V42
V47	V44
V43	V45
V41	V43

Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V40	V47
V41	V44
V47	V41
V48	V45
V42	V40
V46	V46
V43	V42
V45	V48
V44	V43

The overall ranking of the CCFO statement “Participate as responsible citizens in the life of local, national and global communities” within the social competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Understand diverse world views and demonstrate sensitivity to group differences
- Acknowledge key power relationships and strategies accurately
- Interact effectively
- Seek and fulfil own role in a group situation
- Predict responses of others to particular actions or events
- Show sensitivity, anticipate and understand other's perspectives
- Recognise how feelings affect performance
- Acknowledge and accept information sharing
- Identify bias or stereotypes

The competency, “Understand diverse world views and demonstrate sensitivity to group differences” received the highest overall ranking by all the respective groups.

When comparing qualifying institutions, the “Higher Education” group ranked it fourth and the “Other training interventions” group ranked it highest.

When comparing work environment, the “Higher Education and Training Institution” group ranked it second, and the “Other training providers” ranked it highest.

When comparing awareness of CCFOs, the “Formal training programmes” group ranked it highest and the “Other instances” group ranked it fifth.

The competency, “Identify bias or stereotypes” received an overall lowest ranking.

When comparing qualifying institutions, this competency received the third lowest ranking by the “Higher Education” group and the lowest by the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group ranked it second last and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received the third lowest ranking by the “Formal training programmes” group and the lowest ranking by the “Other instances” group.

Table 69 Participate as responsible citizens in the life of local, national and global communities: Self-regulative competencies

CCFO statement	Participate as responsible citizens in the life of local, national and global communities	
Competency category	Self-regulative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V40	Honour the links between feelings, thoughts and actions of self as well as others	1
V41	Express a guiding awareness of values and goals	2
V39	Pursue goals beyond requirements	3
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V41	V40	
V39	V41	
V40	V39	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V39	V40	
V41	V41	
V40	V39	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V41	V40	
V39	V41	
V40	V39	

The overall ranking of the CCFO statement “Participate as responsible citizens in the life of local, national and global communities” within the self-regulative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Honour the links between feelings, thoughts and actions of self as well as others
- Express a guiding awareness of values and goals
- Pursue goals beyond requirements

The competency, “Honour the links between feelings, thoughts and actions of self as well as others” received the highest overall ranking by all the respective groups.

When comparing qualifying institutions, the “Higher Education” group ranked it lowest and the “Other training interventions” group ranked it highest.

When comparing work environment, the “Higher Education and Training Institution” group ranked it lowest and the “Other training providers” ranked it highest.

When comparing awareness of CCFOs, the “Formal training programmes” group ranked it lowest and the “Other instances” group ranked it highest.

The competency, “Pursue goals beyond requirements” received an overall lowest ranking.

When comparing qualifying institutions, the “Higher Education” group ranked this competency second, and the “Other training interventions” group ranked it lowest.

When comparing work environment, the “Higher Education and Training institution” group ranked it highest, and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received the second lowest ranking by the “Formal training programmes” group, and the lowest ranking by the “Other instances” group.

Table 70 Participate as responsible citizens in the life of local, national and global communities: Generative competencies

CCFO statement	Participate as responsible citizens in the life of local, national and global communities	
Competency category	Generative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
52	Explore fresh ideas from a variety of sources	1
51	Supply missing or implied information	2
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V52	V52	
V51	V51	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V52	V52	
V51	V51	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V52	V52	
V51	V51	

The overall ranking of the CCFO statement “Participate as responsible citizens in the life of local, national and global communities” within the generative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Explore fresh ideas from a variety of sources
- Supply missing or implied information

The competency, “Identify obstructions preventing the reaching of goals” received the highest overall ranking by all the respective groups.

The competency, “Justify the merits and applicability of thoughts, feelings and behaviour” received an overall lowest ranking.

All the groups ranked these competencies accordingly.

Table 71 Be culturally and aesthetically sensitive across a range of social context: Functional competencies

CCFO statement	Be culturally and aesthetically sensitive across a range of social contexts
Competency category	Functional competencies

Overall ranking		
Variable	**Competencies**	**Ranking**
V69	Recognise varying contributing elements and concepts at hand	1
V68	Be acquainted with concept/element at hand in order to identify, distinguish an differentiate it amongst others	2
V65	Communicate facts, thoughts and feelings	3
V67	Enlighten by offering clear explanations and descriptions	4
V66	Systematically shape and re-shape of elements referring to sequence	5
V70	Reflect own estimation of elements or concepts at hand	6

Comparing qualifying institutions	
Higher Education	**Other Training interventions**
V68	V69
V69	V67
V65	V68
V67	V66
V66	V65
V70	V70

Comparing work environment	
Higher Education and Training institution	**Other training providers**
V68	V69
V69	V68
V66	V65
V67	V67
V65	V66
V70	V70

Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V69	V69
V68	V68
V67	V65
V70	V66
V65	V67
V66	V70

The overall ranking of the CCFO statement "Be culturally and aesthetically sensitive across a range of social contexts" within the functional competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Recognise varying contributing elements and concepts at hand
- Be acquainted with concept/element at hand in order to identify, distinguish an differentiate it amongst others
- Communicate facts, thoughts and feelings
- Enlighten by offering clear explanations and descriptions
- Systematically shape and re-shape of elements referring to sequence
- Reflect own estimation of elements or concepts at hand

The competency, "Recognise varying contributing elements and concepts at hand" received the highest overall ranking by all the respective groups.

When comparing qualifying institutions, the "Higher Education" group ranked it second, and the "Other training interventions" group ranked it highest.

When comparing work environment, the "Higher Education and Training Institution" group ranked it second, and the "Other training providers" ranked it highest.

When comparing awareness of CCFOs, both the "Formal training programmes" group and the "Other instances" group ranked it highest.

The competency, "Reflect own estimation of elements or concepts at hand" received an overall lowest ranking.

All the respective groups ranked this competency lowest, except the "Formal training programmes" group, which ranked it fourth.

Table 72 Be culturally and aesthetically sensitive across a range of social context: Investigative competencies

CCFO statement	Be culturally and aesthetically sensitive across a range of social contexts	
Competency category	Investigative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V87	Separate important from unimportant information	1
V88	Identify obstructions preventing the reaching of goals	2
V79	Sequence information	3
V93	Critique thoughts, feelings and behaviour	4
V95	Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour	5
V91	Order information or processes categorically	6
V94	Justify the merits and applicability of thoughts, feelings and behaviour	7
V90	Predict results	8
V92	Make fine distinctions	9

Comparing qualifying institutions	
Higher Education	**Other training interventions**
V87	V87
V88	V88
V95	V89
V93	V90
V89	V91
V94	V92
V91	V93
V90	V94
V92	V95

Comparing work environment	
Higher Education and Training institution	**Other training providers**
NIL	V87
NIL	V88
NIL	V89
NIL	V93
NIL	V95
NIL	V91
NIL	V94
NIL	V90
NIL	V92

Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V87	V87
V88	V88
V93	V89
V95	V91
V94	V90
V89	V93
V90	V95
V91	V94
V92	V92

The overall ranking of the CCFO statement "Be culturally and aesthetically sensitive across a range of social contexts" within the investigative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Separate important from unimportant information
- Identify obstructions preventing the reaching of goals
- Sequence information
- Critique thoughts, feelings and behaviour
- Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour
- Order information or processes categorically
- Justify the merits and applicability of thoughts, feelings and behaviour
- Predict results
- Make fine distinctions

The competency, "Separate important from unimportant information" received the highest overall ranking by all the respective groups.

The competency, "Make fine distinctions" received an overall lowest ranking by all the respective groups, except for the "Other training interventions" group that ranked it sixth.

Table 73 Be culturally and aesthetically sensitive across a range of social context: Relationship managerial competencies

CCFO statement	Be culturally and aesthetically sensitive across a range of social contexts	
Competency category	Relationship managerial competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V40	Cultivate and maintain extensive informal networks	1
V41	Contribute ideas in order to accomplish a common goal	2
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V40	V40	
V41	V41	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V40	V40	
V41	V41	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V40	V41	
V41	V40	

The overall ranking of the CCFO statement “Be culturally and aesthetically sensitive across a range of social contexts” within the relationship managerial competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Cultivate and maintain extensive informal networks
- Contribute ideas in order to accomplish a common goal

The competency, “Cultivate and maintain extensive informal networks” received the highest overall ranking by all the respective groups, except the “Other instances” group, which ranked it the lowest.

The competency, “Contribute ideas in order to accomplish a common goal” received an overall lowest ranking by the respective groups, except the “Other instances” group, which ranked it highest.

Table 74 Be culturally and aesthetically sensitive across a range of social context: Social competencies

CCFO statement	Be culturally and aesthetically sensitive across a range of social contexts	
Competency category	Social competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V49	Understand diverse worldviews and demonstrate sensitivity to group differences	1
V52	Show sensitivity, anticipate and understand other's perspectives	2
V50	Acknowledge key power relationships and strategies accurately	3
V51	Predict responses of others to particular actions or events	4
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V49	V49	
V52	V52	
V50	V50	
V51	V51	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V49	V49	
V52	V52	
V51	V50	
V50	V51	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V49	V49	
V52	V52	
V50	V51	
V51	V50	

The overall ranking of the CCFO statement “Be culturally and aesthetically sensitive across a range of social contexts” within the social competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Understand diverse worldviews and demonstrate sensitivity to group differences
- Show sensitivity, anticipate and understand other's perspectives
- Acknowledge key power relationships and strategies accurately
- Predict responses of others to particular actions or events

The competency, “Understand diverse worldviews and demonstrate sensitivity to group differences” received the highest overall ranking by all the respective groups.

The competency, “Identify bias or stereotypes” received an overall lowest ranking.

When comparing qualifying institutions, this competency received the lowest ranking by both the “Higher Education” group and the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group ranked it third, and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received the lowest ranking by the “Formal training programmes” group, and the second lowest ranking by the “Other instances” group.

Table 75 Be culturally and aesthetically sensitive across a range of social context: Self-regulative competencies

CCFO statement	Be culturally and aesthetically sensitive across a range of social contexts	
Competency category	Self-regulative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V42	Express a guiding awareness of values and goals	1
V44	Be adaptable and aware of one's behaviour based on feedback and suggestions from others	2
V43	Explore new perspectives, continuous learning and self development	3
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V42	V42	
V44	V44	
V43	V43	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V43	V42	
V44	V44	
V42	V43	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V42	V42	
V43	V44	
V44	V43	

The overall ranking of the CCFO statement “Be culturally and aesthetically sensitive across a range of social contexts” within the social competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Express a guiding awareness of values and goals
- Be adaptable and aware of one's behaviour based on feedback and suggestions from others
- Explore new perspectives, continuous learning and self development

The competency, “Express a guiding awareness of values and goals” received the highest overall ranking by all the respective groups, except the “Higher Education and Training institution” group that ranked is lowest.

The competency, “Explore new perspectives, continuous learning and self development” received an overall lowest ranking.

When comparing qualifying institutions, this competency received the lowest ranking by both the “Higher Education” group and “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group ranked it highest, and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, the “Formal training programmes” group ranked this competency second, and the “Other instances” group ranked it lowest.

Table 76 Be culturally and aesthetically sensitive across a range of social context: Generative competencies

CCFO statement	Be culturally and aesthetically sensitive across a range of social contexts	
Competency category	Generative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V54	Explore fresh ideas from a variety of sources	1
V53	Supply missing or implied information	2
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V54	V54	
V53	V53	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V54	V54	
V53	V53	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V54	V53	
V53	V54	

The overall ranking of the CCFO statement “Be culturally and aesthetically sensitive across a range of social contexts” within the generative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Explore fresh ideas from a variety of sources
- Supply missing or implied information

The competency, “Explore fresh ideas from a variety of sources” received the highest overall ranking by all the respective groups, except the “Other instances” group which ranked it second.

The competency, “Supply missing or implied information” received an overall lowest ranking by the respective groups, except for the “Other training” group which ranked it first.

Table 77 Explore education and career opportunities:

Functional competencies

CCFO statement	Explore education and career opportunities	
Competency Category	Functional competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V75	Reflect own estimation of elements or concepts at hand	1
V74	Recognise varying contributing elements and concepts at hand	2
V73	Enlighten by offering clear explanations and descriptions	3
V71	Communicate facts, thoughts and feelings	4
V72	Systematically shape and re-shape of elements referring to sequence	5
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V74	V75	
V71	V73	
V75	V74	
V72	V72	
V73	V71	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V74	V75	
V72	V73	
V73	V74	
V71	V71	
V75	V72	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V75	V74	
V74	V75	
V72	V73	
V73	V71	
V71	V72	

The overall ranking of the CCFO statement “Explore education and career opportunities” within the functional competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Reflect own estimation of elements or concepts at hand
- Recognise varying contributing elements and concepts at hand
- Enlighten by offering clear explanations and descriptions
- Communicate facts, thoughts and feelings
- Systematically shape and re-shape of elements referring to sequence

The competency, “Reflect own estimation of elements or concepts at hand” received the highest overall ranking by all the respective groups.

When comparing qualifying institutions, the “Higher Education” group ranked it third, and the “Other training interventions” group ranked it highest.

When comparing work environment, the “Higher Education and Training Institution” group ranked it lowest, and the “Other training providers” group ranked it highest.

When comparing awareness of CCFOs, the “Formal training programmes” group ranked it highest and the “Other instances” group ranked it second.

The competency, “Systematically shape and re-shape of elements referring to sequence” received an overall lowest ranking.

When comparing qualifying institutions, this competency received a ranking of second last by both the “Higher Education” group and the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group ranked it second, and the “Other training interventions” group ranked it the lowest.

When comparing awareness of CCFOs, this competency received a ranking of third by the “Formal training programmes” group, and the lowest ranking by the “Other instances” group.

Table 78 Explore education and career opportunities: Investigative competencies

CCFO statement	Explore education and career opportunities	
Competency category	Investigative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V97	Identify obstructions preventing the reaching of goals	1
V96	Separate important from unimportant information	2
V98	Sequence information	3
V102	Critique thoughts, feelings and behaviour	4
V104	Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour	5
V100	Order information or processes categorically	6
V103	Justify the merits and applicability of thoughts, feelings and behaviour	7
V99	Predict results	8
V101	Make fine distinctions	9
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V97	V96	
V96	V97	
V98	V98	
V102	V99	
V104	V100	
V103	V101	
V100	V102	
V99	V103	
V101	V104	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
NIL	V97	
NIL	V96	
NIL	V98	
NIL	V102	
NIL	V104	
NIL	V100	
NIL	V103	
NIL	V99	
NIL	V101	

Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V97	V97
V96	V96
V102	V98
V98	V100
V104	V102
V99	V104
V103	V103
V100	V99
V101	V101

The overall ranking of the CCFO statement "Explore education and career opportunities" within the investigative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Identify obstructions preventing the reaching of goals
- Separate important from unimportant information
- Sequence information
- Critique thoughts, feelings and behaviour
- Assimilate/Integrate information in order to adapt or adjust thoughts, feelings and behaviour
- Order information or processes categorically
- Justify the merits and applicability of thoughts, feelings and behaviour
- Predict results
- Make fine distinctions

The competency, "Identify obstructions preventing the reaching of goals" received the highest overall ranking by all the respective groups, except the "Other training interventions" group which ranked it second.

The "Higher Education and Training institution" group did not respond to this questionnaire.

The competency, "Make fine distinctions" received an overall lowest ranking by all the respective groups, except the "Other training interventions" group which ranked it sixth.

The “Higher Education and Training institution” group did not respond to this questionnaire.

Table 79 Explore education and career opportunities:

Relationship managerial competencies

CCFO statement	Explore education and career opportunities	
Competency category	Relationship managerial competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V44	Initiate and / or manage change	1
V43	Make sound decisions despite uncertainties and pressure	2
V42	Reveal a result orientated approach	3
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V43	V44	
V44	V43	
V42	V42	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V42	V44	
V43	V43	
V44	V42	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V44	V44	
V43	V42	
V42	V43	

The overall ranking of the CCFO statement “Explore education and career opportunities” within the relationship managerial competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Initiate and / or manage change
- Make sound decisions despite uncertainties and pressure
- Reveal a result orientated approach

The competency, “Initiate and/or manage change” received the highest overall ranking by all the respective groups.

When comparing qualifying institutions, the “Higher Education” group ranked it second, and the “Other training interventions” group ranked it highest.

When comparing work environment, the “Higher Education and Training Institution” group ranked it lowest and the “Other training providers” ranked it highest.

When comparing awareness of CCFOs, both the “Formal training programmes” group and the “Other instances” group ranked it highest.

The competency, “Reveal a result orientated approach” received an overall lowest ranking.

When comparing qualifying institutions, this competency received the lowest ranking by both the “Higher Education” group and the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group ranked it highest, and the “Other training interventions” group ranked it lowest.
When comparing awareness of CCFOs, this competency received the lowest ranking by the “Formal training programmes” group, and a ranking of second by the “Other instances” group.

Table 80 Explore education and career opportunities:

Social competencies

CCFO statement	Explore education and career opportunities	
Competency category	Social competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V56	Interact effectively	1
V54	Demonstrate a positive attitude to new procedures or technology	2
V55	Acknowledge and accept information sharing	3
V53	Predict responses of others to particular actions or events	4
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V56	V56	
V55	V54	
V53	V55	
V54	V53	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V56	V56	
V54	V55	
V53	V54	
V55	V53	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V56	V56	
V54	V55	
V53	V54	
V55	V53	

The overall ranking of the CCFO statement “Explore education and career opportunities” within the social competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Interact effectively
- Demonstrate a positive attitude to new procedures or technology
- Acknowledge and accept information sharing
- Predict responses of others to particular actions or events

The competency, “Interact effectively” received the highest overall ranking by all the respective groups.

The competency, “Predict responses of others to particular actions or events” received an overall lowest ranking.

When comparing qualifying institutions, this competency received the second lowest ranking by the “Higher Education” group and the lowest ranking by the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group ranked it second lowest, and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received the second lowest ranking by the “Formal training programmes” group, and the lowest ranking by the “Other instances” group.

Table 81 Explore education and career opportunities:

Self-regulative competencies

CCFO statement	Explore education and career opportunities	
Competency category	Self-regulative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V46	Explore new perspectives, continuous learning and self development	1
V47	Be adaptable and aware of one's behaviour based on feedback and suggestions from others	2
V48	Learn from mistakes; analyse own performance strategies in order to improve performance	3
V45	Pursue goals beyond requirements	4
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V46	V46	
V45	V48	
V47	V47	
V48	V45	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V46	V46	
V47	V47	
V45	V48	
V48	V45	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V46	V46	
V45	V48	
V47	V47	
V48	V45	

The overall ranking of the CCFO statement “Explore education and career opportunities” within the self-regulative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Explore new perspectives, continuous learning and self-development
- Be adaptable and aware of one's behaviour based on feedback and suggestions from others
- Learn from mistakes; analyse own performance strategies in order to improve performance
- Pursue goals beyond requirements

The competency, “Explore new perspectives, continuous learning and self-development” received the highest overall ranking by all the respective groups.

The competency, “Pursue goals beyond requirements” received an overall lowest ranking.

When comparing qualifying institutions, this competency received the second highest ranking by the “Higher Education” group and the lowest ranking by the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group ranked it third and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received the second highest ranking by the “Formal training programmes” group, and the lowest ranking by the “Other instances” group.

Table 82 Explore education and career opportunities: Generative competencies

CCFO statement	Explore education and career opportunities	
Competency category	Generative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V56	State a goal clearly and unambiguously	1
V55	Supply missing or implied information	2
Comparing qualifying institutions		
Higher Education	**Other Training interventions**	
V55	V56	
V56	V55	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V55	V56	
V56	V55	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V56	V56	
V55	V55	

The overall ranking of the CCFO statement "Explore education and career opportunities" within the generative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- State a goal clearly and unambiguously
- Supply missing or implied information

The competency, "State a goal clearly and unambiguously" received the highest overall ranking by all the respective groups.

When comparing qualifying institutions, the "Higher Education" group ranked it second and the "Other training interventions" group ranked it first.

When comparing work environment, the "Higher Education and Training Institution" group ranked it second and the "Other training providers" ranked it first.

When comparing awareness of CCFOs, both the “Formal training programmes” group and the “Other instances” group ranked it first.

The competency, “Supply missing or implied information” received an overall lowest ranking.

When comparing qualifying institutions, this competency was ranked first by the “Higher Education” group and second by the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group ranked it first, and the “Other training interventions” group ranked it second.

When comparing awareness of CCFOs, this competency received a ranking of second by both the “Formal training programmes” group and the “Other instances” group.

Table 83 Develop entrepreneurial opportunities:

Functional competencies

CCFO statement	Develop entrepreneurial opportunities	
Competency category	Functional competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V79	Recognise varying contributing elements and concepts at hand	1
V80	Reflect own estimation of elements or concepts at hand	2
V77	Systematically shape and re-shape of elements referring to sequence	3
V76	Communicate facts, thoughts and feelings	4
V78	Enlighten by offering clear explanations and descriptions	5
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V79	V80	
V77	V79	
V76	V76	
V78	V77	
V80	V78	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V79	V79	
V77	V80	
V78	V76	
V76	V77	
V80	V78	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V80	V79	
V79	V77	
V76	V80	
V78	V76	
V77	V78	

The overall ranking of the CCFO statement “Develop entrepreneurial opportunities” within the functional competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Recognise varying contributing elements and concepts at hand
- Reflect own estimation of elements or concepts at hand
- Systematically shape and re-shape of elements referring to sequence
- Communicate facts, thoughts and feelings
- Enlighten by offering clear explanations and descriptions

The competency, “Recognise varying contributing elements and concepts at hand” received the highest overall ranking by all the respective groups.

When comparing qualifying institutions, the “Higher Education” group ranked it highest and the “Other training interventions” group ranked it second.

When comparing work environment, both the “Higher Education and Training Institution” group and the “Other training providers” ranked it highest.

When comparing awareness of CCFOs, the “Formal training programmes” group ranked it second, and the “Other instances” group ranked it highest.

The competency, “Enlighten by offering clear explanations and descriptions” received an overall lowest ranking.

When comparing qualifying institutions, this competency received the second lowest ranking by the “Higher Education” group, and the lowest ranking by the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group ranked it third, and the “Other training interventions” group ranked it lowest.
When comparing awareness of CCFOs, this competency received the second lowest ranking by the “Formal training programmes” group, and the lowest ranking by the “Other instances” group.

Table 84 Develop entrepreneurial opportunities:

Investigative competencies

CCFO statement	Develop entrepreneurial opportunities	
Competency category	Investigative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V106	Identify obstructions preventing the reaching of goals	1
V105	Separate important from unimportant information	2
V107	Sequence information	3
V108	Predict results	4
V109	Order information or processes categorically	5
V111	Critique thoughts, feelings and behavior	6
V113	Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behavior	7
V110	Make fine distinctions	8
V112	Justify the merits and applicability of thoughts, feelings and behavior	9
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V106	V105	
V105	V106	
V107	V107	
V108	V108	
V109	V109	
V111	V110	
V113	V111	
V110	V112	
V112	V113	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
NIL	V106	
NIL	V105	
NIL	V107	
NIL	V108	
NIL	V109	
NIL	V111	
NIL	V113	
NIL	V110	
NIL	V112	

Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V106	V106
V105	V105
V107	V107
V108	V108
V109	V109
V113	V111
V111	V110
V110	V113
V112	V112

The overall ranking of the CCFO statement “Develop entrepreneurial opportunities” within the investigative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Identify obstructions preventing the reaching of goals
- Separate important from unimportant information
- Sequence information
- Predict results
- Order information or processes categorically
- Critique thoughts, feelings and behavior
- Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behavior
- Make fine distinctions
- Justify the merits and applicability of thoughts, feelings and behavior

The competency, “Identify obstructions preventing the reaching of goals” received the highest overall ranking by all the respective groups, except the “Other training interventions” group which ranked it second.

The “Higher Education and Training institution” group did not respond to the questionnaire.

The competency, “Justify the merits and applicability of thoughts, feelings and behavior” received an overall lowest ranking by all the respective groups, except for the “Other training interventions” group which ranked it second last.

The “Higher Education and Training institution” group did not respond to the questionnaire.

Table 85 Develop entrepreneurial opportunities:

Relationship managerial competencies

CCFO statement	Develop entrepreneurial opportunities	
Competency category	Relationship managerial competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V47	Plan timeously in advance to accomplish a goal	1
V46	Make sound decisions despite uncertainties and pressure	2
V48	Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behavior	3
V45	Reveal a result orientated approach	4
Comparing qualifying institutions		
Higher Education	**Other raining interventions**	
V47	V46	
V48	V47	
V45	V48	
V46	V45	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V46	V47	
V47	V48	
V48	V46	
V45	V45	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V46	V47	
V47	V48	
V48	V46	
V45	V45	

The overall ranking of the CCFO statement “Develop entrepreneurial opportunities” within the relationship managerial competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Plan timeously in advance to accomplish a goal
- Make sound decisions despite uncertainties and pressure
- Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behavior
- Reveal a result-orientated approach

The competency, “Plan timeously in advance to accomplish a goal” received the highest overall ranking by all the respective groups.

When comparing qualifying institutions, the “Higher Education” group ranked it highest, and the “Other training interventions” group ranked it second.

When comparing work environment, the “Higher Education and Training Institution” group ranked it highest, and the “Other training providers” ranked it second.

When comparing awareness of CCFOs, the “Formal training programmes” group ranked it second, and the “Other instances” group ranked it highest.

The competency, “Reveal a result-orientated approach” received an overall lowest ranking by all the respective groups, except for the “Higher Education” group, which ranked it third.

Table 86 Develop entrepreneurial opportunities:

Social competencies

CCFO statement	Develop entrepreneurial opportunities	
Competency category	Social competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V59	Demonstrate a positive attitude to new procedures or technology	1
V57	Acknowledge key power relationships and strategies accurately	2
V58	Predict responses of others to particular actions or events	3
V62	Interact effectively	4
V61	Acknowledge and accept information sharing	5
V63	Show sensitivity, anticipate and understand other's perspectives	6
V60	Identify bias or stereotypes	7

Comparing qualifying institutions	
Higher Education	**Other training interventions**
V59	V58
V57	V57
V62	V59
V61	V62
V58	V61
V63	V63
V60	V60

Comparing work environment	
Higher Education and Training institution	**Other training providers**
V58	V59
V57	V57
V62	V58
V59	V62
V60	V61
V63	V63
V61	V60

Comparing awareness of CCFOs	
Formal training programmes	**Other instances**
V57	V59
V59	V58
V58	V62
V61	V61
V62	V63
V63	V57
V60	V60

The overall ranking of the CCFO statement “Develop entrepreneurial opportunities” within the social competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Demonstrate a positive attitude to new procedures or technology
- Acknowledge key power relationships and strategies accurately
- Predict responses of others to particular actions or events
- Interact effectively
- Acknowledge and accept information sharing
- Show sensitivity, anticipate and understand other's perspectives
- Identify bias or stereotypes

The competency, “Demonstrate a positive attitude to new procedures or technology” received the highest overall ranking by all the respective groups.

When comparing qualifying institutions, the “Higher Education” group ranked it highest and the “Other training interventions” group ranked it third.

When comparing work environment, the “Higher Education and Training Institution” group ranked it fourth, and the “Other training providers” ranked it first.

When comparing awareness of CCFOs, the “Formal training programmes” group ranked it second, and the “Other instances” group ranked it first.

The competency, “Identify bias or stereotypes” received an overall lowest ranking by all the respective groups except for “Higher Education and Training institution” group, which ranked it fifth.

Table 87 Develop entrepreneurial opportunities:

Self-regulative competencies

CCFO statement	Develop entrepreneurial opportunities	
Competency category	Self-regulative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V49	Explore new perspectives, continuous learning and self development	1
V51	Learn from mistakes; analyse own performance strategies in order to improve performance	2
V50	Be adaptable and aware of one's behavior based on feedback and suggestions from others	3
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V49	V49	
V50	V51	
V51	V50	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V49	V49	
V51	V51	
V50	V50	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V49	V49	
V50	V51	
V51	V50	

The overall ranking of the CCFO statement “Develop entrepreneurial opportunities” within the self-regulative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Explore new perspectives, continuous learning and self-development
- Learn from mistakes; analyse own performance strategies in order to improve performance
- Be adaptable and aware of one's behavior based on feedback and suggestions from others

The competency, “Explore new perspectives, continuous learning and self-development” received the highest overall ranking by all the respective groups.

The competency, “Be adaptable and aware of one's behavior based on feedback and suggestions from others” received an overall lowest ranking

.

When comparing qualifying institutions, this competency received a ranking of second by the “Higher Education” group, and the lowest ranking by the “Other training interventions” group.

When comparing work environment, both the “Higher Education and Training institution” group and the “Other training interventions” group ranked it lowest.

When comparing awareness of CCFOs, this competency received a ranking of second by the “Formal training programmes” group, and the lowest ranking by the “Other instances” group.

Table 88 Develop entrepreneurial opportunities:

Generative competencies

CCFO statement	Develop entrepreneurial opportunities	
Competency category	Generative competencies	
Overall ranking		
Variable	**Competencies**	**Ranking**
V59	Supply missing or implied information	1
V58	State a goal clearly and unambiguously	2
V61	Conceive, create something that did not exist before	3
V57	Supply missing or implied information	4
V60	Design, construct and execute prepared plans	5
Comparing qualifying institutions		
Higher Education	**Other training interventions**	
V61	V59	
V58	V58	
V59	V61	
V60	V57	
V57	V60	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V61	V59	
V60	V58	
V58	V61	
V57	V57	
V59	V60	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V59	V61	
V58	V58	
V61	V59	
V57	V57	
V60	V60	

The overall ranking of the CCFO statement “Develop entrepreneurial opportunities” within the generative competencies category of the spider cobweb model was ranked in the following order from highest to lowest:

- Supply missing or implied information
- State a goal clearly and unambiguously
- Conceive, create something that did not exist before
- Supply missing or implied information
- Design, construct and execute prepared plans

The competency, “Supply missing or implied information” received the highest overall ranking by all the respective groups.

When comparing qualifying institutions, the “Higher Education” group ranked it third, and the “Other training interventions” group ranked it highest.

When comparing work environment, the “Higher Education and Training Institution” group ranked it lowest, and the “Other training providers” ranked it highest.

When comparing awareness of CCFOs, the “Formal training programmes” group ranked it highest, and the “Other instances” group ranked it third.

The competency, “Design, construct and execute prepared plans” received an overall lowest ranking.

When comparing qualifying institutions, this competency received the second lowest ranking by the “Higher Education” group, and the lowest ranking by the “Other training interventions” group.

When comparing work environment, the “Higher Education and Training institution” group ranked it second, and the “Other training interventions” group ranked it lowest.
When comparing awareness of CCFOs, this competency received the lowest ranking by both the “Formal training programmes” group and the “Other instances” group.

The following text represents the competencies per spider cobweb category. The competencies per spider cobweb category that were ranked highest are listed to eliminating duplications.

Functional Competencies

- Recognising varying contributing elements and concepts at hand
- Be acquainted with concept/element at hand in order to identify, distinguish an differentiate it amongst others
- Communicate facts, thoughts and feelings
- Combine physical and sensory skills needed to operate equipment with the understanding of scientific and technological principles
- Reflect own estimation of elements or concepts at hand

Investigative competencies

- Separate important from unimportant information
- Identify obstructions preventing the reaching of goals

Relationship managerial competencies

- Assimilate/Integrate information in order to adapt or adjust thoughts, feelings and behaviour
- Plan timeously in advance to accomplish a goal
- Identify and nurture opportunities for collaboration
- Cultivate and maintain extensive informal networks
- Initiate and / or manage change

Social competencies

- Show sensitivity, anticipate and understand other's perspectives
- Understand diverse world views and demonstrate sensitivity to group differences
- Acknowledge and accept information sharing
- Interact effectively
- Demonstrate a positive attitude to new procedures or technology

Self-regulative competencies

- Think clearly and stay focused under pressure
- Adapt priorities to meet the varying requirements of a situation
- Establishes priorities as part of system
- Be adaptable and aware of one's behaviour based on feedback and suggestions from others
- Explore new perspectives, continuous learning and self development
- Honour the links between feelings, thoughts and actions of self as well as others
- Express a guiding awareness of values and goals
- Explore new perspectives, continuous learning and self development

Generative competencies

- Explore fresh ideas from a variety of sources
- State a goal clearly and unambiguously
- Assemble information or material together into a structure
- Supply missing or implied information

The next table integrates the identified competencies that received an overall highest ranking by the respective groups. An indication is then given of the applicability to the spider cobweb category as well as the CCFO statements.

Table 89 List of competencies underpinning the CCFOs

Competencies	Spider cobweb category						CCFO statement											
	F	I	RM	S	SR	G	1	2	3	4	5	6	7	8	9	10	11	12
Acknowledge and accept information sharing				y					y									
Adapt priorities to meet the varying requirements of a situation					y			y				y						
Assemble information or material together into a structure						y				y			y					
Assimilate/ integrate information in order to adapt or adjust thoughts, feelings and behaviour			y				y	y			y	y						
Be acquainted with concept/element at hand in order to identify, distinguish an differentiate it amongst others	y								y	y			y	y				
Be adaptable and aware of one's behaviour based on feedback and suggestions from others					y						y							
Combine physical and sensory skills needed to operate equipment with the understanding of scientific and technological principles	y											y						
Communicate facts, thoughts and feelings	y							y			y				y			
Cultivate and maintain extensive informal networks			y													y		
Demonstrate a positive attitude to new procedures or technology				y								y		y				y
Establishes priorities as part of system					y				y	y								
Explore fresh ideas from a variety of sources						y	y					y			y	y		
Explore new perspectives, continuous learning and self development					y								y	y			y	y
Express a guiding awareness of values and goals					y											y		
Honour the links between feelings, thoughts and actions of self as well as others					y										y			
Identify and nurture opportunities for collaboration			y					y						y	y		y	y
Initiate and / or manage change			y														y	
Interact effectively				y							y						y	
Make sound decisions despite uncertainties and pressure			y											y				
Recognise varying contributing elements and concepts at hand	y						y									y		y
Reflect own estimation of elements or concepts at hand	y																y	
Separate important from unimportant information		y					y		y	y	y	y	y		y	y		
Show sensitivity, anticipate and understand other's perspectives				y			y											
State a goal clearly and unambiguously						y		y	y		y			y			y	
Supply missing or implied information						y												y
Think clearly and stay focussed under pressure					y		y											
Understand diverse world views and demonstrate sensitivity to group differences				y				y		y			y		y	y		

The legend for above table is as follows:

The first column provides competencies that are applicable to the CCFOs. The second column up to the grey line represents the competency category per spider cobweb model:

F functional competencies
I Investigative competencies
RM Relationship managerial competencies
S Social competencies
SR Self-regulative competencies
G Generative competencies

The columns right of the grey line represents the CCFO statements:

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made
- Work effectively with others as a member of a team, group, organisation, community
- Organise and manage oneself and one's activities responsibly and effectively
- Collect, analyse, organise and critically evaluate information
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation
- Use science and technology effectively and critically showing responsibility towards the environment and health of others
- Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation
- Reflecting on and exploring a variety of strategies to learn more effectively
- Participating as responsible citizens in the life of local, national and global communities
- Being culturally and aesthetically sensitive across a range of social contexts
- Exploring education and career opportunities and
- Developing entrepreneurial opportunities

Each identified competency is unique and effective in that is not repeated per spider cobweb category, but is efficient in the applicability to the CCFO statements.

This tabular representation is provided as part of the descriptive statistical interpretation of the data received from the questionnaires.

The questionnaires are a verification of the empirical research conducted.

The following chapter provides an overall summary and interpretation of the research conducted.

5.10 CONCLUSION

The next chapter discusses the main findings, results, highlights and variances of the research.

CHAPTER 6: CONCLUSION

6.1 INTRODUCTION

Reflect

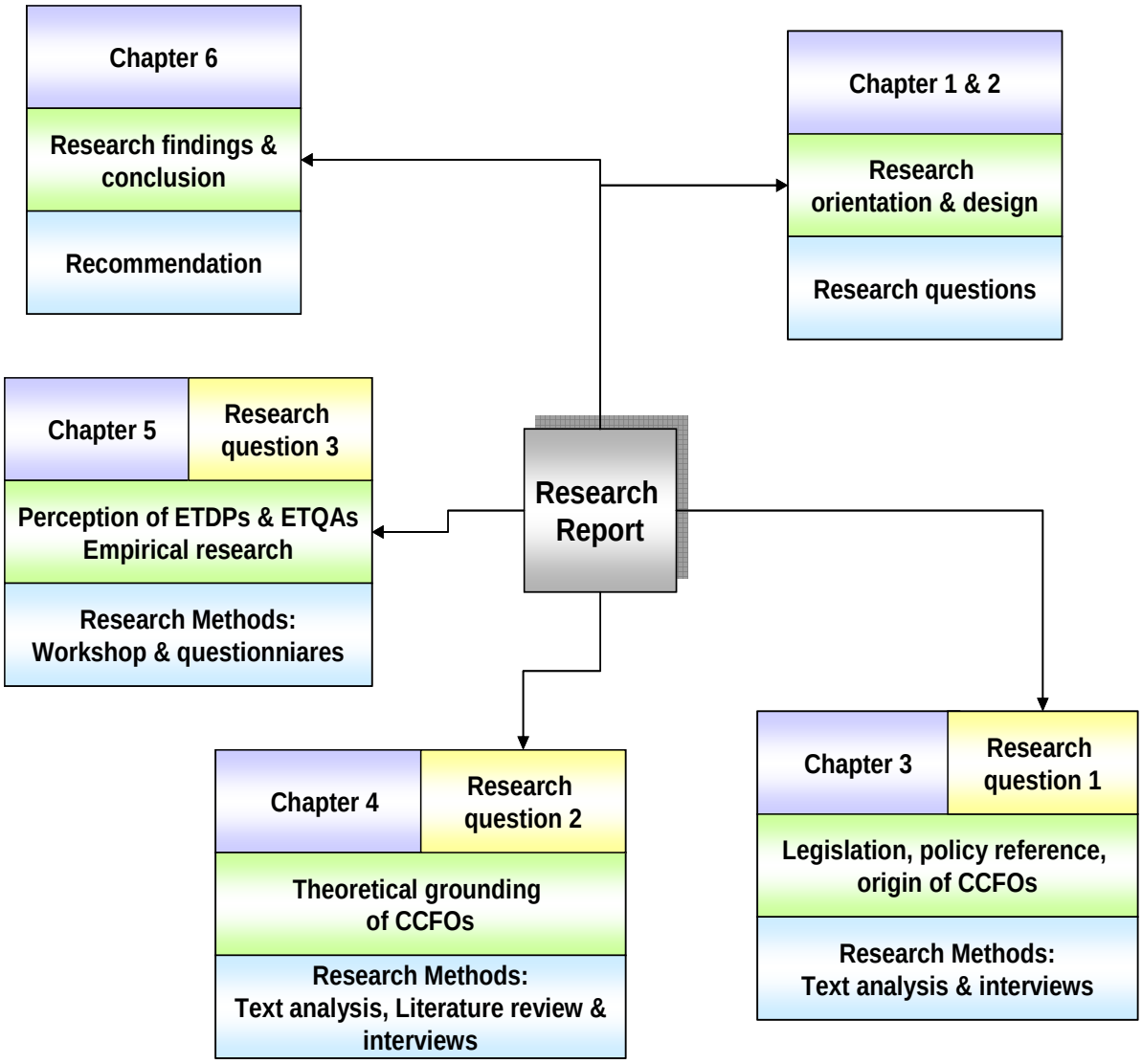
Chapter 6 reflects on the research conducted and discusses the main findings of the research by concluding with the results from the previous chapters.

Anomalies and surprising results are highlighted and variances and uncertainties that might require further scholarship are discussed. Suggestions for the implications of this study in terms of further research and the implementation of findings are discussed.

The purpose of this research is to report a concept analysis of the CCFOs within the context of the education, training and development environment, within the SAQA (SAQA) National Qualifications Framework (NQF).

The research report follows the research questions. The following is a visual representation of the research report findings and discussions are conducted accordingly:

Figure 15 Visual representation of research report



6.2 GENERAL RESEARCH FINDINGS

Chapter 1 discusses the research orientation. Chapter 2 provides an in-depth discussion of the research design. Figure 3 in chapter 2 is a representation of the scientific orientation. The epistemology of this research is anti-positivist in nature. This paradigm is led by the interpretation of the subjective world. In this research the interpretation is led by the researcher as part of the subjective world i.e the ETD practice. The world can only be partially communicated and understood, the CCFOs are interpreted and understood from the action researcher's perspective leading to the research recommendations that further research ought to be done is the fields as specified under the relevant heading.
The research is anti-positivist in nature and is a combined enquiry of critical theory and interpretivist research. The over arching research methodology is that of action research. Other research methods could be implemented as led by the action research cycle and findings because of the eclectic nature of this research methodology.
Qualitative research as well as quantitative research methodology is implemented and action research is the main method.

The objective of the research is to understand the significance of the CCFOs by deconstructing the statements in terms of the competencies underpinning the CCFOs. By framing the meaning of the CCFOs in context of the ETDP has consequential meaning to the emancipatory nature of this ground theory. The ETDPs and ETQAs are now able to incorporate the statements based on an informed uniform way.

The identified competencies are informed by the participating practitioners where the individuals, ETQAs and ETDPs have set out their interpretation of the CCFOs. The findings of this research is mere an approximation of the concept.
New thoughts about familiar experiences, which is the CCFOs, are expected research results. The research findings also lead to understanding of the concept of CCFOs and initiate the change in the ETD practice. The research is part of an ongoing research for better ways of incorporating the CCFOs in the ETD practice. The findings of this research are unlikely to be the same as those of future research, but as for now it will add value to the ETD practice as it contribute to understanding the concept of CCFOs.

Triangulation of this research study is table 90; List of competencies underpinning the CCFOs. Theoretical components such as literature review, text analysis and policy documents serve as one leg of the triangulation process. The second leg is the interviews and CCFO Workshop. The third leg derived from the first two legs and is that of the questionnaires. All three legs triangulated to table 90.

6.3 FIRST RESEARCH QUESTION

How does SAQA and relevant legislation describe CCFOs?
How does the relevant documentation describe the origin of CCFOs?
In what terms do policy and related documents refer to the CCFOs?
How do the CCFOs contribute to curriculum design and development with reference to the legislation and relevant documentation?

Chapter 2 addresses the first research question and discusses the legislative concept analysis of CCFOs. Related documentation and discussion documents are analysed. This chapter is purely a text and policy analysis of the concept of CCFOs.

A crystallisation of the concept as derived from related text and policy analysis indicates that the concept is very broad and even knowledgeable stakeholders in the NQF are not consistent in its description.

The resources state that CCFOs are an essential concept in the transforming nature of the SAQA and the NQF and are utilised to ensure access, portability and lifelong learning. CCFOs are generic competencies that should be implemented in a cross-curricular function. CCFOs underpin education, training and development initiatives. CCFOs express the intended results of education, training and development and underpin all learning processes, thus enhancing the learning process and contributing to the full development of an individual.

CCFOs are critical for the development of lifelong learning and describe the qualities SAQA envisaged for the development of learners. Any person undergoing education, training or development should demonstrate these qualities at the end of education, training and development intervention. The fact that several authors describe CCFOs diversely indicates that there could be confusion amongst service providers and trainers regarding the conceptual understanding.

The interview results and legislative concept analysis as discussed in chapter 4 correlate in that both refer to the CCFOs as:

- Transformational tools
- Describing the qualities all learners should have at the end of any learning programme
- Supporting lifelong learning
- Should be integrated cross-curricular

The interview results and legislative concept analysis both lack in:

- Describing the CCFOs in terms of the underpinning competencies and competencies
- Providing guidelines for the conceptualisation of the CCFOs

The second research question covers the theoretical grounding of the CCFOs. The theoretical grounding is inspected to extract relevant competencies that describe the competencies underpinning the CCFOs.

6.4 SECOND CLUSTER OF RESEARCH QUESTION

Chapter 1 discusses the research orientation. Chapter 2 provides an in-depth discussion of the research design. Figure 3 in chapter 2 is a representation of the scientific orientation. The epistemology of this research is anti-positivist in nature. This paradigm is led by the interpretation of the subjective world. In this research the interpretation is led by the researcher as part of the subjective world i.e the ETD practice. The world can only be partially communicated and understood, the CCFOs are interpreted and understood from the action researcher's perspective leading to the research recommendations that further research ought to be done is the fields as specified under the relevant heading.

The research is anti-positivist in nature and is a combined enquiry of critical theory and interpretivist research. The over arching research design is that of action research. Other research methods could be implemented as led by the action research cycle and findings because of the eclectic nature of this research methodology.
Qualitative research as well as quantitative research methodology is therefore implemented as part of the research design.

The objective of the research is to understand the significance of the CCFOs by deconstructing the statements in terms of the competencies underpinning the CCFOs. By framing the meaning of the CCFOs in context of the ETDP has consequential meaning to the emancipatory nature of this ground theory. The ETDPs and ETQAs are now able to incorporate the statements based on an informed uniform way.

The identified competencies are informed by the participating practitioners where the individuals, ETQAs and ETDPs have set out their interpretation of the CCFOs. The findings of this research is mere an approximation of the concept. New thoughts about familiar experiences, which is the CCFOs, are expected research results. The research findings also lead to understanding of the concept of CCFOs and initiate the change in the ETD practice. The research is part of an ongoing research by me as practitioner, using action research, with the aim of finding better ways of incorporating the CCFOs in my ETD practice and other ETD practices in general. The findings of this research are

unlikely to be the same as those of future research, but as for now it will add value to the ETD practice as it contribute to understanding the concept of CCFOs.

The outcome of the triangulation of data for this research study is tabled in table 90 as a matrix of competencies underpinning the CCFOs. Theoretical components such as the literature review, text analysis and a study of policy documents serve as one leg of the triangulation process. The second leg is the qualitative data gathered from interviews and the CCFO Workshop. The third leg is derived from the first two legs and entails the quantitative data gathered by means of the questionnaires.

6.5 FIRST CLUSTER OF RESEARCH QUESTION

The first cluster of research questions is linked to the problem identified regarding how the CCFOs are described and documented, in relation to curriculum design and development.

How does SAQA and relevant legislation describe CCFOs?
How does the relevant documentation describe the origin of CCFOs?
In what terms do policy and related documents refer to the CCFOs?
How do the CCFOs contribute to curriculum design and development with reference to the legislation and relevant documentation?

Chapter 2 addresses the first research question and discusses the legislative concept analysis of CCFOs. Related documentation and discussion documents are analysed. This chapter is purely a text and policy analysis of the concept of CCFOs.

A crystallisation of the concept as derived from related text and policy analysis indicates that the concept is very broad and even knowledgeable stakeholders in the NQF are not consistent in its description.

The resources state that CCFOs are an essential concept in the transforming nature of the SAQA and the NQF and are utilised to ensure access, portability and lifelong learning. CCFOs are generic competencies that should be implemented in a cross-curricular function. CCFOs underpin education, training and development initiatives. CCFOs express the intended results of education, training and development and underpin all learning processes, thus enhancing the learning process and contributing to the full development of an individual.

CCFOs are critical for the development of lifelong learning and describe the qualities SAQA envisaged for the development of learners. Any person undergoing education, training or development should demonstrate these qualities at the end of education, training and development intervention. The fact that several authors describe CCFOs diversely indicates that there could be confusion amongst service providers and trainers regarding the conceptual understanding.

The interview results and legislative concept analysis as discussed in chapter 4 correlate in that both refer to the CCFOs as:

- Transformational tools
- Describing the qualities all learners should have at the end of any learning programme
- Supporting lifelong learning
- Should be integrated cross-curricular

The interview results and legislative concept analysis both lack in:

- Describing the CCFOs in terms of the underpinning competencies and competencies
- Providing guidelines for the conceptualisation of the CCFOs

The second research question covers the theoretical grounding of the CCFOs. The theoretical grounding is inspected to extract relevant competencies that describe the competencies underpinning the CCFOs.

6.6 SECOND CLUSTER OF RESEARCH QUESTION

The second cluster of research questions entails the theoretical grounding of the CCFOs and is discussed in chapter 3.

What theoretical groundings describe CCFOs?
What theoretical groundings could describe the CCFOs?
How could CCFOs be described in terms of the above-mentioned?
What underpinning refined competencies/competencies describe CCFOs?

As indicated in chapter 3, the CCFOs are derived from the essential outcomes and correlate with the Mayer competencies as well as the key competencies. CCFOs however, differ from the specific outcomes. Specific outcomes are subject related and are pitched at a specific level of the NQF whereas the CCFOs are cross-curricular and apply to all learning areas at all the levels of the NQF. CCFOs are not restricted to any specific learning context, but inform the formulation of specific outcomes in the individual areas of learning for all learners at all levels on the NQF. A qualification contains both specific and CCFOs that promote lifelong learning.

CCFOs ought to be implemented in such a way that the learner will utilise it in work-related outcomes. In other words, CCFOs should be embedded within the learner's capabilities in order to execute a job-related task successfully.

The CCFOs can be differentiated but are inseparable. The theoretical resources were explored in order to find practical explanatory descriptions of the CCFOs. The intention of the research is not to describe the theoretical concepts *per se* but to identify the competencies underpinning the CCFOs. The catalogue of competencies that could describe the CCFO seems to be almost endless. This part of the chapter on the CCFOs intends to provide a comprehensive understanding of the concept with due understanding of the impossibility of listing every single competency by which it could be described.

The CCFO statements were analysed in terms of the verbs encapsulated in the statements. The verbs were clustered in two main areas: cognitive and affective domain specific characteristics. Emotional/social intelligence was explored to determine the competencies pertaining to this domain applicable to the CCFO statements. The cognitive domain specific characteristics were sourced from: Sternberg's triarchic model (Sternberg 2001:316) (Addendum D), Bloom's taxonomy of cognitive objectives (Addendum E) and Beyer's cognition and meta-cognition (Addendum F). These identified competencies of the CCFOs according to their theoretical grounding were verified in chapter 5.

The third and last research question determines the conceptualisation of the CCFOs as perceived by the ETQA managers as well as the ETDPs.

6.7 THIRD RESEARCH QUESTION

What is the conceptualisation of the Education, Training and Development Quality Assurers regarding CCFOs?

Chapter 5 addresses the third research question and provides a description of the empirical study of this research project.

Most of the identified competencies are repeated in most of the CCFO statements. This supports the notion that the CCFOs can be differentiated but are inseparable. While demonstrating the capability or competency of one CCFO statement, it simultaneously results in developing the next.

The CCFOs contain 6 competency categories as represented in the spider cobweb model. These are:

- Functional competencies
- Investigative competencies
- Generative competencies
- Self-regulative competencies
- Relationship managerial competencies
- Social competencies

The competencies pertaining to the categories are applicable across the CCFO statements. This would imply that if a learner is able to demonstrate the mentioned competencies that s/he is competent in the CCFOs. This demonstrated capability can only be applied or performed in a specific content related knowledge basis where a new capability is formed or an existing capability is enforced.

Table 90 in chapter 5 concludes the conceptual analysis of the CCFOs. This table provides a list of the competencies that underpin the CCFOs.
The purpose of this study is to identify competencies that underpin the CCFOs. Table 90 provides a list of competencies that underpin the CCFOs. This research projected contributed to the ETDP environment in that it identified focal competencies underpinning the CCFOs instead of meaninglessly listing the CCFOs or providing an endless list of competencies per CCFO statement.
This indicates that an education and training provider is able to select from the competency list certain competencies applicable to the content and environment suitable for the facilitation of learning. These identified competencies can be used to implement the “design back” principle of OBE in education and training, ensuring that the CCFOs are incorporated in education and training. Not only will the education and training evolve around the CCFOs but also add value in meaningful way in that the CCFOs are not listed but integrated and intervened in education and training.

CCFOs are the tools that are utilised to enable the learner to use his/her knowledge to be able, to be competent, and to become an expert in a specific field achieving a purposeful objective. CCFOs are the key critical success factors in any education, training and development initiative.

Knowledge is of little value if it cannot be utilised in new situations or in a form very different from that in which it was originally encountered. Although knowledge is a necessary condition, it is not a sufficient condition for becoming an expert. What is needed is some evidence that the learners can do something with their knowledge; that they can apply the information to new situations and problems. The CCFOs are tools that the learner or facilitator can utilise to access knowledge and to develop new knowledge. The 31 identified competencies can now be utilised for this purpose.

6.8 RESEARCH IMPLICATIONS

This research in its entirety serves the design component of the curriculum design process. The outcomes of this study are the end results in terms of identified underpinning competencies of the CCFOs, which any learner will have to achieve at the end of any learning programme at any level of the NQF. The designing back principle of OBE, coined by Spady, will be applied when integrating the outcomes of this study. The competencies underpinning the CCFOs as identified in this study serve as guidelines to Education, Training and Development Practitioners, policy makers with regard to leading practice in training in organisations, service providers, assessors, Education and Training Quality Assurors (ETQA) and training managers.

The CCFOs are not new to the ETDP. It is misunderstood. The CCFOs ought to lead the ETDPs in designing, implementing and developing education training and development initiatives. The CCFOs are the means of engaging with the specific outcomes in a specific context.

No one theory can be linked to one specific CCFO statement. The statements are too broad and indicate the development of learners in a holistic way. As an example, the theoretical underpinning of the CCFOs referring to team work, would not only include theories on co-opertive learning, but also theories on independent learning, self-regulated

learning, communication, multiple intelligences, learning styles and many more. Though, one could argue that theories on co-operative learning would be the dominant focus. Furthermore, the CCFOs are differentiated but are inseparable.

Another example is the CCFOs that refer to language usage. Included is reference to visual language. Visual language implies visual intelligence as well as visual learning styles and related competencies. Language competencies per se are essential for any learning since language and cognition are interrelated. Language across the curriculum, therefore, is an essential part of all learning programmes.

Since the very nature of the CCFOs is holistic, a more holistic approach to ETDP and learning per se should be followed. Instead of unilateral viewpoint the ETD practitioner should hold a multi-dimensional viewpoint of the ETD practice. Holistic learning strategies should be employed to ensure holistic facilitating of learning.

What the study reveals, is that ETDPs have no understanding of the CCFOs, with the implication that they would not be in a position to implement the CCFOs in their practice. This identified gap in the professional development of ETDPs signals that all ETDP professional development programmes, being it a formal qualification, such as the Post Graduate Certificate in Higher Education and Training (PGCHET), offered at different universities, or being it informal programmes such as the training of assessors with the aim of registering as assessors, should include the understanding and implementation of the CCFOs as part of the training. ETDPs should become knowledagble and skillfull regarding the implementation of language across the curriculum, study competencies across the curriculum, interpersonal competencies across the curriculum (as implied by team work and co-operative learning) and all the other competencies that are related to the different CCFOs.

ETDPs should take responsibility for their own professional development. This could be promoted by introducing action research for workplace learning and for monitoring one's own understanding and way of implementing the CCFOs in practice by the ETD practitioner. In this way scholarly practitioners are developed. Institutions and private providers offering professional development programmes for ETDP should include action research as a tool for professional development.

Action research is emancipatory by nature. Conducting the action research reported in this document empowered me to become a scholarly practitioner. I am in a position to develop and improve my practice, and specifically my implementation of the CCFOs in a more critical way. Doing the study brought about significant professional development. I am more willing to act as agent of change and to be role model to other practitioners. The study also allows me to have a firm grounding of acting my leadership role as an ETD practitioner.

The competencies that underpin the CCFOs as identified in this research inform the formulation of the specific outcomes. The expected demonstration of competence is led by the competencies as listed in table 90. The specific outcomes are related to subject knowledge in a specific context (field or sub-field).
The CCFOs are not new to the ETDP. It is misunderstood. The CCFOs ought to lead the ETDPs in designing, implementing and developing education training and development initiatives. The CCFOs are the means of being engaging with the specific outcomes in a specific context.

No one theory can be linked to one specific CCFO statement. The statements are to broad and indicate the development of learners in a holistic way. And also, the CCFO are differentiated but are inseparable
Concluding this research I would like to provide the following improved example of how I will implement the CCFOs after conducting this research:.
Referring to chapter 3.10 the “old” example:

Instead of listing the CCFOs or attempting to elaborate on the statements by incorporating descriptive statements within the CCFOs the following can be done:

Using the following competencies as identified in this research:

- Interact effectively
- Communicate facts, thoughts and feelings
- Separate important information from unimportant
- Assemble information or material together in a structure

The End user computing unit standard, “Collate, understand and communicate workplace data”, in Addendum A page 24: is applicable with reference to the specific outcome: “Use basic graphical techniques to understand and communicate information relating to work environment.’

The following assignment guidelines could be applicable as an example to incorporate the CCFOs:

As a team, prepare a presentation in the break away rooms, indicating the importance of the in depth analysis of the requirement received from an end user. Use the following as guidelines in the preparation:

- Confirm receipt of requirement
- Confirm completeness of requirement
- Confirm if additional approval is required according to delegation
- Verify request information
- Generate requisition
- Conduct preliminary budget check
- Reserve funds for the expenditure (soft commitment):
- Provide feedback to the requestor

The above example indicates that the CCFOs are not new to the ETDP environment. The CCFOs support the outcomes-based education and training principles. The CCFOs ultimately support learner development in that it stimulates thinking as well as social and cultural development.

The following closing interpretation is made, with reference to figure 9 (SAQA's Critical Cross-Field Education, Training and Development Outcomes) as presented by the E&MP Report (1996:13). The CCFO determine the learner's engagement with the content as determined by the context. The content is subject related within a specific industry field (context).

With regards to the unit standards; the specific outcomes determine the skills or knowledge necessary to be declared competent by an assessor, whereas the CCFOs are directly related to the action assigned to the specific outcome.

6.9 PROPOSED FURTHER RESEARCH

The following research is proposed as a result of this study:

- A study of the offering of the Post-Graduate Certificate in Higher Education and Training (PGCHET) as professional qualification for ETDPs. The research question should focus on how such a programme respond to engaging students with the CCFOs. In this regard the focus should be on the curriculum and the extent to which the CCFOs are addressed, how the CCFOs are implemented across the curriculum during facilitating of learning, and how the CCFOs are assessed.
- The same study should be conducted for any informal programmes offered by private providers that are involved in the professional development of ETDPs.
- I would like to continue my action research project reported so far in this document. Since action research is a continuous process and this study only focussed on the abstract level of understanding the CCFOs, I would line to investigate my implementation of the CCFOs in my own practice. The essence of action research lies in planning to be innovative in my practice and to improve it.
- A study should be conducted on the professional development of the ETDPs.
- The latter could be complemented by a study on using action research as a tool for professional development.

- Studies with the following foci:
    - Implementation of methods of facilitating the mastering of the CCFOs according to the identified competencies underpinning the statements across the curriculum
    - Assessment of the CCFOs according to the identified underpinning competencies
    - Determining whether there is differentiation in the identification, implementation and assessment of CCFOs according to the levels of the NQF

BIBLIOGRAPHY

Armstrong, T. 1994. *Multiple intelligence in the classroom*. Alexandria: Virginia. Association for Supervision and Curriculum Development (ASCD).

Ashman, A. & Conway, R. 1993. *Using cognitive methods in the classroom*. London: Routledge.

Barnett, R. 1994. *The limits of competence: knowledge, higher education and society*. Buckingham, UK: the Society for Research into Higher Education and Open University Press.

Bellis, I. 2002. *Competencies Development. A practitioner's Guide to SAQA, the NQF and the Competencies development Act.* 2nd Edition. Republic of South Africa. Knowledge Resources (Pty) Ltd.

Beyer, B. 1991. *Teaching thinking competencies: A handbook for secondary school teachers*. Boston: Allyn and Bacon.

Blagg, N. 1991. *Can we teach intelligence? A comprehensive evaluation of Feuerstein's instrumental enrichment programme.* New Jersey: Lawrence Erlbaum Associates, Inc.

Beyer, B. 1998. *Developing a thinking competencies programme. A complete, practical plan for developing and implementing a systematic thinking competencies programme in any school*. Boston: Allyn and Bacon, Inc.

Bloom, B.S. 1979.*Taxonomy of education objectives. The classification of educational objectives. Book 1. Cognitive domain*. London: Longman Group LTD.

Breier, M. 1998. The role of generic skill in lifelong learning: panacea or pip-dream? *Journal of Education*, (23): 73-100.

Bridges, D. 1993. Transferable competencies: a philosophical perspective. *Studies in Higher Education*, 18(1):43-51.

Buck, R.1984. *The communication of emotions*. New York: The Guilford Press.

Burell, G. & Morgan, 1979. *Sociological paradigm and organizational analysis*. London: Heinemann.

Charles, R. & Lester, F. 1982. *Teaching problem solving: What, why & how*. Palo Alto, CA: Dale Seymour.

Cherniss, C. 2000. *Emotional intelligence: What it is and why it matters*. Paper presented at the Annual Meeting of the Society for Industrial and Organisational Psychology. 15 April. New Orleans. LA.

Cohen, L. & Manion, L. 1994. *Research methods in Education*. Fourth Edition. Falmer. London: Routledge.

Cohen, L.; Manion, L. & Morrison, K. 2000*. Research methods in education*. 5th edition. London: Routledge Falmer.

Costa, A. 1985. *Developing minds: A reference book for teaching thinking*. Alexandria, VA: Association for Supervision and Curriculum Development.

De Bono, E. 1997. *Direct Attention Thinking Tools. Tools for parallel thinking*. Des Moines, Iowa: Advanced Practical Thinking Training, Inc.

De Bono, E. 1999. *Six Thinking Hats. Tools for parallel thinking*. Des Moines, Iowa: Advanced Practical Thinking Training, Inc.

Denzin, N.K. & Lincoln, Y.S. 2000. *Handbook of qualitative research*. 2nd Edition. United States of America: Sage Publication.

Department of Education. 1995. *Curriculum 2005*. Pretoria: Government Printer.

Department of Education. 2000. *Curriculum 2005, Lifelong learning for the 21st Century. A user's guide.* Pretoria: Government Printer.

Department of Education. *White Paper on Education and Training*. Notice 196 of 1995. Parliament of the Republic of South Africa.

Department of Labour. 2001(a). Competencies Development Strategy. Competencies for a productive citizenship for all. Leadership pack. Pretoria: Government printers.

Department of Labour. 2001(b). National Competencies Development Strategy. *An introduction to the Competencies Development Strategy. Leadership pack*. Pretoria: Government printers.

Department of Labour. 2001(c). *National Competencies Development Strategy. Understanding the Laws. Leadership pack*. Pretoria: Government printers.

Department of Labour. 2001(d). National Competencies Development Strategy. SETAs – Sector Education and Training Authority. *Leadership pack*. Pretoria: Government printers.

Dewey, J. 1938. *Logic: the theory of inquiry*. New York: Henry Holt.

Driscoll, M.P. 1994. *Psychology of Learning for Instruction*. Florida State University. Needham Heights: Allyn & Bacon.

Ediger, M. 2001. Architecture around the world and the pupil. *Education,* 96(2): 149-152.

Eltis, K. 1995. Focusing on learning: Report of the review of outcomes and profiles in New South Wales Schooling. Sydney: University of Sydney, Faculty of Education.

Ennis, R.H. 1985. A logical basis for measuring critical thinking competencies. *Educational Leadership*, 76(1):42-57.

Ernst, A.E. 2003. *Competencies programme on competencies auditing*. College for competence. Pretoria.

Eurydice Survey. 2002. *Key competencies*. Directorate-General for Education and Culture. Survey 5. European Commission. Belgium.

Feuerstein, R .1980. *Instrumental enrichment. An Intervention Programme for Cognitive Modifiability.* New Jersey: University Park Press.

Fobes, R. 1996. Creative problem solving. A way to forecast and create a better future. *The Futurist,* January-February. 4:.13-25.

French, J.N. & Rhoder, C. 1992. *Teaching thinking competencies. Theory and Practice*. New York: Garland publishing.

Garbers, J.G. 1996. *Doeltreffende geesteswetenskaplike navorsing*. Pretoria. J.L. van Schaik Publishers.

Gardner, H. 1983. *Frames of Mind*. New York: Basic books.

Greenwood, D.J. & Levin, M. 1998. *Introduction to Action Research. Social research for social change*. California: SAGE Publications Inc.

Goleman, D.1996. *Emotional intelligence. Why it matters more than IQ.* London: Bloomsberry Publishing Plc.

Guilford, J.P. 1967.*The nature of human intelligence*. California: McGraw-Hill, Inc.

Henning, E.; Van Rensburg, W. & Smit, B. 2004. *Finding your way in qualitative research*. Pretoria: Van Schaik Publishers.

Herrmann, N. 2000. *Herrmann Brain Dominance Instrument. HBDI.* Confidential personal profile information. Ned Herrmann International Africa Holdings (Pty) Ltd.

Isaacs, S. 2002. *Personal discussion*. 19 March. Pretoria: South African Qualifications Framework.

Jacobson, D.A; Eggen, & P; Kauchak, D.1999. *Methods for teaching; Promoting Student Learning*. 5th Edition. New Jersey: Prentice Hall.

Joint Education Service.JET. 2003. *Critical Cross-Field Outcomes: Assessor Training Manual*. Council for Adult and Experiential Learning.

Jones, E.E. 1964. *Ingratiation: A social psychological analysis*. New York: Appleton-Century-Crofts.

Jansen, J.D. 2001. On the politics of performance in South African Education: Autonomy, accountability and assessment. *Prospectus*, XXXI (4): 553-564.

Kelly, A.V. 2004. *The curriculum. Theory and practice*. London: SAGE Publications Limited.

Killen, R. 2000. *Outcomes-based education: Principles and possibilities*. Unpublished manuscript. University of Newcastle, Faculty of Education.

Kontos, S. & Nicholas, J. G. 2001.Independent problem solving in the development of meta-cognition. *The Journal of Genetic Psychology*, 147(4): 481-495.

Lave, J. & Wenger, E. 1991. *Situated learning: legitimate peripheral participation*. Cambridge: Cambridge University Press.

Lipman, M. 1988.Critical thinking – what can it be? *Educational Leadership,* 46(1): 38-43.

Lipman, M. 1993. Promoting better classroom thinking. *Educational psychology,* 13(3): 8-15.

Manzo, A.V. 1998. Teaching for creative outcomes: Why we don't, how we all can. *Clearing House*, 71(5):287-290.

Marzano, R.J.; Brandt, R.S.; Hughes, C.S.; Jones, B.F.; Presseisen, B.Z.; Rankin, S.C.. Suhor, C. 1988. *Dimensions of thinking: A framework for Curriculum and Instruction*. Virginia: The Association for Supervision and Curriculum Development.

Mayer, J. D. 1992. *The key competency report – Putting General Education to work*: Australian Education Council and Ministers for Vocational Education, Employment and Training.

Mayer, J.D.; Salovey, P.; Caruso, D.R. & Sitarenios G. 2001. Emotional intelligence as a standard intelligence. *Emotions,* 1:232-242.

McKendree, J.; Small, C.; Stenning, K. & Colon, T. 2002. The role of representation in teaching and learning critical thinking. *Educational Review*, 54(1): 577-589.

McKernan, J. 1997. *Curriculum Action Research. A handbook of methods and resources for the reflective practitioner*. London: Kogan Page Ltd.

McMillan, J.H. & Shcumacher, S. 1993. *Research in Education. A conceptual introduction*. California: Harper Collins College Publishers.

Meeker, M. 2000. *An Interpretation guide with strategies for using the SOI*. Oregon: SOI Systems.

Mouton, J. 2002. *How to succeed in your Master's & Doctoral Studies. A South African guide and resource book*. Pretoria: Van Schaik Publishers.

Newman, F.M. 1992. The prospects for Classroom Thoughtfulness in High School Social Studies. *In Teaching Thinking: An Agenda for the 21st Century*. Edited by Collins C. & Mangieri, J.N. New Jersey: Lawrence Erlbaum Associates Inc.

Neuman, L.W.1997. *Social research methods. Qualitative and Quantitative Approaches*. Needham Heights: Allyn & Becon.

Olivier, C. 2002. *Let's educate, train and learn outcomes-based*. Ifafi: OBET Pro.

Engineering and Manufacturing Processes Report (E & MP). 1996. National qualifications Framework, Pilot project.

Roberts, M.J. & Erdos, G. 1993. Strategy selection and meta-cognition. *Educational Psychology*, 13(3): 1-21.

Salovey, P. & Mayer, J.D. 1990. Emotional intelligence. *Imagination, Cognition and Personality*, 9(3): 185-211.

Schaffer, L.F.; Gilmer, B. & Schoen, M. 1940. *Psychology*, New York: Harper & Brothers.

Sector Competencies Plan, The Education, Training and Development Practices Sector Education Training Authority, April 2001-March 2002.

Sorenson, J.S.; Buckmaster. L.R.; Francis, M.K. & Knauf, K.M. 1996. *The power of problem solving*. Massachusetts: Allyn & Bacon.

South Africa. General Notice. 2002. *Recognition of Prior Learning: The development, implementation and quality assurance of RPL systems programmes and services by ETQAs, Assessors and Providers*. Notice 298 of 2002. Government Gazette. No. 23186.

South Africa. 1995. *The South African Qualifications Authority Act*. No 58 Pretoria: Government Printer.

South Africa. 1998. *Skills Development Act*. *No. 97 of 1998.* Pretoria: Government Printer.

South Africa. 1999. *Skills Development Levies Act of 1999.* Pretoria: Government Printer.

South African Quality Authority. 1996. *Discussion document: Lifelong learning through a National Qualifications Framework. Report of the ministerial committee for development work on the NQF*. Pretoria: Government Printer.

South African Quality Authority. 1997. *Paper produced by the Office of the Executive Officer*. 1(1). Pretoria: Government Printer.

South Africa. Government Notice. 1998. South African Quality Authority. *Regulations Under the South African Qualify Authority Act, 1995 (Act No.58 of 1995). National Standards Bodies Regulations*. Government Gazette. Vol. 393. No. R 452. Pretoria: Government Printer.

South African Quality Authority February. 1998(a). *SAQA Bulletin*, 1(2).Pretoria: Government Printer.

South African Quality Authority. 1998(b). *Criteria for the Generation and Evaluation of Standards and Qualifications on the National Qualifications Framework*. SAQA Bulletin. 2(1) Pretoria: Government Printer.

South African Quality Authority. 2000(a). *Criteria for the Generation and Evaluation of Standards and Qualifications on the National Qualifications Framework*. Policy Document. Pretoria. Government Printer.

South African Quality Authority. 2000(b). *National Qualifications Framework: An Overview.* Pretoria. Government Printer.

South African Quality Authority. 2000(c). *NQF and Curriculum 2005. A SAQA position paper. What is the relationship between the National Qualifications Framework, Outcomes-based Education and Curriculum 2005?* Pretoria. Government Printer.

South African Quality Authority. 2000(d). *The National Qualifications Framework and Curriculum Development*. Pretoria. Government Printer.

South African Quality Authority. 2000(e). *Towards the development of level descriptors in the NQF: A point of departure* Pretoria. Government Printer.

South Africa. Government Gazette, 4 February 2000. Vol. 415 No. 20844. Pretoria: Government Printer.

South African Qualifications Authority .2001. *FETC Policy Document.* Pretoria: Government Printer.

South African Quality Authority. 2002. *SAQA Inter-NSB comments on the NQF study team report*. Pretoria: Government Printers.

Spady, W. 1994. *Outcome-based education: Critical issues and answers*. Arlington, VA: American Association of School Administrators.

Sternberg, R. J. 2001. *Psychology. In search of the Human Mind*. Third Edition. Orlando: Harcourt College Publishers.

Sternberg, R.J. 1984. *Mechanisms of cognitive development: A componential approach*. New York: Freeman.

Sternberg, R.J. & Grigorenko, E.L. 2003. *The psychology of abilities, competencies and expertise*. United Kingdom: Cambrigde University Press.

Sternberg, R.J. & Grigorenko, E.L. 2001.Guilford's structure of Intellect model and model of creativity: Contributions and limitations. *Creativity Research Journal*, 13:309-316.

Swanson, H.L. 1992. The relationship between cognition and problem solving in gifted children. *Roeper Review*, 15(1):1-12.

Szetela, W.; & Nicole, C. 1992, Evaluating problem solving in mathematics. *Educational Leadership,* 49(8):42-45.

Teele, S. 2000. *Rainbows of intelligence. Exploring how students learn*. California: Corwin Press Inc.

Thorndike, R.L. & Stein, S. 1937. An evaluation of the attempts to measure social intelligence. *Psychological Bulletin*, 34:275-284.

Tinzmann, M.; Jones, B.J. & Pierce, J. 1991. Changing Societal Need: Changing how we think about curriculum and instruction. *In Teaching Thinking: An Agenda for the 21st Century*. Edited by Collins C. & Mangieri, J.N. New Jersey: Lawrence Erlbaum Associates Inc.

Vithal, R. and Jansen, J. 1997. *Designing your first Research Proposal: A Manual for researchers in Education and the Social Science*. Pretoria: Van Schaik Publishers.

Weiss, R.S. 1994. *Learning from strangers: The arts and methods of qualitative interview studies*. New York: Free Press.

Weinstein, E.A. 1969. *The development of Interpersonal Competence*, in Handbook of Socialisation Theory and Research, Goslin, D.A. (ed.) Chicago: Rand McNally.

Wechsler, D. 1958. *The measurement and appraisal of adult intelligence*. Fourth Edition. Baltimore: The Williams & Wilkins Company.

Younger, D. 2002. *Discussion*. Johannesburg: Jovill. 14 May

Zuber-Skerritt, O. 1996. *New directions in action research*. London: Falmer Press.

Zuber-Skerritt, O. 1992. *Action Research in Higher Education. Examples and Reflections*. London: Kogan Page Limited.

INTERNET SITES

South African Quality Authority. 2001. Format template in using the criteria for the Generation and Evaluation of Qualifications and Standards within the National Qualifications Framework.
Available online at: <http:/www.saqa.co.za>. Accessed on 20 March 2003.

South Australian Science Teachers Association.
Available online at: <HTTP://WWW.SASTA.ASN.AU>. Accessed on 2 May 2004

Douglas Mawson Institute of TAFE. Open Learning Unit. *Key Competencies*. Department for Employment, Training and Further Education, South Australia.
Available online at: <HTTP://WWW.TAFE.SA.EDU.AU/VET>. Accessed on 2 May 2004.

Douglas Mawson Institute of TAFE. Open Learning Unit. *Outcomes*. Department for Employment, Training and Further Education, South Australia.
Available online at: <HTTP://WWW.TAFE.SA.EDU.AU/VET>. Accessed on 5 May 2004.

The Consortium for research on Emotional intelligence in Organisation.
(A generic competence framework distils finding form):
U.S. Office of Personnel Management: MOSAIC competencies for professional and administrative occupations
Spencer and Spencer: *Competence at Work*
Spencer and Spencer: *Top performance and leadership competence studies* published in R. H. Rosier(ed). 1994 &1995. *The competency model handbook*, Volumes One and Two: Boston, Linkage
Goleman. D. 1998. Working with Emotional intelligence. Bantam
Available online at: WWW.EICONSORTIUM.ORG . Accessed on 2 May 2003.

ADDENDA

Addendum A: Examples of SAQA Unit standards and Qualifications

Unit standard Example 1:

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

REGISTERED UNIT STANDARD:

Collect, use and communicate data that relate to farming

SAQA US ID	UNIT STANDARD TITLE		
12621	Collect, use and communicate data that relate to farming		
SGB NAME	NSB	REGISTERING PROVIDER	
SGB Primary Agriculture	NSB 01-Agriculture and Nature Conservation		
FIELD		SUBFIELD	
Agriculture and Nature Conservation		Primary Agriculture	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	2
REGISTRATION STATUS	REGISTRATION START DATE	REGISTRATION END DATE	SAQA DECISION NUMBER
Reregistered	2004-12-02	2007-12-02	SAQA 1657/04

PURPOSE OF THE UNIT STANDARD

The learner that have completed this Unit standard will be able to:

- Collect data that have to do with the running of the farm.
- Compare and interpret data collected.
- Base decision making on interpreted data

LEARNING ASSUMED TO BE IN PLACE AND RECOGNITION OF PRIOR LEARNING

No prior learning is assumed to be in place

UNIT STANDARD RANGE

N/A

UNIT STANDARD OUTCOME HEADER

Specific outcomes and Assessment Criteria:

SPECIFIC OUTCOME 1

Explain data collection.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

1. Identification of data to be collected explained

ASSESSMENT CRITERION RANGE

Value of data for future use; suitability of data collected in the past
Changes in methods of collecting and recording data

ASSESSMENT CRITERION 2

2. Types of data to be collected identified

ASSESSMENT CRITERION RANGE

Financial data; farming and farming related data: e.g. yield, machine usage, transport, productivity, labour requirements, consumables, rainfall; human resources data; legal data; marketing data

ASSESSMENT CRITERION 3

3. Methods used to store data demonstrated

SPECIFIC OUTCOME 2

Interpret data.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

1. Comparability of data explained

ASSESSMENT CRITERION RANGE

Data to be used to be expressed in similar units; compare "apples with apples"

ASSESSMENT CRITERION 2

2. Reasons given for comparing data

ASSESSMENT CRITERION RANGE

Identify problem areas; curtail costs; increase productivity and quality; identify possible trends e.g. change in yield; discover deviations e.g. fuel used/km

ASSESSMENT CRITERION 3

3. Decisions made based on interpreted data explained

SPECIFIC OUTCOME 3

Use interpreted data.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

1. Use of interpreted data demonstrated

ASSESSMENT CRITERION 2

2. Follow-up on results based on implementation of interpreted data explained

ASSESSMENT CRITERION 3

3. Reasons for follow-up on implementation of interpreted data explained

UNIT STANDARD ACCREDITATION AND MODERATION OPTIONS

The assessment of qualifying learners against this standard should meet the requirements of established assessment principles. It will be necessary to development assessment activities and tools, which are appropriate to the contexts in which qualifying learners are working. These activities and tools may include an appropriate combination of self-assessment and peer assessment; formative and summative assessment, portfolios and observations, etc.
The assessment should ensure that all the specific outcomes, critical cross-field outcomes and essential embedded knowledge be assessed.
The specific outcomes must be assessed through observation of performance. Supporting evidence should be used to prove competence of specific outcomes only when they are not clearly seen in the actual performance.
Essential embedded knowledge must be assessed in its own right, through oral and written evidence. It cannot be assessed by observation only.
The specific outcomes and essential embedded knowledge must be assessed in relation to each other. If a qualifying learner is able to explain the essential embedded knowledge but is unable to perform the specific outcomes, then they should not be assessed as competent. Similarly, if a qualifying learner is able to perform the specific outcomes but is unable to explain or justify their performance in terms of the essential embedded knowledge, they should not be assessed as competent.

Evidence of the specified critical cross-field outcomes should be found both in performance and in the essential embedded knowledge.
Performance of specific outcomes must actively affirm target groups of qualifying learners, not unfairly discriminate against them. Qualifying learners should be able to

justify their performance in terms of these values.

1 Anyone assessing a learner against this unit standard must be registered as an assessor with the relevant ETQA.
2. Any institution offering learning that will enable achievement of this unit standard or assessing this unit standard must be accredited as a provider with the relevant ETQA.
4. Moderation of assessment will be overseen by the relevant ETQA according to the moderation guidelines in the relevant qualification and the agreed ETQA procedures.

UNIT STANDARD ESSENTIAL EMBEDDED KNOWLEDGE

1. Importance of collecting farming data.
2. Importance of regular data collection.
3. Importance of accessibility of data collected.
4. Importance of comparing “apples with apples" i.e. variables that could affect the comparability of data to be eliminated.
5. Importance of follow-up on implementation of interpreted data

UNIT STANDARD DEVELOPMENTAL OUTCOME

N/A

UNIT STANDARD LINKAGES

N/A

Critical Cross-field Outcomes (CCFO):

UNIT STANDARD CCFO IDENTIFYING

The learner will be able to identify and solve problems during the process

UNIT STANDARD CCFO ORGANIZING

The learner will be able to organise and manage himself and his activities responsibly and effectively

UNIT STANDARD CCFO COLLECTING

The learner will be able to collect, analyse and critically evaluate information

UNIT STANDARD CCFO COMMUNICATING

The learner will communicate effectively when reporting on work matters

UNIT STANDARD CCFO SCIENCE

The learner will use science and technology effectively and critically (showing responsibility towards the environment and health of others)

UNIT STANDARD CCFO DEMONSTRATING

The learner will demonstrate an understanding of the world as a set of related systems

UNIT STANDARD ASSESSOR CRITERIA

Anyone assessing a learner against this unit standard must be registered as an assessor with the relevant ETQA

UNIT STANDARD NOTES

"Farmer" and "grower" is used as synonyms

Unit standard Example 2:

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

REGISTERED UNIT STANDARD:

Collect, analyse, use and communicate numerical data

SAQA US ID	UNIT STANDARD TITLE		
7451	Collect, analyse, use and communicate numerical data		
SGB NAME	NSB	REGISTERING PROVIDER	
SGB Math. Literacy Mathematics and Math Sciences	NSB 10-Physical, Mathematical, Computer and Life Sciences		
FIELD		SUBFIELD	
Physical, Mathematical, Computer and Life Sciences		Mathematical Sciences	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
ABET Level 4	Regular-Fundamental	Level 1	2
REGISTRATION STATUS	REGISTRATION START DATE	REGISTRATION END DATE	SAQA DECISION NUMBER
Reregistered	2003-12-03	2006-12-03	SAQA 1351/03

PURPOSE OF THE UNIT STANDARD

People credited with this unit standard are able to:

- Identify situations for investigation and data collection, collect data;
- Classify and analyse data;
- Summarise and display organised data;
- Extract and interpret information from various forms of display, communicate findings and critically evaluate information; and
- Demonstrate understanding of the concept of chance and simple probabilities.

LEARNING ASSUMED TO BE IN PLACE AND RECOGNITION OF PRIOR LEARNING

The following competency at ABET Numeracy level 3 is assumed to be in place:

The ability to construct and use tables and graphs to organise and interpret information.

Specific Outcomes and Assessment Criteria:

SPECIFIC OUTCOME 1

Identify situations for investigation and data collection and collect numerical data.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

1. Situations for data collection are identified in terms of the purpose for data collection.

ASSESSMENT CRITERION 2

2. Appropriate methods are selected to collect data.

ASSESSMENT CRITERION 3

3. A variety of appropriate data collection methods are used to collect data from primary and secondary sources.

ASSESSMENT CRITERION RANGE

Surveys, books, interviews, observations, tally sheets and questionnaires.

ASSESSMENT CRITERION 4

4. The potential misuse of data achieved through the data collection method is described.

ASSESSMENT CRITERION 5

5. Reasons for and limitations of using sampling are described.

SPECIFIC OUTCOME 2

Classify and analyse numerical data.

OUTCOME RANGE

Grouped and ungrouped data.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

1. Data is organised for meaningful analysis.

ASSESSMENT CRITERION RANGE

Classification, ordering, listing.

ASSESSMENT CRITERION 2

2. Analytical tools are used correctly and appropriately to analyse the data.

ASSESSMENT CRITERION RANGE

Median, mean, modes, frequency, range.

ASSESSMENT CRITERION 3

3. The differences between and uses of mean, median and mode are described.

SPECIFIC OUTCOME 3

Summarise and display organised numerical data.

OUTCOME RANGE

Graphs: pie, frequency polygon, histogram, simple bar graph, stem and leaf.
Tables, basic tree diagrams.
Display may be through different technologies.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

1. The form of display is appropriate to the data and context, and is justified in terms of its appropriateness.

ASSESSMENT CRITERION 2

2. The scale is selected and used for a reasonable presentation of the data, and the scale is justified in terms of its reasonableness.

ASSESSMENT CRITERION 3

3. Different forms of display are identified and evaluated in terms of their purposes.

SPECIFIC OUTCOME 4

Extract, interpret and critically evaluate information from various forms of display.

OUTCOME NOTES

Extract, interpret and critically evaluate information from various forms of display and communicate findings.

OUTCOME RANGE

Graphs: pie, frequency polygon, histogram, simple bar graph, stem and leaf.
Tables, basic tree diagrams.
Display may be through different technologies.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

1. The information extracted from the display is consistent with the display.

ASSESSMENT CRITERION 2

2. The information is interpreted to form informed opinions.

ASSESSMENT CRITERION 3

3. Displays that distort information are identified and the manner in which they distort information is described.

ASSESSMENT CRITERION 4

4. The effect of distortions in displays is described in terms of the impact on meaning in social, socio-historical, political and economic contexts.

ASSESSMENT CRITERION 5

5. Projections or predictions are made in a manner that is consistent with the display.

ASSESSMENT CRITERION 6

6. The information is analysed to determine and report on the validity of data collection methods, forms of display and projections that are made.

ASSESSMENT CRITERION 7

7. Communication of findings is clear, consistent with the display and makes use of accepted terminology.

SPECIFIC OUTCOME 5

Demonstrate understanding of the concept of chance and calculate simple probabilities.

OUTCOME RANGE

Limited to systematic counting strategies.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

1. Situations are identified in which chance arises.

ASSESSMENT CRITERION 2

2. Simple probabilities are determined.

ASSESSMENT CRITERION 3

3. Statements of chance are correctly interpreted.

ASSESSMENT CRITERION 4

4. The number of combinations and the probability of a particular event are determined.

ASSESSMENT CRITERION 5

5. Probabilities are used to address simple real or simulated problems.

UNIT STANDARD ACCREDITATION AND MODERATION OPTIONS

Critical Cross-field Outcomes (CCFO):

UNIT STANDARD CCFO IDENTIFYING

Identify and solve mathematical problems in which responses display that responsible decisions using critical and creative thinking have been made.

UNIT STANDARD CCFO ORGANIZING

Organise and manage oneself and one's activities responsibly and effectively.

UNIT STANDARD CCFO COLLECTING

Collect, analyse, organise critically evaluate numerical data.

UNIT STANDARD CCFO COMMUNICATING

Communicate effectively using numerical data.

UNIT STANDARD CCFO DEMONSTRATING

Understand the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.

Unit standard Example 3:

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

REGISTERED UNIT STANDARD:

Collate, understand and communicate workplace data

SAQA US ID	UNIT STANDARD TITLE		
8558	Collate, understand and communicate workplace data		
SGB NAME	NSB	REGISTERING PROVIDER	
SGB Hospitality, Tourism, Travel, Leisure and Gaming	NSB 11-Services		
FIELD		SUBFIELD	
Services		Hospitality, Tourism, Travel, Gaming and Leisure	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	5
REGISTRATION STATUS	REGISTRATION START DATE	REGISTRATION END DATE	SAQA DECISION NUMBER
Registered	2001-06-13	2004-06-13	SAQA 1036/01

PURPOSE OF THE UNIT STANDARD

A person assessed as competent against this unit standard will be able to collate, understand and communicate data in the workplace by making use of a measuring instrument to determine quantities, and using a basic graph to analyse and communicate information relating to the workplace.

This competence will equip individuals with the numeracy competencies to operate more effectively in their workplace and in their learning. It will contribute to more numerate workplace and learning environments.

LEARNING ASSUMED TO BE IN PLACE AND RECOGNITION OF PRIOR LEARNING

A person taking this unit standard is assumed to have numeracy equivalent to NQF 2.

UNIT STANDARD RANGE

Guides to the scope and complexity of the specific outcomes and essential embedded knowledge are provided in ranges/points beneath each. These are prefaced by "for example" since they are neither comprehensive nor necessarily appropriate to all contexts. Alternatives must however be comparable in scope and complexity.

Specific Outcomes and Assessment Criteria:

SPECIFIC OUTCOME 1

Read and use a basic scale.

OUTCOME RANGE

- Using a familiar measuring instrument.
- To determine quantities to the nearest marked number.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

When conducting assessments, assessors must ensure that they are familiar with the full text of the Unit standards being assessed.

They must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge.

As each situation is different, it will be necessary to develop assessment activities and tools, which are appropriate to the contexts in which practitioners are working. These activities and tools may include self-assessment, peer assessment; formative and summative assessment.

The specific outcomes and essential embedded knowledge must be assessed in relation to each other. If a practitioner is able to explain the essential embedded knowledge but is unable to perform the specific outcomes, they should not be assessed as competent. Similarly, if a practitioner is able to perform the specific outcomes but is unable to explain or justify their performance in terms of the essential embedded knowledge, they should

not be assessed as competent.

METHOD OF ASSESSMENT

Assessment should include practical demonstration of competence, either in the workplace or through work-realistic, out-of-classroom simulation.

A range of assessment methods should be used, including:

Direct observation - watch the practitioner carry out the task or produce a desired outcome during the course of his or her normal work under normal workplace conditions
Product sample - examine the outcomes previously produced by the practitioner
Simulation of a specific task - set a specific task for the practitioner to demonstrate in a simulated environment
Questioning (verbal or written) - ask relevant questions linked to the unit standard
Testimony - collect a portfolio of evidence from suitable people (e.g.: reports from a third party).

Integrated assessment

It may be more effective and efficient to assess a number of unit standards together thus reducing the overall number of assessment `events`.

- Consider a complete activity in the workplace (the `whole of work` approach) and see which unit standards relate to this activity.
- Work out how practitioners could collect evidence on a number of unit standards at the same time covering all the critical aspects of the standards
- Ensure that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

SPECIFIC OUTCOME 2

Use basic graphical techniques to understand & communicate information relating to work environment.

OUTCOME RANGE

- Develop a basic table or graph to capture information in relation to any workplace task.
- Understand the information presented in the table or graph.
- Present the information using a table or graph.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

When conducting assessments, assessors must ensure that they are familiar with the full text of the Unit standards being assessed.

They must ensure that the assessment covers the specific outcomes, critical cross-field outcomes and essential embedded knowledge.

As each situation is different, it will be necessary to develop assessment activities and tools, which are appropriate to the contexts in which practitioners are working. These activities and tools may include self-assessment, peer assessment; formative and summative assessment.

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- Work out how practitioners could collect evidence on a number of unit standards at the same time covering all the critical aspects of the standards
- Ensure that commonalities that exist between a number of unit standards are captured in a way that makes sense for assessment.

UNIT STANDARD ACCREDITATION AND MODERATION OPTIONS

1. Anyone assessing a learner or moderating the assessment of a learner against this unit standard must be registered as an assessor with the relevant ETQA.
2. Any institution offering learning that will enable the achievement of this unit standard must be accredited as a provider with the relevant ETQA.
3. Assessment and moderation of assessment will be overseen by the relevant ETQA according to the ETQAs policies and guidelines for assessment and moderation; in terms of agreements reached around assessment and moderation between ETQAs (including professional bodies); and in terms of the moderation guideline detailed under point 4 immediately below.

4. Moderation must include both internal and external moderation of assessments at exit points of the qualification, unless ETQA policies specify otherwise. Moderation should also encompass achievement of the competence described both in individual unit standards as well as the integrated competence described in the qualification.

Anyone wishing to be assessed against this qualification may apply to be assessed by any assessment agency, assessor or provider institution which is accredited by the relevant ETQA.

UNIT STANDARD ESSENTIAL EMBEDDED KNOWLEDGE

The qualifying learner is able to demonstrate a basic knowledge and understanding of:
1. Knowledge of more than one graphical technique for analysing and presenting information.

Critical Cross-field Outcomes (CCFO):

UNIT STANDARD CCFO WORKING

Working effectively with others as a member of a team, group, organisation or community (relates to both outcomes).

UNIT STANDARD CCFO COMMUNICATING

Communicate effectively (relates to both outcomes).

UNIT STANDARD CCFO CONTRIBUTING

Personal Development (relates to both outcomes).

UNIT STANDARD NOTES

Assessment case studies and other supplementary to be developed through the learnership pilots.

Addendum A continued: Examples of SAQA Qualifications

Qualification Example 1: (Based on exit level outcomes, not unit standards)

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

REGISTERED QUALIFICATION:

Diploma: Education: Early Childhood Development and Education

SAQA QUAL ID	QUALIFICATION TITLE		
15261	Diploma: Education: Early Childhood Development and Education		
SGB NAME	NSB	REGISTERING PROVIDER	
	-	Rand Afrikaans University	
Quality Assuring ETQA			
CHE-Council on Higher Education			
QUALIFICATION TYPE	FIELD	SUBFIELD	
National Diploma		Early Childhood Development	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	240	Level 5	Regular-Provider-ELOAC

REGISTRATION STATUS	SAQA DECISION NUMBER	REGISTRATION START DATE	REGISTRATION END DATE
Registered	SAQA 0943/02	2003-07-01	2006-06-30

PURPOSE AND RATIONALE OF THE QUALIFICATION

The primary purpose of this qualification is to provide qualifying learners with the ability to:

- Develop intellectual and practical competencies to identify developmental and educational needs,
- Analyse, interpret and understand early childhood development and education concepts,
- Reflect upon application of theory in practical teaching.

LEARNING ASSUMED TO BE IN PLACE AND RECOGNITION OF PRIOR LEARNING

Learners accessing this qualification should demonstrate their ability to:

- Read textbooks and study material with understanding and disseminate relevant literature,
- Functional literacy in written and oral form,
- Perform basic mathematical manipulations,
- Draw conclusions,
- Record findings and present results.

Grade 12 Certificate and Teachers Diploma (M+2)

Recognition of prior learning:

A learner who claims to have achieved entry requirements through experiential learning will be assessed. If the student is found to be competent the student may gain:

*Access,
*Advance placement,
*Or recognition of degree status will be granted on condition of continuing education.

RECOGNISE PREVIOUS LEARNING?

Y

EXIT LEVEL OUTCOMES

The learners should be able to:

1. Identify, analyse, assess and address the learning and developmental needs of individuals and educational settings, including schools and classrooms, based on relevant theoretical knowledge and reflect on his/her own problem-solving practice.

2. Collaborate, consult and work effectively within various professional contexts as a member of a team, group, and organisation based on knowledge of group work, consultation and collaboration, and be able to reflect on their own other's collaborative practices.

3. Organise and manage themselves and their professional activities responsibly, ethically and effectively work effectively.

4. Select and apply appropriate elementary educational and research methodology to collect, analyse and interpret information about educational, developmental, and organisational phenomena and communicate the findings and recommendations effectively as well as reflect on research competency.

5. Communicate with individuals, groups and organisations with regards to educational, developmental and organisational issues in oral and written format using visual and/or statistical modes of communication.

6. To access and process information through relevant information technology.

7. To explore, apply and critically reflect on the eco-systematic perspective towards the attainment of effective learning, health promoting schools and organisations.

8. Explore, apply and assess relevant learning theories, learning styles and strategies to learn effectively and facilitate lifelong learning.

9. Participate as responsible educational and learning support practitioners in promoting the education and development of the all individuals and schools by means of the identification, prevention and management of educational, development and organisational problems.

10. Explore and develop cultural and aesthetic sensitivity in individuals, groups and communities.

11. Explore and utilise educational and career opportunities in inclusive education and special educational needs.

12. Develop and assess entrepreneurial opportunities in education and special educational needs.

ASSOCIATED ASSESSMENT CRITERIA

The learner can: / Does the learner:

1. Can the learner effectively identify, analyse, and address the learning and developmental needs of individuals and educational settings, including schools and classrooms, based on relevant theoretical knowledge and reflect on his/her own problem-solving practice?

2. Can the learner collaborate, consult and work effectively within various professional contexts as a member of a team, group, and organisation based on knowledge of group work, consultation and collaboration, and be able to reflect on their own other's collaborative practices?

3. Can the leaner responsibly, ethically and effectively organize and manage themselves and their professional activities?

4. Can the learner appropriately select and apply elementary educational and research methodology to collect, analyse and interpret information about educational, developmental and organisational phenomena, and effectively communicate the findings and recommendations as well as reflect on research competency?

5. Can the learner completely communicate with individuals, groups and organisations with regards to educational, career and organisational issues in oral and written format using visual and/or statistical modes of communication?

6. Can the learner access and process information through relevant information technology?

7. Can the learner efficiently explore, apply and critically reflect on the eco-systematic perspective towards the attainment of health-promoting schools and organisations?

8. Can the learner adequately explore, apply and assess relevant learning theories,

learning styles and strategies to learn effectively and facilitate lifelong learning?

9. Can the learner appropriately and competently participate as responsible educational and learning support practitioners in promoting the education and development of all individuals and schools by means of the identification, prevention and management of educational, developmental and organisational problems?

10. Can the learner appropriately explore and develop cultural and aesthetic sensitivity in individuals, groups and communities?

11. Can the learner effectively and creatively explore and utilise educational and career opportunities in inclusive education and special educational needs?

12. Can the learner competently develop and assess entrepreneurial opportunities in education and special educational needs?

Formative assessment practices that will be implemented:

Learners are continuously assessed during modules via informal tests, 2 assignments per module, tutorials, group projects and peer assessment.

Summative assessment practices that will be implemented:

Integrated assessment, focusing on the achievement of the exit-level outcomes, will be done by means of a final written examination.

ARTICULATION OPTIONS

1. Access to qualifications on a lower level:
None

2. Access to qualifications on the same level:
None

3. Access to qualifications on a higher level:
On completion learners can apply to enter the Bachelor of Education (Honours)

MODERATION OPTIONS

Modules and examination papers will be moderated by subject specialist in the department. External specialists in the field of Special Educational Needs, Education Psychology and Education Guidance will continuously moderate outcomes, assessment criteria and quality of the course.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

1. Criteria regarding formal qualification that assessors should have:
The assessors should have a B Ed in Learners with Special Educational Needs or a B Ed in Educational Psychology or a B Ed in Educational Guidance or in related field of education.

2. Criteria regarding job or learning area experience
The assessors should be experienced in the teaching of learners with special educational needs or related educational fields.

3. Criteria regarding experience of or exposure to assessment
The assessors should have knowledge of and experience in relevant assessment practices.

NOTES

This is an old qualification recorded in June 1998.

UNIT STANDARDS:

This qualification is not based on Unit standards.

Qualification Example 2: (Based on unit standards)

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

REGISTERED QUALIFICATION:

National Certificate: Information Technology: End User Computing

SAQA QUAL ID	QUALIFICATION TITLE		
49077	National Certificate: Information Technology: End User Computing		
SGB NAME	NSB	PROVIDER NAME	
SGB Computer Sciences and Information Systems	NSB 10-Physical, Mathematical, Computer and Life Sciences		
QUALIFICATION TYPE	FIELD	SUBFIELD	
National Certificate	Physical, Mathematical, Computer and Life Sciences	Information Technology and Computer Sciences	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	130	Level 3	Regular-Unit Stds Based

REGISTRATION STATUS	SAQA DECISION NUMBER	REGISTRATION START DATE	REGISTRATION END DATE
Registered	SAQA 1257/04	2004-12-02	2007-12-02

PURPOSE AND RATIONALE OF THE QUALIFICATION

The purpose of the qualification is to build the knowledge and competencies required by learners in End User Computing. It is intended to empower learners to acquire knowledge, competencies, attitudes and values required to operate confidently in the End User Computing environment in the South African community and to respond to the challenges of the economic environment.

The qualification addresses the need in the workplace for nationally recognised qualifications, based on unit standards, which will allow learners with workplace experience in End User Computing to obtain recognition for prior learning.

The qualification provides a framework for learners to develop competencies that will enable them to become competent in End User Computing. It introduces theoretical concepts of End User Computing and requires the application thereof, to develop a range of competencies that will enable learners to be better-informed workers in their chosen industry. It provides a balanced learning experience that lays the foundation for access to further education, life long learning and to productive employment.

A qualifying learner will be able to: Competently apply the knowledge, techniques & competencies of End User Computing applications in the workplace. Understand the impact and use Information Communication & Technology (ICT) in an organisation and society. Improve Communication by combining communication competencies with End User Computing competencies. Improve the application of mathematical literacy in the workplace, by better utilising applicable End User Computing Applications

The National Certificate in IT: End User Computing at NQF Level 3 is intended for learners already employed or new learners entering the workplace, requiring End User Computing competencies. The unit standards of this qualification may be added to other industry qualifications to provide an End User Computing focus with comparison, choice, interpretation and the application of knowledge.

Rationale of the qualification

The National Certificate in IT: End User Computing - NQF Level 3, is designed to meet the needs of learners who require end user computing competencies in all sectors of the economy, as End User Computing is an essential skill in any business today. The qualification is designed to accommodate both learners in formal education and learners already employed. It aims to develop informed and skilled learners that can apply the acquired competencies in any industry and should contribute towards improved productivity and efficiency in the workplace.

The need for the qualification was highlighted by an IT sector study that was done and confirmed by ISETT SETA. The design of the qualification is unit standard based, to allow learners to qualify for a national qualification by accumulating the required credits via short learning programmes or workplace practical experience or both. It also allows learners to achieve the qualifications through recognition of prior learning, learnerships schemes or formal training.

The qualification at this level is foundational and generic, allowing maximum mobility between qualifications. Apart from the workplace needs the qualification will address, it is also designed as an entry-level qualification into most further education and training fields, because of the wide application of End User Computing in any environment. It will allow articulation into further qualifications in End User Computing or other IT qualifications, as well as entry into any other Further Education and Training where End User Computing is required.

LEARNING ASSUMED TO BE IN PLACE AND RECOGNITION OF PRIOR LEARNING

It is assumed that the learner is competent in competencies gained at the further education and training band up to NQF level 2. Further learning assumed is that learners are competent in End User Computing at NQF level 1.

The assumed learning can be acquired in the traditional way of formal study as well as in the workplace. Acquiring the competencies in a workplace (either via formal learnerships or on-the-job training) has the potential of addressing the problems of the past, where formal qualifications were only obtainable by way of formal study.

Recognition of prior learning (RPL)

Many of the competencies used in the IT profession has traditionally been acquired through short courses and on-the-job training, which did not provide formal recognition (at a national level) of the knowledge and competencies acquired. These competencies are still today viewed by most industries as invaluable but there is no national recognition. The nature of the IT field means that competence is developed experientially, therefore the assessment processes should recognise experience versus theoretical knowledge. Recognition of prior learning will now allow learners with these valuable competencies to be assessed and recognised formally.

Any learner wishing to be assessed may arrange to do so without having to attend any formal training. For recognition of prior learning the learner will be required to submit a portfolio of evidence of relevant experience, in a prescribed format, to be assessed for formal recognition. The assessor and learner will decide jointly on the most appropriate assessment procedures, subject to the assessment rules of the relevant ETQA. Learning assumed to be in place must be assessed by the assessor prior to any assessment relating to this qualification.

RECOGNISE PREVIOUS LEARNING?

Y

QUALIFICATION RULES

Rules regarding NQF levels of credits

The qualification consists of a minimum of 127 credits and has been designed in accordance with the SAQA regulations and rules of combination

Rules regarding Fundamental, Core and Electives
1. All fundamental unit standards are compulsory for this qualification. (41 credits)
2. All core unit standards are compulsory. (56 credits)

Rules regarding Electives
1. A minimum of 30 elective credits needs to be completed out of one of the elective specialisation fields listed
2. Additional standards from any other SAQA field or sub-field may be added to the listed electives.
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EXIT LEVEL OUTCOMES

1. Demonstrate an understanding of applying Graphical User Interface (GUI)-based Word Processing Application competencies in the Workplace.

2. Demonstrate an understanding of applying Graphical User Interface (GUI)-based Presentation Application competencies in the Workplace.

3. Demonstrate an understanding of applying GUI-based Spreadsheet Application competencies in the Workplace.

4. Demonstrate an understanding of applying GUI-based Electronic Mail Application competencies in the Workplace.

5. Demonstrate an understanding of applying GUI-based Web Browser Application

competencies in the Workplace.

6. Improve Communication by combining communication competencies with End User Computing competencies.

7. Improve the application of mathematical literacy in the workplace, by better utilising End User Computing Applications.

8. Demonstrate an understanding of the use of Information Communications & Technology (ICT) in an organisation & the impact it has on societies.

In addition to the above, unit standards will be utilised to provide depth of specification of the outcomes ranges and the assessment criteria and processes.

ASSOCIATED ASSESSMENT CRITERIA

1. The ability to apply word processing competencies in a GUI-based application is demonstrated by being able to do the following: Create, edit and format documents Enhance document appearance and to create merged documents

2. The ability to apply presentation competencies in a GUI-based application is demonstrated by being able to do the following: Create and edit slide presentations Produce a presentation for a specific purpose Enhance the appearance of a presentation

3. The ability to apply spreadsheet competencies in a GUI-based application is demonstrated by being able to do the following: Create and edit spreadsheets Solve a given problem by using a spreadsheet Enhance the functionality of a spreadsheet & apply graphs/charts

4. The ability to apply electronic mail (email) competencies in a GUI-based application is demonstrated by being able to do the following: Send & receive E-mail messages Enhance, edit & organise E-mail messages

5. The ability to apply Web Browser competencies in a GUI-based application is demonstrated by being able to use a web-browser to search and use information from the internet.

6. Improved Communication is demonstrated by combining End User Computing competencies with fundamental communicating competencies when communicating to others.

7. Demonstrate an improvement of mathematical literacy by utilising End User Computing applications to solve various aspects of personal life and in areas of business.

8. An understanding of impact of ICT and its use in an organisation is demonstrated by explaining its use and impact related to business and societies.

Furthermore, the assessment process should also cover the following generic components: Measure the quality of the observed practical performance as well as the theory and underlying knowledge; Use methods that are varied to allow the learner to display thinking and decision making in the demonstration of practical performance; Maintain a balance between practical performance and theoretical assessment methods to ensure each is measured in accordance with the level of the qualification; and Ensure that the relationship between practice and theory is not fixed but varies according to the outcomes being assessed.

Assessment of Critical Cross-field Outcomes

All critical cross-field outcomes are represented in this qualification. Each unit standard clearly outlines how the critical cross-field outcomes have been addressed. This is further summarised in the exit level outcomes of the qualification.
We have designed the exit level outcomes to facilitate the combining of the end user computing standards with the fundamental standards, to enhance the personal competencies, which is extended to support the critical cross-field outcomes.

To ensure applicability of Fundamental and Critical Cross-field Outcomes, this should be assessed as part of Core and Elective unit standard assessments.

Integrated Assessment

Development of the competencies may be achieved through a combination of formal and informal learning, self-learning, training programmes and work-based application.

Providers should conduct diagnostic and formative assessment. Formative, continuous and diagnostic assessments should also take place in the work place, if applicable. The learner should also be able to assess him or herself and determine readiness for a summative assessment against this qualification.

During integrated assessments the assessor should make use of formative and summative assessment methods and should assess combinations of practical, applied, foundational and reflexive competencies.

To ensure the principles of assessment of fairness, validity, reliability and practicability are upheld, a combination of the assessment methods of observation, product evaluation and questioning should be used, by applying the appropriate assessment tools (as described in the SAQA criteria and guidelines for assessment).

INTERNATIONAL COMPARABILITY

This qualification and unit standards have been evaluated against, and are comparable to core knowledge and specialised knowledge elements found in the following International Qualifications Frameworks: New Zealand NQF, Australian NQF, British NVQs.

Furthermore input to the development of the qualification has been benchmarked against International sources, where the outcomes and assessment criteria, degree of difficulty and notional learning time has been compared, as described below.

For the core competencies required, the following sources were referenced: International certifications like Microsoft MOUS, IC3 and ECDL/ICDL. We also confirmed that the above certifications are used in many African and SADC countries as benchmark for End User Computing competencies in a business environment. Countries referred to include, but are not limited to: Mauritius, Tanzania, Kenya, Botswana, Zimbabwe and Zambia

For constructing the qualification structure, the following sources were referenced: Edexcel qualification in Using IT, at UK NQF level 2 (refer NVQ code: Q1052641), Edexcel qualification in Operating IT Systems, at UK NQF level 2 (refer NVQ code: Q1052638), NCC Education's International Certificate in Computer Studies for IT Professionals, Various local short learning programs were also referenced to determine the local demand and structure of the qualification

This qualification combines the NQF principles and requirements, with Internationally accepted Knowledge Areas required in End User Computing, to address the specific needs of the South African environment.

ARTICULATION OPTIONS

The qualification at this level is foundational and generic, allowing maximum mobility between qualifications. Apart from the workplace needs the qualification will address, it is also designed as an entry-level qualification into most further education and training fields, because of the wide application of End User Computing in any environment.

This qualification was designed carefully to ensure vertical and horizontal articulation. It was developed to allow for further study in ICT and related fields at further education levels. The qualification was designed as part of a set of IT qualifications from NQF level 3 through to level 5 and higher. Two NQF level 4 qualifications (one in the systems support sub-area of IT and one in systems development) have recently been registered on the NQF. This new qualification addresses the learning assumed to be in place for the two NQF 4 qualifications mentioned, allowing learners' articulation into the ICT field.

As described earlier, many of the competencies used in the IT profession has traditionally been acquired through short courses and on-the-job training, which did not provide

formal recognition (at a national level) of the knowledge and competencies acquired. This qualification attempts to address this by allowing articulation into formal fields of study, by recognising the competencies acquired in various means and packaging it as a formal national qualification, and encourage further study having acquired the qualification.

MODERATION OPTIONS

Anyone assessing a learner or moderating the assessment of a learner against this Qualification must be registered as an assessor or moderator with the relevant ETQA.
Any institution offering learning that will enable the achievement of this Qualification must be accredited as a provider with the relevant ETQA.
Assessment and moderation of assessment will be overseen by the relevant ETQA according to the ETQAs policies and guidelines for assessment and moderation.
Moderation must include both internal and external moderation of assessments at exit points of the qualification, unless ETQA policies specify otherwise.
Moderation should also encompass achievement of the competence described both in individual unit standards as well as the integrated competence described in the qualification.
Anyone wishing to be assessed against this Qualification may apply to be assessed by any assessment agency, assessor or provider institution that is accredited for assessment by the relevant ETQA.
To ensure that national standards are maintained, the final assessment should be conducted on the following basis, which will be under the control of the relevant ETQAs.
National assessment of written papers and/or practical assignments needs to be undertaken, by the relevant ETQA. This must include the necessary assessment tools (e.g. marking schemes) to ensure consistent assessment. The ETQA itself or a nominated body or bodies can perform this function.
Assessment can be institutional or workplace based and must be done by a registered assessor.
External moderation will be undertaken as required, to ensure that the quality of NQF standards are maintained nationally

CRITERIA FOR THE REGISTRATION OF ASSESSORS

The criteria to register as an assessor includes the following: Have a relevant academic qualification or equivalent recognition, at a level higher that the qualification being assessed All registered assessors must have met the requirements of the generic assessor standard, and should be certificated by the ETDP SETA or by the relevant ETQA in agreement with the ETDP SETA in this regard. Assessors should be registered as assessors with the relevant ETQA, in accordance with the policies and procedures defined by the ETQA.

NOTES

Below is a list of the End User Computing unit standards that are the learning assumed to be in place for this qualification:

1. Operate a Personal Computer System
2. Use generic functions in a Graphical User Interface (GUI) environment
3. Install a Personal Computer (PC) peripheral device, in a GUI environment
4. Use a graphical User Interface (GUI)-based presentation application to create and edit slide presentations.
5. Managing files in a Graphical User Interface (GUI) environment
6. Use a Graphical User Interface (GUI)-based word processor to format documents
7. Use a Graphical User Interface (GUI)-based word processor to create and edit documents.

The qualification is ideal for business people in the following fields: Personal Assistants / Receptionists Office Administrators Project Administrators

Unit standards that are not listed in the qualification but relate to the above areas can be combined with this qualification as part of the elective unit standards, as long as the qualification rules are being adhered to.

UNIT STANDARDS:

	ID	UNIT STANDARD TITLE	LEVEL	CREDIT
Fundamental	8968	Accommodate audience and context needs in oral communication	Level 3	5
Fundamental	9010	Demonstrate an understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations	Level 3	2
Fundamental	13915	Demonstrate knowledge and understanding of HIV/AIDS in a workplace, and its effects on a business sub-sector, own organisation and a specific workplace	Level 3	4
Fundamental	9013	Describe, apply, analyse and calculate shape and motion in 2-and 3-dimensional space in different contexts	Level 3	4
Fundamental	9012	Investigate life and work related problems using data and probabilities	Level 3	5
Fundamental	11241	Perform Basic Business Calculations	Level 3	6
Fundamental	8973	Use language and communication in occupational learning programmes	Level 3	5
Fundamental	7456	Use mathematics to investigate and monitor the financial aspects of personal, business and national issues	Level 3	5
Fundamental	8970	Write texts for a range of communicative contexts	Level 3	5
Fundamental	110023	Present information in report format	Level 4	6

	ID	UNIT STANDARD TITLE	LEVEL	CREDIT
Core	117925	Describe the concepts of Information and Communication Technology (ICT) and the use of its components in a healthy and safe manner	Level 2	3
Core	116935	Enhance, edit and organise electronic messages using a Graphical User Interface (GUI)-based messaging application	Level 2	2
Core	117923	Use a Graphical User Interface (GUI)-based presentation application to prepare and produce a presentation according to a given brief	Level 2	5
Core	116937	Use a Graphical User Interface (GUI)-based spreadsheet application to create and edit spreadsheets	Level 2	4
Core	116931	Use a Graphical User Interface (GUI)-based web-browser to search the Internet	Level 2	4
Core	117924	Use a Graphical User Interface (GUI)-based word processor to format documents	Level 2	5
Core	116945	Use electronic mail to send and receive messages	Level 2	2

Core	116936	Use a Graphical User Interface (GUI)-based database application to work with simple databases	Level 3	3
Core	116930	Use a Graphical User Interface (GUI)-based presentation application to enhance presentation appearance	Level 3	5
Core	116940	Use a Graphical User Interface (GUI)-based spreadsheet application to solve a given problem	Level 3	6
Core	116942	Use a GUI-based word processor to create merged documents	Level 3	3
Core	119078	Use a GUI-based word processor to enhance a document through the use of tables and columns	Level 3	5
Core	115391	Demonstrate an understanding of the principles of the internet and the world-wide-web	Level 4	3
Core	114076	Use computer technology to research a computer topic	Level 4	3
Core	116943	Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet	Level 4	3

	ID	UNIT STANDARD TITLE	LEVEL	CREDIT
Elective	114636	Demonstrate an understanding of preventative maintenance, environmental and safety issues in a computer environment	Level 3	6
Elective	14947	Describe data communications	Level 3	4
Elective	14918	Describe the principles of Computer Programming	Level 3	5
Elective	14913	Explain the principles of computer networks	Level 3	5
Elective	7785	Function in a business environment	Level 3	4
Elective	14912	Investigate the use of computer technology in an organisation	Level 3	6
Elective	13931	Monitor and control the maintenance of office equipment	Level 3	4
Elective	10140	Apply a range of project management tools	Level 4	8
Elective	117928	Describe the application and effect of Information and Communication Technologies (ICT) on society	Level 4	5
Elective	14917	Explain computer architecture concepts	Level 4	7
Elective	10139	Implement project administration processes according to requirements	Level 4	5
Elective	117156	Interpret basic financial statements	Level 4	4
Elective	117927	Use a Graphical User Interface (GUI)-based database application to solve a given problem	Level 4	6
Elective	10135	Work as a project team member	Level 4	8
Elective	117926	Identify and explain ICT risks and recommend security solutions	Level 5	5

Addendum B: The CCFO Workshop Layout and Planning

Introduction

This section documents the design and methodology that were followed during the Critical Cross-Field Outcomes Workshop as part of the empirical research that was conducted during the study.

Rationale

Even though there is no prescription for the implementation of the Critical Cross-Field Outcomes, SAQA requires the SGBs and SETAs to incorporate the Critical Cross-Field Outcomes in the unit standards and qualifications. “There is no prescription in any of the SAQA regulations or requirements of how these outcomes (Critical Cross-Field Outcomes) are to be incorporated and developed” (NQF and Curriculum Development, 2000:20), and “It is agreed that these outcomes are inadequately addressed at present” (SAQA inter-NSB comments on the NQF study team report, July 2002).

It is standard procedure for learning programme designers and proposers to ensure the incorporation and accommodation of the Critical Cross-Field Outcomes in qualifications and unit standards by listing the Critical Cross-Field Outcomes under the sub-heading, *Notes*, of the qualification or standard and provide an indication of how and where the Critical Cross-Field Outcomes are addressed. See addendum F. This, however, does not ensure that the Critical Cross-Field Outcomes are understood, incorporated in curriculum design, learning materials or transferred by the learner in such a way that it contribute to the full development of the individual and society at large.

The objective of this CCFO workshop is to define the CCFOs in terms of the underpinning competencies. These identified underpinning competencies serve as evidence that the learner has the capabilities underwritten by the CCFO.

The outcome is a list of competencies per CCFO statement that the facilitator, proposer of qualifications, service providers and ETQA managers can use to incorporate the CCFOs in the training and development initiatives. These competencies also serves as the starting point for the outcomes based principle of designing back. This competencies list can also be utilised as a benchmark for conducting competencies audits on the CCFOs. These competencies are to be implement at all levels of the NQF in all the fields as identified by SAQA.

Critical Cross-Field Outcomes Workshop design and implementation

Outcomes-Based Education and Training, according to Ernst (2003:4), refers to learning interventions that have been designed to teach learners how to accomplish end-results for which they are or will be employed and paid to achieve. Competencies, knowledge and attitudes relate to the performance of a particular competency. The objective of outcomes-based education is to empower learners to fit into society at large, to think critically and to meet the needs set within the world of work (Olivier 2002:10).

Outcomes-Based Education means organising the educational process to obtain the desired results and allowing students to demonstrate the achievement as a means of evaluation (Spady, 1994; III).

The NQF's alignment then with outcomes-based education is at the systems organisation level. The NQF philosophy however does give a lead to curriculum change. It indicates that decision in respect of learning programme design, development, delivery and assessment need to consider constantly the learning outcomes that learners need to demonstrate (SAQA position paper, 2001; 17).

Outcomes-based learning is a *standard-based* way of learning (Olivier, 2002; 4). Standards are set prior to learning and serve as basis for learning. According to Olivier (2002:4) to achieve these standards learners need to engage in self-managed learning. Outcomes-Based Education is about mastering certain outcomes.

Critical Cross-Field Outcomes serve as standards or outcomes and the intention is to design back in order to define and develop these outcomes.

The new curriculum, according to Manganyi (Curriculum 2005, 2), is based on the principles of co-operation, critical thinking and social responsibility and should empower individuals to participate in all aspects of society.

Objective of the Critical Cross-Field Outcomes (CCFO) workshop

The objective of this workshop is to define the Critical Cross-Field Outcomes as perceived by the ETQA managers. These outcomes are defined in order to identify the underpinning competencies of the Critical Cross-Field Outcomes and to determine the ETQAs level of understanding of the CCFO. The theoretical grounding of the CCFOs as identified in chapter 3 are verified by the ETQAs during the workshop.

Ground rules for conducting the Critical Cross-Field Outcomes (CCFO) workshop

Inform all participants of the objective and intention of the workshop prior to conducting it
All participants participate equally
All statements must be worded exactly as prescribed (verbatim)
All decisions must be based on consensus and not on voting or other means
Only one speaker at a time
Respect differences of opinion (diversity)
The person facilitating the workshop will be known as the moderator and not facilitator (more structured discussion than facilitation)

Planning and preparing for the workshop

The success of any workshop depends on proper planning and preparation. The following serves as guidelines for the preparation phase of the workshop:

Choice and layout t of the venue

The CCFO workshop is conducted in a large enough room to allow available space for the activities that will take place. Participants must not feel crowded.

Have water available on the tables, as the duration of the session is not easily determined.

Stationery, flipcharts and index cards must be prepared in advance. Have PRESTIK available to stick the index cards on the wall.

Appointment of the CCFO workshop participants

Knowledgeable practitioners, according to Ernst (2003:34), can describe their occupation or subject matter better than anyone else. The target population for this research is the ETQA managers and stakeholders who have done research on the CCFOs; it is assumed that these individuals are the experts in terms of the CCFO as it is their role as ETQA managers to ensure that the CCFOs are incorporated in qualifications and training material.

Only competent and experienced participates must be appointed. It is important to select knowledgeable persons who are familiar with the content, competencies and competencies of the CCFOs.

Participants are phoned to inform them about the objective of the workshop and discuss their availability and willingness to participate before sending them an invitation for the workshop.

A combination of the following persons is suggested by the OCACA meeting:

Achieving employees who are presently employed in the Education, training and development Quality Assuring positions
Employees who were previously successfully employed in the occupation of Education, training and development Quality Assurance
Supervisors who are presently managing subordinates who are employed in the occupation of Education, training and development Quality Assurance
Stakeholders involved in the ETQA function of the SETA

The participants are requested to draft their own description of the underpinning competencies of the Critical Cross-Field Outcomes. These documents must accompany the participants to the CCFO workshop.

Meeting date
The meeting date is arranged well in advance. This ensures that all the participants can plan and schedule their diaries accordingly. It also allows enough preparation time for the participants to complete the desired documentation mentioned above.

Invitation letter
The invitation letter clearly communicates the following:
The objective of the workshop
Reason for having the workshop
Details of venue, time and date
Instruction for drafting a concept document of the CCFOs

The invitation letter is accompanied by a document providing the motivation and background of the CCFO workshop.

Following is the format of the invitation and the motivation letter.

Invitation letter:

M e m o r a n d u m	
From:	Debbie Smith 082 887 1124
Date:	27 August 2004
Subject:	CCFO Workshop
As telephonically discussed, you are hereby officially invited to participate in the CCFO workshop.	
Objective:	The objective of this workshop is to define the Critical Cross-Field Outcomes (CCFOs). The intention is to identify the underpinning competencies/competencies of the CCFOs.
Date:	16 September 2004
Time:	9:00 – 16:00
Venue:	Country Rendezvous, Olifantsfontein
Participants:	The target population is the ETQA managers from the respective SETAs (see distribution list). Should there be any stakeholders not included that could provide constructive input let me know of such a body or person so that the necessary arrangements can be made to include them. If you have any queries with regards to the inclusion or exclusion of participants, please feel free to contact me to discuss your concerns.
Preparation:	Please prepare documentation regarding your understanding on the concept of the Critical Cross-Field Outcomes. These documents must accompany you to the CCFO

	workshop.
Important:	Attachments: Directions to the venue will be provided on confirmation.
RSVP date:	Only telephonic reservation will be accepted. 082 887 1124
Your willingness to participate is highly appreciated. Regards, Debbie Smith	

Motivation Letter:

Introduction

This document serves as a motivation for the above-mentioned workshop and provides background to the initiative.

Rationale

Critical Cross-Field Outcomes are one of the transformational tools utilised by the South African Qualifications Authority (SAQA) to ensure access, portability and lifelong learning. Critical Cross-Field Outcomes express the intended results of education and training and underpin all learning processes, thus enhancing the learning process and contributing to the full development of an individual.

Critical Cross-Field Outcomes are generic and cross-curricular, they are not restricted to any specific learning context, but inform the formulation of specific outcomes in the individual areas of learning for all learners at all levels on the NQF. Critical Cross-Field Outcomes should direct teaching, training and education practices, as well as the development of learning programmes and materials.

Critical Cross-Field Outcomes are also referred to as personal, thinking and life competencies that are the abilities that people need to be active, responsible and successful members of society. They provide the means to build a career and make the person more effective in executing a job. Critical Cross-Field Outcomes are often referred to as soft competencies and should be developed during learning processes so that learners are able to use them when achieving work-related outcomes.

Knowledge is of little value if it cannot be utilised in new situations or in a form very different from that in which it was originally encountered. Although knowledge is a necessary condition, it is not a sufficient condition for becoming an expert. What is needed is some evidence that the students can do something with their knowledge, that is that they can apply the information to new situations and problems. The CCFOs are tools that the learner or facilitator can utilise to access knowledge and to develop new

knowledge of purposeful objectives. The CCFOs are the competencies that could determine workplace readiness and are the so-called soft competencies a person needs to execute a job effectively.

Objective of workshop

The objective of this CCFO workshop is to define the CCFOs in terms of their underpinning competencies. These identified underpinning competencies serve as evidence that the learner has the capabilities underwritten by the CCFO.

Outcomes and Benefits for participants

The outcome is a list of competencies per CCFO statement that the facilitator, proposer of qualifications, service providers and ETQA managers can use to incorporate the CCFOs in the training and development initiatives. These competencies also serves as the starting point for the outcomes based principle of designing back. This competencies list can also be utilised as a benchmark for conducting competencies audits on the CCFOs. These competencies are to be implemented at all levels of the NQF in all the fields as identified by SAQA.

Purpose of the research

This workshop forms part of my empirical research for my doctorate in Curriculum Design at the University of Pretoria, Faculty Education. The purpose of this research is to report a concept analysis of the Critical Cross-Field Outcomes (CCFO) within the context of the Education, Training and Development environment of the South African Qualifications Authority (SAQA) and the National Qualifications Framework (NQF).

The workshop is not compulsory for you as participant but your input are of utmost importance as you are key role players in the success of the CCFOs. Do invite your SGB members or service providers that you feel will benefit from this initiative. Please keep in mind that only 27 seats are available.

Thank you for your time, effort and cooperation in this regard.

Please contact me if need be.

Kind regards,

Debbie Smith

Equipment and stationery requirements for the CCFO Workshop

The following equipment is needed:

Flipchart stand for presenting the flipcharts and for recording the discussion

Index cards for capturing the discussion

PRESTIK or masking tape for sticking the index cards to the wall

Flipchart paper

Whiteboard markers (two colours)

Nametags for participants

Concept Questionnaires

Feedback Questionnaires

FLIPCHART #1

OBJECTIVE OF

WORKSHOP IS TO:

Define the CCFO

Not to determine theoretical perspectives

Not to prescribe

FLIPCHART #2

GROUND RULES

Participate equally

All statements worded verbatim

Decisions based on consensus

FLIPCHART #3

PROCEDURE

Clarify the roles

Background to CCFO

Questionnaires to be completed by participants

Brainstorming the concept of

FLIPCHART #6

CRITICAL CROSS-FIELD OUTCOMES

- Generic competencies
- Describe the qualities NQF wishes to develop in learners
- Critical for the development of lifelong learning
- Is of transforming nature

FLIPCHART #4

CRITICAL CROSS-FIELD OUTCOMES AS PRESCRIBED BY SAQA

Identify and solve problems using critical and creative thinking
Work effectively with others as a member of a team, group or organisation
Organise and manage oneself and one's activities responsibly and effectively
Collect, analyse, organise and critically evaluate information
Communicate effectively using visual, mathematical and or language presentation
Using science and technology effectively

FLIPCHART #5

DEVELOPMENTAL OUTCOMES

Full development of each learner and the social and economic development of society at large:

Explore a variety of strategies to learn effectively
Participate as responsible citizen

Procedure for conducting the CCFO Workshop

The procedure that is followed during the CCFO Workshop follows:

Introductory talk

The purpose of the introductory talk is to familiarise the participants with the proceedings and discussions of the day.

Welcome the participants and thank them for their time and willingness to participate.

Explain the objective of the workshop by referring to Flipchart #1.

FLIPCHART #1

OBJECTIVE OF WORKSHOP IS TO:

Define the CCFO

Not to determine theoretical perspectives

Emphases that the objective is:

not to allocate a theoretical grounding,
not to determine the levels of the CCFOs
not to establish assessment methods and methodologies for the CCFOs

In order to ensure a fluent and successful workshop the ground rules need to be explained in detail. Refer to Flipchart #2. Ask the participants if they want to add any rules to the current list and remind them that once this list has been finalised, they will have to adhere to it.

FLIPCHART #2

GROUND RULES

Participate equally

All statements worded verbatim

Decisions based on consensus

One speaker at a time

Flipchart #3 provides guidance to the procedure to be followed during the CCFO Workshop. Read with the participants through the Flipchart so that they know what is expected by when.

FLIPCHART #3

PROCEDURE

Clarify the roles

Background to CCFO

Questionnaires to be completed by participants

Brainstorm the concept of CCFO

It is of the utmost importance that the roles be clarified. The researcher's (moderator) role is to guide the participants as a group to a cumulative understanding of the concept of Critical Cross-Field Outcomes and to define these outcomes. The researcher is not allowed to explain the concept. The researcher may probe the candidates to understanding and reaching consensus on a specific topic. The participants are the experts and are invited in such a capacity to the workshop. It is therefore their responsibility to define the Critical Cross-Field Outcomes.

Hand out the concept questionnaires and request the participants to complete the forms. It is important to have the concept questionnaires completed before the analysis of the CCFOs so that fellow participants do not influence one another's initial perception of the CCFO. The analysis of the Critical Cross-Field Outcomes, which is the very next step, will construct a collective perspective on the concept of Critical Cross-Field Outcomes.

A collective discussion of the findings of the Concept Questionnaire follows.

Each participant was able to name at least 3 CCFO statements. CCFOs were described as an NQF objective to develop a whole person in context and it was stated that the CCFOs form a basis on which to build all other competencies. It was also stated that all training material had to be aligned to the CCFOs as part of OBE.

CCFOs are referred to as part of general life competencies, consistent in all qualifications and to aid training in a holistic context. Learners need competencies such as the CCFOs to interact with work environment and CCFOs are other than technical competencies; soft-competencies. They serve as the underpinning knowledge required in order to be in a position to embark on any field of study. CCFOs are part of the qualification format and contextualised in each qualification. Policy documents stipulate that all training should be based on CCFOs and should serve as a starting point for all learning. CCFOs are referred to as factors that aid a learner to absorb the training in a more meaningful way, soft-competencies, developing self, independent thinking and in line with OBE.

Contradiction occurred in the question on what guidelines are provided in terms of the implementation of Critical Cross-Field Outcomes. Some participants were of the opinion that guidelines are available in how to integrate the CCFOs in training and assessment,

on the other hand some stated that guidelines are sometimes vague. Possible barriers in conceptualising the Critical Cross-Field Outcomes were identified as the following:

A lack of knowledge as to what the CFFOs are
A lack of competent people to teach and implement the CCFOs
No clarified definition of what underlying competencies are embedded in the CCFOs
No commitment from stakeholders
No training refund
No consistency in interpretation as perceived from trainers, assessors and employers.

Participants viewed best practice for the CCFOs as embedded in technical competency training and ensuring that all qualifications are aligned to them.

After completion of the Concept Questionnaire the CCFOs are analysed.

The researcher provides a short background of the Critical Cross-Field Outcomes using Flipchart # 4, 5 and 6.

FLIPCHART #4

CRITICAL CROSS-FIELD OUTCOMES AS PRESCRIBED BY SAQA

Identify and solve problems using critical and creative thinking

Work effectively with others as a member of a team, group or organisation

Organise and manage oneself and one's activities responsible and effectively

Collect, analyse, organise and critically evaluating information

Communicate effectively using visual, mathematical and or language presentation

Using science and technology effectively

FLIPCHART #5

DEVELOPMENTAL OUTCOMES

Full development of each learner and the social and economic development of the society at large:

Explore a variety of strategies to learn effectively

FLIPCHART #6

CRITICAL CROSS-FIELD OUTCOMES

- Generic competencies
- Describe the qualities NQF wishes to develop in learners
- Critical for the development of lifelong learning
- Is of transforming nature
- Cross-Curricular

After completing the background leave Flipchart # 5 and 6 visible for the participants so that they can refer to the Critical Cross-Field Outcomes.

Analyse the Critical Cross-Field Outcomes

Each Critical Cross-Field Outcome is now analysed individually. Ask the participants to identify all the key words in the statements working though the outcomes one by one. Use the clean flipcharts and markers for this exercise. Ensure that each outcome is analysed on individual flipcharts. Stick the flipcharts on the wall so that all will be visible to the participants.

After the participants have indicated their understanding of the CCFOs per statement, the theoretically grounded competencies of the CCFOs as identified in chapter 3, are validated by means of discussion and consensus.

Use the following moderating process to identify the underpinning competencies:

Ask for a nomination
Judge if the nomination made refers to CCFO statement under discussion
Get consensus that the nomination is acceptable
Write the statement on the index card
Post the index card to the wall

Identify underpinning competencies for each of the Critical Cross-Field Outcomes.
Ensure that each statement is identified and defined before analysing the next.

Coffee and lunch breaks were allocated as and when needed.

Participants perceived the invitation letter as good preparation to them for the workshop and stated that they knew what to expect. Learning in the right context is crucial. The need for the workshop was evident in that the CCFO statements are so broad and guidelines and standards are vague; some consensus must be reached to implement the CCFOs in future training. The workshop, according to the participants, assisted greatly in getting to understand the terminology and using it in the correct context.
Participants experienced the workshop as well prepared and structured and were of opinion that relevant role players benefited immensely. The workshop addressed their expectations in that it contributed to *a great understanding towards the concept of CCFOs*. The contribution of all participants was equal and all participated in identifying the key words relevant to each CCFO statement. The workshop contributed to enlighten the concept of Critical Cross-Field Outcomes and help clarify the context in which each CCFO should be viewed and interpreted that resulted in a much better understanding of the concept. The participants were of opinion that the content and presentation of the workshop were excellent and very relevant; the presentation of the workshop was well co-ordinated and professional. The flipcharts assisted the participants in participating in the workshop, and explained many aspects and very useful in terms of reviews/recapping. The beneficiaries of this workshop in terms of the Education, training and development practice are especially SAQA and the SETAs, which utilise these CCFOs and associated terminology.

Addendum C: Questionnaires

RESEARCH QUESTIONNAIRE ON CRITICAL CROSS-FIELD OUTCOMES

You are about to complete a questionnaire for the purpose of research on the concept of ***Critical Cross-Field Outcomes***.

There are **no right or wrong** answers please take time to work thoroughly through this questionnaire carefully.

Your answers will be handled with ***great confidentiality***.

Thank you for your time and effort spent on this questionnaire.

Questions 6 to **17** each contain a statement of a

CROSS-FIELD OUTCOME.

You are asked to **order** the accompanying

FUNCTIONAL SKILLS

as follows:

Statement of a **CROSS-FIELD OUTCOME**.

Order the following from 1 to 7 in the column headed R	**R**
Functional skill **a**	**4**
Functional skill **b**	**2**
Functional skill **c**	**5**
Functional skill **d**	**1**
Functional skill **e**	**3**
Functional skill **f**	**7**
Functional skill **g**	**6**

This example indicates that the **Functional skills a** to **g** after consideration are to be done FIRST - Skill **d**, SECOND - Skill **b**, THIRD - Skill **e** etc. etc. and SEVENTH - Skill **f** for the **Cross-field Outcome** as stated.

Note that an **order (R)** is **not repeated** and only occurs once.

RESEARCH QUESTIONNAIRE ON CRITICAL CROSS-FIELD OUTCOMES

You are about to complete a questionnaire for the purpose of research on the concept of ***Critical Cross-Field Outcomes***.

There are **no right or wrong** answers please take time to work thoroughly through this questionnaire carefully.

Your answers will be handled with ***great confidentiality***.

Thank you for your time and effort spent on this questionnaire.

Questions 6 to **17** each contain a statement of a

CROSS-FIELD OUTCOME.

You are asked to **order** the accompanying

INVESTIGATIVE SKILLS

as follows:

Statement of a **CROSS-FIELD OUTCOME**.

Order the following from 1 to 7 in the column headed R	**R**
Investigative skill **a**	**4**
Investigative skill **b**	**2**
Investigative skill **c**	**5**
Investigative skill **d**	**1**
Investigative skill **e**	**3**
Investigative skill **f**	**7**
Investigative skill **g**	**6**

This example indicates that the **Investigative skills a** to **g** after consideration are to be done FIRST - Skill **d**, SECOND - Skill **b**, THIRD -Skill **e** etc. etc. and SEVENTH - Skill **f** for the **Cross-field Outcome** as stated.

Note that an **order (R)** is **not repeated** and only occurs once.

For Office Use

Respondent number V1 [ ][ ] 1
Questionnaire V2 [2] 3

Please answer the questions by drawing a circle (O) around a number in a shaded box

1. Do you posses an ETDP qualification?

Yes	**1**	V3 [ ] 4
No	**2**	

2. Where did you obtain this qualification? Indicate the appropriate one.

University	**1**	V4 [ ] 5
Technikon	**2**	
Technical college	**3**	
Private training provider/centre	**4**	
RPL	**5**	
Compilation of short courses	**6**	

3. Which environment do you work in? Indicate the appropriate one.

Higher Education and Training Institution	**1**	V5 [ ] 6
Further Education and Training Institution	**2**	
General Education and Training Institution	**3**	
SETA, ETQA etc	**4**	
Industry training service provider	**5**	
SAQA	**6**	

4. What level in an organization do you find your self in?

Management level	**1**	V6 [ ] 7
Trainer/ Facilitator/Lecturer	**2**	

5. How did you become aware of the Critical Cross-Field Outcomes?

SAQA	**1**	V7 [ ] 8
SGB	**2**	
Training programme	**3**	
Word of mouth	**4**	

For Office Use

Investigative skills represent analytical abilities.

6. The ability to identify and solve problems, in which responses display that responsible decisions using critical and creative thinking has been made, entails the following ***investigative skills in the order indicated***:

Order the following from 1 to 10 in the column headed R	R				
Separate important from unimportant information		V8			9
Identify obstructions preventing the reaching of goals		V9			11
Sequence operations		V10			13
Predict results		V11			15
Order information or processes categorically		V12			17
Make fine distinctions		V13			19
Critique thoughts, feelings and behaviour		V14			21
Estimate results and or behaviour		V15			23
Justify the merits and applicability of thoughts, feelings and behaviour		V16			25
Assimilate / integrate information in order to adapt or adjust thoughts, feelings and behaviour		V17			27

7. The ability to work effectively with others as a member of a team, group, organisation or community, entails the following ***investigative skills in the order indicated***:

Order the following from 1 to 9 in the column headed R	R			
Separate important from unimportant information		V18		29
Identify obstructions preventing the reaching of goals		V19		30
Sequence operations		V20		31
Predict results		V21		32
Order information or processes categorically		V22		33
Make fine distinctions		V23		34
Critique thoughts, feelings and behaviour		V24		35
Justify the merits and applicability of thoughts, feelings and behaviour		V25		36
Assimilate / integrate information in order to adapt or adjust thoughts, feelings and behaviour		V26		37

8. The ability to organise and manage oneself and one's activities responsibly and effectively, entails the following ***investigative skills in the order indicated***:

Order the following from 1 to 7 in the column headed R	R			
Separate important from unimportant information		V27		38
Identify obstructions preventing the reaching of goals		V28		39
Predict results		V29		40
Order information or processes categorically		V30		41
Make fine distinctions		V31		42
Critique thoughts, feelings and behaviour		V32		43
Assimilate / integrate information in order to adapt or adjust thoughts, feelings and behaviour		V33		44

For Office Use

9. The ability to collect, analyse, organise and critically evaluate information, entails the following ***investigative skills in the order indicated***:

Order the following from 1 to 10 in the column headed R	R				
Separate important from unimportant information		V34			45
Identify obstructions preventing the reaching of goals		V35			47
Sequence operations		V36			49
Predict results		V37			51
Order information or processes categorically		V38			53
Make fine distinctions		V39			55
Critique thoughts, feelings and behaviour		V40			57
Estimate results and or behaviour		V41			59
Justify the merits and applicability of thoughts, feelings and behaviour		V42			61
Assimilate / integrate information in order to adapt or adjust thoughts, feelings and behaviour		V43			63

10. The ability to communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation entails the following ***investigative skills in the order indicated***:

Order the following from 1 to 9 in the column headed R	R			
Separate important from unimportant information		V44		65
Identify obstructions preventing the reaching of goals		V45		66
Sequence operations		V46		67
Predict results		V47		68
Order information or processes categorically		V48		69
Make fine distinctions		V49		70
Critique thoughts, feelings and behaviour		V50		71
Justify the merits and applicability of thoughts, feelings and behaviour		V51		72
Assimilate / integrate information in order to adapt or adjust thoughts, feelings and behaviour		V52		73

11. The ability to use science and technology effectively and critically showing responsibility towards the environment and health of others, entails the following ***investigative skills in the order indicated***:

Order the following from 1 to 11 in the column headed R	R				
Apply technology in a responsible manner		V53			74
Separate important from unimportant information		V54			76
Identify obstructions preventing the reaching of goals		V55			78
Sequence operations		V56			80
Predict results		V57			82
Order information or processes categorically		V58			84
Make fine distinctions		V59			86
Critique thoughts, feelings and behaviour		V60			88
Estimate results and or behaviour		V61			89
Justify the merits and applicability of thoughts, feelings and behaviour		V62			91
Assimilate / integrate information in order to adapt or adjust thoughts, feelings and behaviour		V63			93

For Office Use

12. The ability to demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation, entails the following ***investigative skills in the order indicated***:

Order the following from 1 to 9 in the column headed R	R				
Systematically compare alternatives		V64		95
Separate important from unimportant information		V65		96
Sequence operations		V66		97
Predict results		V67		98
Order information or processes categorically		V68		99
Make fine distinctions		V69		100
Critique thoughts, feelings and behaviour		V70		101
Justify the merits and applicability of thoughts, feelings and behaviour		V71		102
Assimilate / integrate information in order to adapt or adjust thoughts, feelings and behaviour		V72		103

13. The ability to reflect on and explore a variety of strategies to learn more effectively, entails the following ***investigative skills in the order indicated***:

Order the following from 1 to 9 in the column headed R	R				
Systematically compare alternatives		V73		104
Identify obstructions preventing the reaching of goals		V74		105
Sequence operations		V75		106
Predict results		V76		107
Order information or processes categorically		V77		108
Make fine distinctions		V78		109
Critique thoughts, feelings and behaviour		V79		110
Justify the merits and applicability of thoughts, feelings and behaviour		V80		111
Assimilate / integrate information in order to adapt or adjust thoughts, feelings and behaviour		V81		112

14. The ability to participate as responsible citizens in the life of local, national and global communities, entails the following ***investigative skills in the order indicated***:

Order the following from 1 to 5 in the column headed R	R				
Separate important from unimportant information		V82		113
Identify obstructions preventing the reaching of goals		V83		114
Order information or processes categorically		V84		115
Make fine distinctions		V85		116
Justify the merits and applicability of thoughts, feelings and behaviour		V86		117

For Office Use

15. The ability to be culturally and aesthetically sensitive across a range of social contexts, entails the following ***investigative skills in the order indicated***:

Order the following from 1 to 9 in the column headed R	R				
Separate important from unimportant information		V87		118
Identify obstructions preventing the reaching of goals		V88		119
Sequence operations		V89		120
Predict results		V90		121
Order information or processes categorically		V91		122
Make fine distinctions		V92		123
Critique thoughts, feelings and behaviour		V93		124
Justify the merits and applicability of thoughts, feelings and behaviour		V94		125
Assimilate / integrate information in order to adapt or adjust thoughts, feelings and behaviour		V95		126

16. The ability to explore education and career opportunities, entails the following ***investigative skills in the order indicated***:

Order the following from 1 to 9 in the column headed R	R				
Separate important from unimportant information		V96		127
Identify obstructions preventing the reaching of goals		V97		128
Sequence operations		V98		129
Predict results		V99		130
Order information or processes categorically		V100		131
Make fine distinctions		V101		132
Critique thoughts, feelings and behaviour		V102		133
Justify the merits and applicability of thoughts, feelings and behaviour		V103		134
Assimilate / integrate information in order to adapt or adjust thoughts, feelings and behaviour		V104		135

17. The ability to develop entrepreneurial opportunities, entails the following ***investigative skills in the order indicated***:

Order the following from 1 to 9 in the column headed R	R				
Separate important from unimportant information		V105		136
Identify obstructions preventing the reaching of goals		V106		137
Sequence operations		V107		138
Predict results		V108		139
Order information or processes categorically		V109		140
Make fine distinctions		V110		141
Critique thoughts, feelings and behaviour		V111		142
Justify the merits and applicability of thoughts, feelings and behaviour		V112		143
Assimilate / integrate information in order to adapt or adjust thoughts, feelings and behaviour		V113		144

Thank you for your time and participation

For Office Use

Respondent number V1 [ ][ ] 1
Questionnaire V2 [1] 3

Please answer the questions by drawing a circle (O) around a number in a shaded box

1. Do you posses an ETDP qualification?

Yes	**1**	V3 [ ] 4
No	**2**	

2. Where did you obtain this qualification? Indicate the appropriate one.

University	**1**	V4 [ ] 5
Technikon	**2**	
Technical college	**3**	
Private training provider/centre	**4**	
RPL	**5**	
Compilation of short courses	**6**	

3. Which environment do you work in? Indicate the appropriate one.

Higher Education and Training Institution	**1**	V5 [ ] 6
Further Education and Training Institution	**2**	
General Education and Training Institution	**3**	
SETA, ETQA etc	**4**	
Industry training service provider	**5**	
SAQA	**6**	

4. What level in an organization do you find your self in?

Management level	**1**	V6 [ ] 7
Trainer/ Facilitator/Lecturer	**2**	

5. How did you become aware of the Critical Cross-Field Outcomes?

SAQA	**1**	V7 [ ] 8
SGB	**2**	
Training programme	**3**	
Word of mouth	**4**	

For Office Use

Functional skills represent comprehension and relate to the practical skills.

6. The ability to identify and solve problems, in which responses display that responsible decisions using critical and creative thinking have been made, entails the following ***functional skills in the order indicated***:

Order the following from 1 to 7 in the column headed R	R				
Handle multiple demands in confronting situations		V8		9
Communicate facts, thoughts and feelings		V9		10
Systematically shape and re-shape of elements referring to sequence		V10		11
Enlighten by offering clear explanations and descriptions		V11		12
Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others		V12		13
Recognise varying contributing elements and concepts at hand		V13		14
Reflect own estimation of elements or concepts at hand		V14		15

7. The ability to work effectively with others as a member of a team, group, organisation or community requires the following ***functional skills in the order indicated***:

Order the following from 1 to 6 in the column headed R	R				
Communicate facts, thoughts and feelings		V15		16
Systematically shape and re-shape of elements referring to sequence		V16		17
Enlighten by offering clear explanations and descriptions		V17		18
Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others		V18		19
Recognise varying contributing elements and concepts at hand		V19		20
Reflect own estimation of elements or concepts at hand		V20		21

8. The ability to organise and manage oneself and one's activities responsibly and effectively, requires the following ***functional skills in the order indicated***:

Order the following from 1 to 5 in the column headed R	R				
Communicate facts, thoughts and feelings		V21		22
Enlighten by offering clear explanations and descriptions		V22		23
Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others		V23		24
Recognise varying contributing elements and concepts at hand		V24		25
Reflect own estimation of elements or concepts at hand		V25		26

For Office Use

9. The ability to collect, analyse, organise and critically evaluate information, requires the following ***functional skills in the order indicated***:

Order the following from 1 to 7 in the column headed R	R				
Handle multiple demands in confronting situations		V26		27
Communicate facts, thoughts and feelings		V27		28
Systematically shape and re-shape of elements referring to sequence		V28		29
Enlighten by offering clear explanations and descriptions		V29		30
Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others		V30		31
Recognise varying contributing elements and concepts at hand		V31		32
Reflect own estimation of elements or concepts at hand		V32		33

10. The ability to communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation, requires the following ***functional skills in the order indicated***:

Order the following from 1 to 6 in the column headed R	R				
Communicate facts, thoughts and feelings		V33		34
Systematically shape and re-shape of elements referring to sequence		V34		35
Enlighten by offering clear explanations and descriptions		V35		36
Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others		V36		37
Recognise varying contributing elements and concepts at hand		V37		38
Reflect own estimation of elements or concepts at hand		V38		39

11. The ability to use science and technology effectively and critically showing responsibility towards the environment and health of others, requires the following ***functional skills in the order indicated***:

Order the following from 1 to 8 in the column headed R	R				
Combine physical and sensory skills needed to operate equipment with the understanding of scientific and technological principles		V39		40
Handle multiple demands in confronting situations		V40		41
Communicate facts, thoughts and feelings		V41		42
Systematically shape and re-shape of elements referring to sequence		V42		43
Enlighten by offering clear explanations and descriptions		V43		44
Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others		V44		45
Recognise varying contributing elements and concepts at hand		V45		46
Reflect own estimation of elements or concepts at hand		V46		47

For Office Use

12. The ability to demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation, requires the following ***functional skills in the order indicated***:

Order the following from 1 to 6 in the column headed R	R				
Communicate facts, thoughts and feelings		V47		48
Systematically shape and re-shape of elements referring to sequence		V48		49
Enlighten by offering clear explanations and descriptions		V49		50
Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others		V50		51
Recognise varying contributing elements and concepts at hand		V51		52
Reflect own estimation of elements or concepts at hand		V52		53

13. The ability to reflect on and explore a variety of strategies to learn more effectively requires the following ***functional skills in the order indicated***:

Order the following from 1 to 6 in the column headed R	R				
Communicate facts, thoughts and feelings		V53		54
Systematically shape and re-shape of elements referring to sequence		V54		55
Enlighten by offering clear explanations and descriptions		V55		56
Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others		V56		57
Recognise varying contributing elements and concepts at hand		V57		58
Reflect own estimation of elements or concepts at hand		V58		59

14. The ability to participate as responsible citizens in the life of local, national and global communities, requires the following ***functional skills in the order indicated***:

Order the following from 1 to 6 in the column headed R	R				
Communicate facts, thoughts and feelings		V59		60
Systematically shape and re-shape of elements referring to sequence		V60		61
Enlighten by offering clear explanations and descriptions		V61		62
Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others		V62		63
Recognise varying contributing elements and concepts at hand		V63		64
Reflect own estimation of elements or concepts at hand		V64		65

15. The ability to be culturally and aesthetically sensitive across a range of social contexts, requires the following ***functional skills in the order indicated***:

Order the following from 1 to 6 in the column headed R	R				
Communicate facts, thoughts and feelings		V65		66
Systematically shape and re-shape of elements referring to sequence		V66		67
Enlighten by offering clear explanations and descriptions		V67		68
Be acquainted with concept/element at hand in order to identify, distinguish and differentiate it amongst others		V68		69
Recognise varying contributing elements and concepts at hand		V69		70
Reflect own estimation of elements or concepts at hand		V70		71

For Office Use

16. The ability to explore education and career opportunities, requires the following ***functional skills in the order indicated***:

Order the following from 1 to 5 in the column headed R	R				
Communicate facts, thoughts and feelings		V71		72
Systematically shape and re-shape of elements referring to sequence		V72		73
Enlighten by offering clear explanations and descriptions		V73		74
Recognise varying contributing elements and concepts at hand		V74		75
Reflect own estimation of elements or concepts at hand		V75		76

17. The ability to develop entrepreneurial opportunities, requires the following ***functional skills in the order indicated***:

Order the following from 1 to 5 in the column headed R	R				
Communicate facts, thoughts and feelings		V76		77
Systematically shape and re-shape of elements referring to sequence		V77		78
Enlighten by offering clear explanations and descriptions		V78		79
Recognise varying contributing elements and concepts at hand		V79		80
Reflect own estimation of elements or concepts at hand		V80		81

Thank you for your time and co-operation

RESEARCH QUESTIONNAIRE ON CRITICAL CROSS-FIELD OUTCOMES

You are about to complete a questionnaire for the purpose of research on the concept of ***Critical Cross-Field Outcomes***.

There are **no right or wrong** answers please take time to work thoroughly through this questionnaire carefully.

Your answers will be handled with ***great confidentiality***.

Thank you for your time and effort spent on this questionnaire.

Questions 6 to **17** each contain a statement of a

CROSS-FIELD OUTCOME.

You are asked to **order** the accompanying

RELATIONSHIP MANAGEMENT SKILLS

as follows:

Statement of a **CROSS-FIELD OUTCOME**.

Order the following from 1 to 7 in the column headed R	**R**
Relationship Management skill **a**	**4**
Relationship Management skill **b**	**2**
Relationship Management skill **c**	**5**
Relationship Management skill **d**	**1**
Relationship Management skill **e**	**3**
Relationship Management skill **f**	**7**
Relationship Management skill **g**	**6**

This example indicates that the **Relationship Management skills a** to **g** after consideration are to be done FIRST - Skill **d**, SECOND - Skill **b**, THIRD -Skill **e** etc. etc. and SEVENTH - Skill **f** for the **Cross-field Outcome** as stated.

Note that an **order (R)** is **not repeated** and only occurs once.

For Office Use

Respondent number V1 [ ] [ ] 1
Questionnaire V2 [3] 3

Please answer the questions by drawing a circle (O) around a number in a shaded box

1. Do you posses an ETDP qualification?

Yes	**1**	V3 [ ] 4
No	**2**	

2. Where did you obtain this qualification? Indicate the appropriate one.

University	**1**	V4 [ ] 5
Technikon	**2**	
Technical college	**3**	
Private training provider/centre	**4**	
RPL	**5**	
Compilation of short courses	**6**	

3. Which environment do you work in? Indicate the appropriate one.

Higher Education and Training Institution	**1**	V5 [ ] 6
Further Education and Training Institution	**2**	
General Education and Training Institution	**3**	
SETA, ETQA etc	**4**	
Industry training service provider	**5**	
SAQA	**6**	

4. What level in an organization do you find your self in?

Management level	**1**	V6 [ ] 7
Trainer/ Facilitator/Lecturer	**2**	

5. How did you become aware of the Critical Cross-Field Outcomes?

SAQA	**1**	V7 [ ] 8
SGB	**2**	
Training programme	**3**	
Word of mouth	**4**	

For Office Use

Relationship management skills include teamwork and leadership.

6. The ability to identify and solve problems, in which responses display that responsible decisions using critical and creative thinking have been made, entails the following ***relationship managerial skills in the order indicated***:

Order the following from 1 to 4 in the column headed R	R				
Reveal a result orientated approach		V8		9
Initiate and / or manage change		V9		10
Plan timeously in advance to accomplish a goal		V10		11
Assimilate / integrate information in order to adapt or adjust thoughts, feelings and behaviour		V11		12

7. The ability to work effectively with others as a member of a team, group, organisation or community, entails the following ***relationship managerial skills in the order indicated***:

Order the following from 1 to 8 in the column headed R	R				
Guide the performance of others while holding them accountable		V12		13
Initiate and / or manage change		V13		14
Cultivate and maintain extensive informal networks		V14		15
Identify and nurture opportunities for collaboration		V15		16
Reveal team qualities like respect, helpfulness and co-operation		V16		17
Contribute ideas in order to accomplish a common goal		V17		18
Give and take direction		V18		19
Assimilate / integrate information in order to adapt or adjust thoughts, feelings and behaviour		V19		20

8. The ability to organise and manage oneself and one's activities responsibly and effectively, entails the following ***relationship managerial skills in the order indicated***:

Order the following from 1 to 2 in the column headed R	R				
Plan timeously in advance to accomplish a goal		V20		21
Assimilate / integrate information in order to adapt or adjust thoughts, feelings and behaviour		V21		22

9. The ability to collect, analyse, organise and critically evaluate information, entails the following ***relationship managerial skills in the order indicated***:

Order the following from 1 to 4 in the column headed R	R				
Reveal a result orientated approach		V22		23
Make sound decisions despite uncertainties and pressures		V23		24
Plan timeously in advance to accomplish a goal		V24		25
Assimilate / integrate information in order to adapt or adjust thoughts, feelings and behaviour		V25		26

For Office Use

10. The ability to communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation, entails the following ***relationship managerial skills in the order indicated***:

Order the following from 1 to 3 in the column headed R	R				
Contribute ideas in order to accomplish a common goal		V26		27
Offer useful feedback and identify peoples' needs for development		V27		28
Assimilate / integrate information in order to adapt or adjust thoughts, feelings and behaviour		V28		29

11. The ability to use science and technology effectively and critically showing responsibility towards the environment and health of others, entails the following ***relationship managerial skills in the order indicated***:

Order the following from 1 to 2 in the column headed R	R				
Reveal a result orientated approach		V29		30
Assimilate / integrate information in order to adapt or adjust thoughts, feelings and behaviour		V30		31

12. The ability to demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation, entails the following ***relationship managerial skills in the order indicated***:

Order the following from 1 to 4 in the column headed R	R				
Reveal a result orientated approach		V31		32
Make sound decisions despite uncertainties and pressures		V32		33
Plan timeously in advance to accomplish a goal		V33		34
Offer useful feedback and identify peoples' needs for development		V34		35

13. The ability to reflect on and explore a variety of strategies to learn more effectively, entails the following ***relationship managerial skills in the order indicated***:

Order the following from 1 to 2 in the column headed R	R				
Reveal a result orientated approach		V35		36
Make sound decisions despite uncertainties and pressures		V36		37

14. The ability to participate as responsible citizens in the life of local, national and global communities, entails the following ***relationship managerial skills in the order indicated***:

Order the following from 1 to 3 in the column headed R	R				
Cultivate and maintain extensive informal networks		V37		38
Identify and nurture opportunities for collaboration		V38		39
Offer useful feedback and identify peoples' needs for development		V39		40

For Office Use

15. The ability to be culturally and aesthetically sensitive across a range of social contexts, entails the following ***relationship managerial skills in the order indicated***:

Order the following from 1 to 2 in the column headed R	R				
Cultivate and maintain extensive informal networks		V40		41
Contribute ideas in order to accomplish a common goal		V41		42

16. The ability to explore education and career opportunities, entails the following ***relationship managerial skills in the order indicated***:

Order the following from 1 to 3 in the column headed R	R				
Reveal a result orientated approach		V42		43
Make sound decisions despite uncertainties and pressures		V43		44
Initiate and / or manage change		V44		45

17. The ability to develop entrepreneurial opportunities, entails the following ***relationship managerial skills in the order indicated***:

Order the following from 1 to 4 in the column headed R	R				
Reveal a result orientated approach		V45		46
Make sound decisions despite uncertainties and pressures		V46		47
Plan timeously in advance to accomplish a goal		V47		48
Assimilate / integrate information in order to adapt or adjust thoughts, feelings and behaviour		V48		49

Thank you for your time and participation

RESEARCH QUESTIONNAIRE ON CRITICAL CROSS-FIELD OUTCOMES

You are about to complete a questionnaire for the purpose of research on the concept of ***Critical Cross-Field Outcomes***.

There are **no right or wrong** answers please take time to work thoroughly through this questionnaire carefully.

Your answers will be handled with ***great confidentiality***.

Thank you for your time and effort spent on this questionnaire.

Questions 6 to **17** each contain a statement of a

CROSS-FIELD OUTCOME.

You are asked to **order** the accompanying

SOCIAL SKILLS

as follows:

Statement of a **CROSS-FIELD OUTCOME**.

Order the following from 1 to 7 in the column headed R	**R**
Social skill **a**	**4**
Social skill **b**	**2**
Social skill **c**	**5**
Social skill **d**	**1**
Social skill **e**	**3**
Social skill **f**	**7**
Social skill **g**	**6**

This example indicates that the **Social skills a** to **g** after consideration are to be done FIRST - Skill **d**, SECOND - Skill **b**, THIRD -Skill **e** etc. etc. and SEVENTH - Skill **f** for the **Cross-field Outcome** as stated.

Note that an **order (R)** is **not repeated** and only occurs once.

For Office Use

Respondent number V1 1
Questionnaire V2 4 3

Please answer the questions by drawing a circle (O) around a number in a shaded box

1. Do you posses an ETDP qualification?

Yes	1	V3	4
No	2		

2. Where did you obtain this qualification? Indicate the appropriate one.

University	1	V4	5
Technikon	2		
Technical college	3		
Private training provider/centre	4		
RPL	5		
Compilation of short courses	6		

3. Which environment do you work in? Indicate the appropriate one.

Higher Education and Training Institution	1	V5	6
Further Education and Training Institution	2		
General Education and Training Institution	3		
SETA, ETQA etc	4		
Industry training service provider	5		
SAQA	6		

4. What level in an organization do you find your self in?

Management level	1	V6	7
Trainer/ Facilitator/Lecturer	2		

5. How did you become aware of the Critical Cross-Field Outcomes?

SAQA	1	V7	8
SGB	2		
Training programme	3		
Word of mouth	4		

For Office Use

Social skills

6. The ability to identify and solve problems, in which responses display that responsible decisions using critical and creative thinking have been made, entails the following ***social skills in the order indicated***:

Order the following from 1 to 4 in the column headed R	R		
Acknowledge key power relationships and strategies accurately		V8	9
Identify bias or stereotypes		V9	10
Recognise how feelings affect performance		V10	11
Show sensitivity, anticipate and understand others' perspectives		V11	12

7. The ability to work effectively with others as a member of a team, group, organisation or community requires the following ***social skills in the order indicated***:

Order the following from 1 to 6 in the column headed R	R		
Understand diverse world views and demonstrate sensitivity to group differences		V12	13
Predict responses of others to particular actions or events		V13	14
Acknowledge and accept information sharing		V14	15
Seek and fulfil own role in a group situation		V15	16
Interact effectively		V16	17
Show sensitivity, anticipate and understand others' perspectives		V17	18

8. The ability to organise and manage oneself and one's activities responsibly and effectively, requires the following ***social skills in the order indicated***:

Order the following from 1 to 3 in the column headed R	R		
Acknowledge and accept information sharing		V18	19
Seek and fulfil own role in a group situation		V19	20
Show sensitivity, anticipate and understand others' perspectives		V20	21

9. The ability to collect, analyse, organise and critically evaluate information, requires the following ***social skills in the order indicated***:

Order the following from 1 to 5 in the column headed R	R		
Understand diverse world views and demonstrate sensitivity to group differences		V21	22
Acknowledge key power relationships and strategies accurately		V22	23
Demonstrate a positive attitude to new procedures or technologies		V23	24
Recognise how feelings affect performance		V24	25
Acknowledge and accept information sharing		V25	26

For Office Use

10. The ability to communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation, requires the following ***social skills in the order indicated***:

Order the following from 1 to 5 in the column headed R	R				
Acknowledge key power relationships and strategies accurately		V26		27
Predict responses of others to particular actions or events		V27		28
Recognise how feelings affect performance		V28		29
Acknowledge and accept information sharing		V28		30
Interact effectively		V30		31

11. The ability to use science and technology effectively and critically showing responsibility towards the environment and health of others, requires the following ***social skills in the order indicated***:

Order the following from 1 to 2 in the column headed R	R				
Demonstrate a positive attitude to new procedures or technologies		V31		32
Show sensitivity, anticipate and understand others' perspectives		V32		33

12. The ability to demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation, requires the following ***social skills in the order indicated***:

Order the following from 1 to 4 in the column headed R	R				
Understand diverse world views and demonstrate sensitivity to group differences		V33		34
Acknowledge key power relationships and strategies accurately		V34		35
Acknowledge and accept information sharing		V35		36
Show sensitivity, anticipate and understand others' perspectives		V36		37

13. The ability to reflect on and explore a variety of strategies to learn more effectively requires the following ***social skills in the order indicated***:

Order the following from 1 to 3 in the column headed R	R				
Demonstrate a positive attitude to new procedures or technologies		V37		38
Identify bias or stereotypes		V38		39
Recognise how feelings affect performance		V39		40

14. The ability to participate as responsible citizens in the life of local, national and global communities, requires the following ***social skills in the order indicated***:

Order the following from 1 to 9 in the column headed R	R				
Understand diverse world views and demonstrate sensitivity to group differences		V40		41
Acknowledge key power relationships and strategies accurately		V41		42
Predict responses of others to particular actions or events		V42		43
Identify bias or stereotypes		V43		44
Recognise how feelings affect performance		V44		45
Acknowledge and accept information sharing		V45		46
Seek and fulfil own role in a group situation		V46		47
Interact effectively		V47		48
Show sensitivity, anticipate and understand others' perspectives		V48		49

For Office Use

15. The ability to be culturally and aesthetically sensitive across a range of social contexts, requires the following ***social skills in the order indicated***:

Order the following from 1 to 4 in the column headed R	R				
Understand diverse world views and demonstrate sensitivity to group differences		V49		50
Acknowledge key power relationships and strategies accurately		V50		51
Predict responses of others to particular actions or events		V51		52
Show sensitivity, anticipate and understand others' perspectives		V52		53

16. The ability to explore education and career opportunities, requires the following ***social skills in the order indicated***:

Order the following from 1 to 4 in the column headed R	R				
Predict responses of others to particular actions or events		V53		54
Demonstrate a positive attitude to new procedures or technologies		V54		55
Acknowledge and accept information sharing		V55		56
Interact effectively		V56		57

17. The ability to develop entrepreneurial opportunities, requires the following ***social skills in the order indicated***:

Order the following from 1 to 7 in the column headed R	R				
Acknowledge key power relationships and strategies accurately		V57		58
Predict responses of others to particular actions or events		V58		59
Demonstrate a positive attitude to new procedures or technologies		V59		60
Identify bias or stereotypes		V60		61
Acknowledge and accept information sharing		V61		62
Interact effectively		V62		63
Show sensitivity, anticipate and understand others' perspectives		V63		64

Thank you for your time and participation

RESEARCH QUESTIONNAIRE ON CRITICAL CROSS-FIELD OUTCOMES

You are about to complete a questionnaire for the purpose of research on the concept of ***Critical Cross-Field Outcomes***.

There are **no right or wrong** answers please take time to work thoroughly through this questionnaire carefully.

Your answers will be handled with ***great confidentiality***.

Thank you for your time and effort spent on this questionnaire.

Questions 6 to **17** each contain a statement of a

CROSS-FIELD OUTCOME.

You are asked to **order** the accompanying

SELF REGULATIVE SKILLS

as follows:

Statement of a **CROSS-FIELD OUTCOME**.

Order the following from 1 to 7 in the column headed R	**R**
Self Regulative skill **a**	**4**
Self Regulative skill **b**	**2**
Self Regulative skill **c**	**5**
Self Regulative skill **d**	**1**
Self Regulative skill **e**	**3**
Self Regulative skill **f**	**7**
Self Regulative skill **g**	**6**

This example indicates that the **Self Regulative skills a** to **g** after consideration are to be done FIRST - Skill **d**, SECOND - Skill **b**, THIRD - Skill **e** etc. etc. and SEVENTH - Skill **f** for the **Cross-field Outcome** as stated.

Note that an **order (R)** is **not repeated** and only occurs once.

For Office Use

Respondent number V1 | | | 1
Questionnaire V2 | 5 | 3

Please answer the questions by drawing a circle (O) around a number in a shaded box

1. Do you posses an ETDP qualification?

Yes	**1**	V3	4
No	**2**		

2. Where did you obtain this qualification? Indicate the appropriate one.

University	**1**	V4	5
Technikon	**2**		
Technical college	**3**		
Private training provider/centre	**4**		
RPL	**5**		
Compilation of short courses	**6**		

3. Which environment do you work in? Indicate the appropriate one.

Higher Education and Training Institution	**1**	V5	6
Further Education and Training Institution	**2**		
General Education and Training Institution	**3**		
SETA, ETQA etc	**4**		
Industry training service provider	**5**		
SAQA	**6**		

4. What level in an organization do you find your self in?

Management level	**1**	V6	7
Trainer/ Facilitator/Lecturer	**2**		

5. How did you become aware of the Critical Cross-Field Outcomes?

SAQA	**1**	V7	8
SGB	**2**		
Training programme	**3**		
Word of mouth	**4**		

For Office Use

Self regulative skills represent self-awareness, self-regulation and learning orientation.

6. The ability to identify and solve problems, in which responses display that responsible decisions using critical and creative thinking have been made, entails the following ***self regulative skills in the order indicated***:

Order the following from 1 to 3 in the column headed R	R				
Pursue goals beyond requirements		V8		9
Think clearly and stay focussed under pressure		V9		10
Admit own mistakes		V10		11

7. The ability to work effectively with others as a member of a team, group, organisation or community requires the following ***self regulative skills in the order indicated***:

Order the following from 1 to 4 in the column headed R	R				
Adapt priorities to meet the varying requirements of a situation		V11		12
Honour the links between feelings, thoughts and actions of self as well as others		V12		13
Express a guiding awareness of values and goals		V13		14
Be adaptable and aware of one's behaviour based on feedback and suggestions from others		V14		15

8. The ability to organise and manage oneself and one's activities responsibly and effectively, requires the following ***self regulative skills in the order indicated***:

Order the following from 1 to 4 in the column headed R	R				
Pursue goals beyond requirements		V15		16
Think clearly and stay focussed under pressure		V16		17
Admit own mistakes		V17		18
Establishes priorities as part of system		V18		19

9. The ability to collect, analyse, organise and critically evaluate information, requires the following ***self regulative skills in the order indicated***:

Order the following from 1 to 5 in the column headed R	R				
Honour the links between feelings, thoughts and actions of self as well as others		V19		20
Explore new perspectives, continuous learning and self development		V20		21
Think clearly and stay focussed under pressure		V21		22
Admit own mistakes		V22		23
Establishes priorities as part of system		V23		24

10. The ability to communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation, requires the following ***self regulative skills in the order indicated***:

Order the following from 1 to 4 in the column headed R	R				
Honour the links between feelings, thoughts and actions of self as well as others		V24		25
Be adaptable and aware of one's behaviour based on feedback and suggestions from others		V25		26
Learn from mistakes; analyse, own performance strategies in order to improve performance		V26		27
Admit own mistakes		V27		28

For Office Use

11. The ability to use science and technology effectively and critically showing responsibility towards the environment and health of others, requires the following ***self regulative skills in the order indicated***:

Order the following from 1 to 4 in the column headed R	R				
Pursue goals beyond requirements		V28		29
Adapt priorities to meet the varying requirements of a situation		V29		30
Think clearly and stay focussed under pressure		V30		31
Admit own mistakes		V31		32

12. The ability to demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation, requires the following ***self regulative skills in the order indicated***:

Order the following from 1 to 2 in the column headed R	R				
Learn from mistakes; analyse, own performance strategies in order to improve performance		V32		33
Establishes priorities as part of system		V33		34

13. The ability to reflect on and explore a variety of strategies to learn more effectively requires the following ***self regulative skills in the order indicated***:

Order the following from 1 to 5 in the column headed R	R				
Honour the links between feelings, thoughts and actions of self as well as others		V34		35
Express a guiding awareness of values and goals		V35		36
Explore new perspectives, continuous learning and self development		V36		37
Be adaptable and aware of one's behaviour based on feedback and suggestions from others		V37		38
Learn from mistakes; analyse, own performance strategies in order to improve performance		V38		39

14. The ability to participate as responsible citizens in the life of local, national and global communities, requires the following ***self regulative skills in the order indicated***:

Order the following from 1 to 3 in the column headed R	R				
Pursue goals beyond requirements		V39		40
Honour the links between feelings, thoughts and actions of self as well as others		V40		41
Express a guiding awareness of values and goals		V41		42

15. The ability to be culturally and aesthetically sensitive across a range of social contexts, requires the following ***self regulative skills in the order indicated***:

Order the following from 1 to 3 in the column headed R	R				
Express a guiding awareness of values and goals		V42		43
Explore new perspectives, continuous learning and self development		V43		44
Be adaptable and aware of one's behaviour based on feedback and suggestions from others		V44		45

For Office Use

16. The ability to explore education and career opportunities, requires the following ***self regulative skills in the order indicated***:

Order the following from 1 to 4 in the column headed R	R				
Pursue goals beyond requirements		V45		46
Explore new perspectives, continuous learning and self development		V46		47
Be adaptable and aware of one's behaviour based on feedback and suggestions from others		V47		48
Learn from mistakes; analyse, own performance strategies in order to improve performance		V48		49

17. The ability to develop entrepreneurial opportunities, requires the following ***self regulative skills in the order indicated***:

Order the following from 1 to 3 in the column headed R	R				
Explore new perspectives, continuous learning and self development		V49		50
Be adaptable and aware of one's behaviour based on feedback and suggestions from others		V50		51
Learn from mistakes; analyse, own performance strategies in order to improve performance		V51		52

Thank you for your time and co-operation

RESEARCH QUESTIONNAIRE ON CRITICAL CROSS-FIELD OUTCOMES

You are about to complete a questionnaire for the purpose of research on the concept of ***Critical Cross-Field Outcomes***.

There are **no right or wrong** answers please take time to work thoroughly through this questionnaire carefully.

Your answers will be handled with ***great confidentiality***.

Thank you for your time and effort spent on this questionnaire.

Questions 6 to **17** each contain a statement of a

CROSS-FIELD OUTCOME.

You are asked to **order** the accompanying

GENERATIVE SKILLS

as follows:

Statement of a **CROSS-FIELD OUTCOME**.

Order the following from 1 to 7 in the column headed R	**R**
Generative skill **a**	**4**
Generative skill **b**	**2**
Generative skill **c**	**5**
Generative skill **d**	**1**
Generative skill **e**	**3**
Generative skill **f**	**7**
Generative skill **g**	**6**

This example indicates that the **Generative skills a** to **g** after consideration are to be done FIRST - Skill **d**, SECOND - Skill **b**, THIRD - Skill **e** etc. etc. and SEVENTH - Skill **f** for the **Cross-field Outcome** as stated.

Note that an **order (R)** is **not repeated** and only occurs once.

For Office Use

Respondent number V1 1
Questionnaire V2 6 3

Please answer the questions by drawing a circle (O) around a number in a shaded box

1. Do you posses an ETDP qualification?

Yes	**1**	V3 4
No	**2**	

2. Where did you obtain this qualification? Indicate the appropriate one.

University	**1**	V4 5
Technikon	**2**	
Technical college	**3**	
Private training provider/centre	**4**	
RPL	**5**	
Compilation of short courses	**6**	

3. Which environment do you work in? Indicate the appropriate one.

Higher Education and Training Institution	**1**	V5 6
Further Education and Training Institution	**2**	
General Education and Training Institution	**3**	
SETA, ETQA etc	**4**	
Industry training service provider	**5**	
SAQA	**6**	

4. What level in an organization do you find your self in?

Management level	**1**	V6 7
Trainer/ Facilitator/Lecturer	**2**	

5. How did you become aware of the Critical Cross-Field Outcomes?

SAQA	**1**	V7 8
SGB	**2**	
Training programme	**3**	
Word of mouth	**4**	

For Office Use

Generative skills represent the ability to synthesise and relates to creative skills.

6. The ability to identify and solve problems, in which responses display that responsible decisions using critical and creative thinking have been made, entails the following ***generative skills in the order indicated***:

Order the following from 1 to 7 in the column headed R	R				
Generate new ideas		V8		9
Supply missing or implied information		V9		10
State a goal clearly and unambiguously		V10		11
Conceive, create something that did not exist before		V11		12
Design, construct and execute prepared plans		V12		13
Assemble information or materials together into a structure		V13		14
Explore fresh ideas from a variety of sources		V14		15

7. The ability to work effectively with others as a member of a team, group, organisation or community requires the following ***generative skills in the order indicated***:

Order the following from 1 to 4 in the column headed R	R				
Supply missing or implied information		V15		16
State a goal clearly and unambiguously		V16		17
Conceive, create something that did not exist before		V17		18
Design, construct and execute prepared plans		V18		19

8. The ability to organise and manage oneself and one's activities responsibly and effectively, requires the following ***generative skills in the order indicated***:

Order the following from 1 to 6 in the column headed R	R				
Supply missing or implied information		V19		20
State a goal clearly and unambiguously		V20		21
Conceive, create something that did not exist before		V21		22
Design, construct and execute prepared plans		V22		23
Assemble information or materials together into a structure		V23		24
Explore fresh ideas from a variety of sources		V24		25

9. The ability to collect, analyse, organise and critically evaluate information, requires the following ***generative skills in the order indicated***:

Order the following from 1 to 7 in the column headed R	R				
Generate new ideas		V25		26
Supply missing or implied information		V26		27
State a goal clearly and unambiguously		V27		28
Conceive, create something that did not exist before		V28		29
Design, construct and execute prepared plans		V29		30
Assemble information or materials together into a structure		V30		31
Explore fresh ideas from a variety of sources		V31		32

For Office Use

10. The ability to communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation, requires the following ***generative skills in the order indicated***:

Order the following from 1 to 4 in the column headed R	R				
Supply missing or implied information		V32		33
State a goal clearly and unambiguously		V33		34
Conceive, create something that did not exist before		V34		35
Design, construct and execute prepared plans		V35		36

11. The ability to use science and technology effectively and critically showing responsibility towards the environment and health of others, requires the following ***generative skills in the order indicated***:

Order the following from 1 to 8 in the column headed R	R				
Generate new ideas		V36		37
Explore and adapt equipment as and when needed		V37		38
Supply missing or implied information		V38		39
State a goal clearly and unambiguously		V39		40
Conceive, create something that did not exist before		V40		41
Design, construct and execute prepared plans		V41		42
Assemble information or materials together into a structure		V42		43
Explore fresh ideas from a variety of sources		V43		44

12. The ability to demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation, requires the following ***generative skills in the order indicated***:

Order the following from 1 to 5 in the column headed R	R				
Supply missing or implied information		V44		45
State a goal clearly and unambiguously		V45		46
Conceive, create something that did not exist before		V46		47
Design, construct and execute prepared plans		V47		48
Assemble information or materials together into a structure		V48		49

13. The ability to reflect on and explore a variety of strategies to learn more effectively requires the following ***generative skills in the order indicated***:

Order the following from 1 to 2 in the column headed R	R				
Supply missing or implied information		V49		50
State a goal clearly and unambiguously		V50		51

14. The ability to participate as responsible citizens in the life of local, national and global communities, requires the following ***generative skills in the order indicated***:

Order the following from 1 to 2 in the column headed R	R				
Supply missing or implied information		V51		52
Explore fresh ideas from a variety of sources		V52		53

For Office Use

15. The ability to be culturally and aesthetically sensitive across a range of social contexts, requires the following ***generative skills in the order indicated***:

Order the following from 1 to 2 in the column headed R	R				
Supply missing or implied information		V53		54
Explore fresh ideas from a variety of sources		V54		55

16. The ability to explore education and career opportunities, requires the following ***generative skills in the order indicated***:

Order the following from 1 to 2in the column headed R	R				
Supply missing or implied information		V55		56
State a goal clearly and unambiguously		V56		57

17. The ability to develop entrepreneurial opportunities, requires the following ***generative skills in the order indicated***:

Order the following from 1 to 5 in the column headed R	R				
Supply missing or implied information		V57		58
State a goal clearly and unambiguously		V58		59
Conceive, create something that did not exist before		V59		60
Design, construct and execute prepared plans		V60		61
Assemble information or materials together into a structure		V61		62

Thank you for your time and co-operation

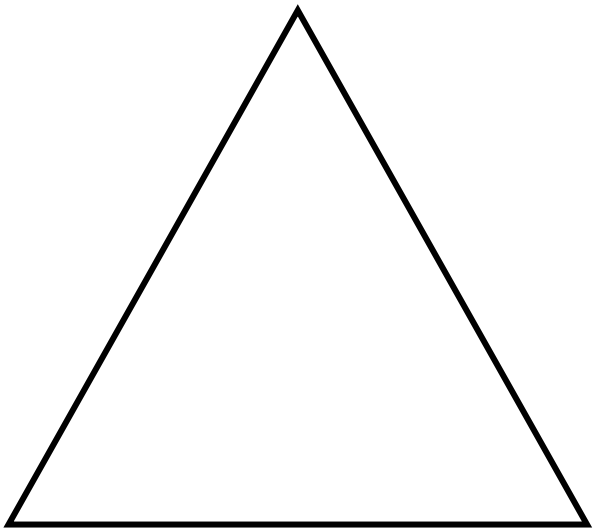
Addendum D: Sternberg's Triarchic Theory of Intelligence

Practical thinking:

Apply

Use

Do



Analytical thinking

Analyse

Compare

Creative thinking

Create

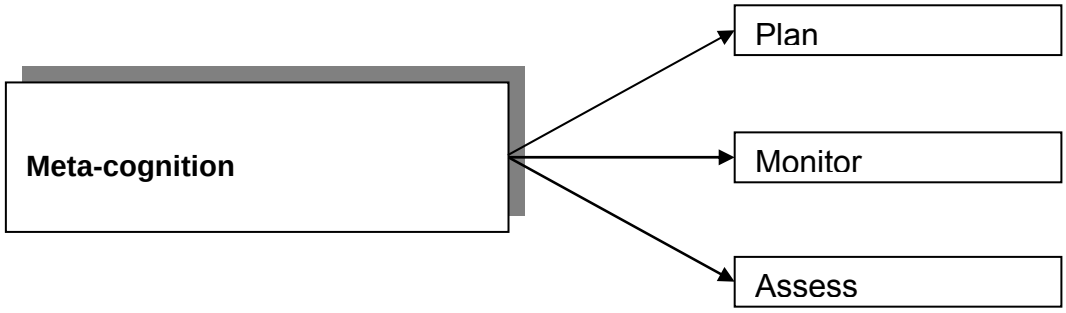
Invent

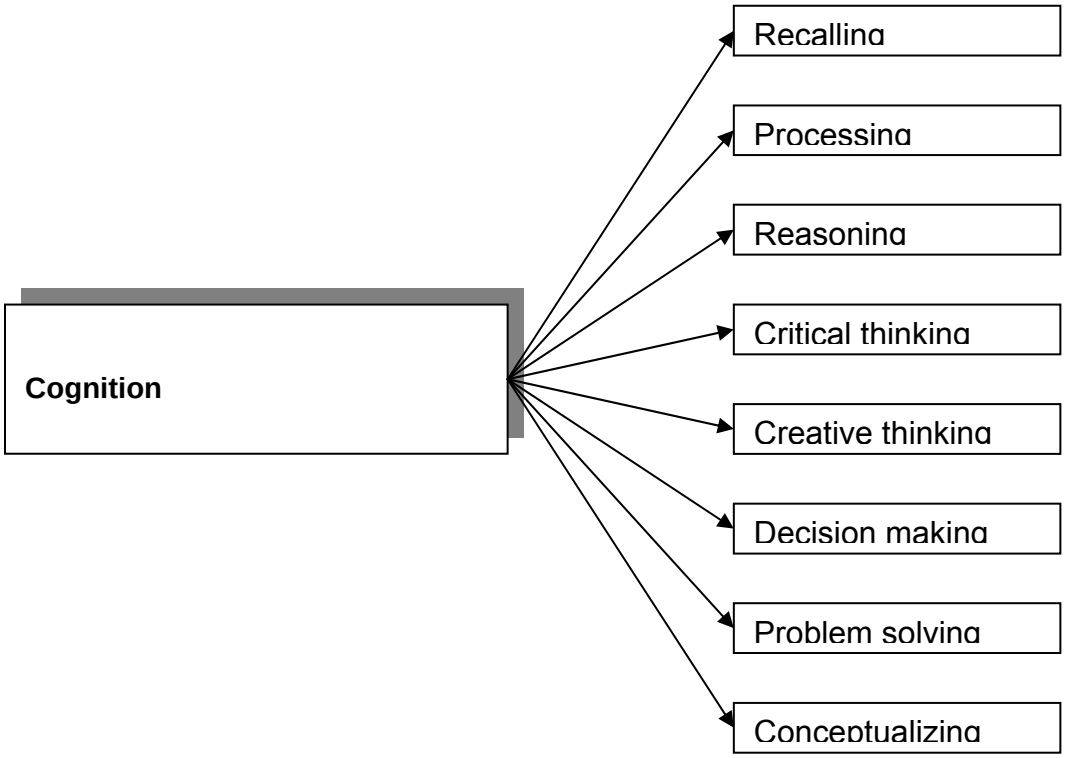
Addendum E: Applied version of Bloom's taxonomy as presented by Bellis (2002: 48 & 227)

Highest level	Level	Cognitive domain	Associated verbs		
	Evaluation	Assessing the value of ideas, things Making judgements with given criteria	predict argue appraise compare score recommend	select assess choose select support	estimate judge rate justify
	Synthesis	Assembling a whole form parts Bringing together parts of knowledge to form a whole and building relationships for new situations	integrate propose compose develop incorporate plan prepare	formulate construct create design organise start structure	arrange assemble insert integrate manage write
	Analysis	Disassembling a whole into parts Breaking down knowledge into parts and state relationships	categorise deduce analyse calculate infer	differentiate compare contrast criticise discriminate	classify distinguish examine experiment question test
	Application	Using what has been previously learned Appling knowledge or generalising it to a new situation	operate interpret apply choose compute prepare use	modify demonstrate discover draw employ schedule survey	solve illustrate revise practise show sketch

Lowest level	Comprehension	Knowing what a message means Interpreting information in one's own words	compare define classify interpret recognise restate summarise tell	discuss describe explain express paraphrase report sort	match generalise identify indicate locate review select
	Knowledge	Remembering/recalling terms, facts Recalling information	recall reproduce name order state	locate arrange define recognise repeat	list label memorise relate

Addendum F: Thinking operations Beyer (1998:32)





Addendum G: Emotional Competence Framework

The following generic competence framework distils findings from various authors. The aggregation of authors is as follows:

U.S. Office of Personnel Management: MOSAIC competencies for professional and administrative occupations

Spencer and Spencer: *Competence at Work*

Spencer and Spencer: *Top performance and leadership competence studies* published in R. H. Rosier (Ed). 1994 and1995. *The competency model handbook*, Volumes One and Two: Boston, Linkage

Goleman. D. 1998. Working with Emotional intelligence. Bantam

The above-mentioned authors found it appropriate to divide the emotional competence framework into *personal competence* and *social competence* as they refer to it. Personal competence is further divided into Self-Awareness and Self-Regulation with respective sub-division in tally, as for Social Competence that is divided into Social Awareness and Social Competencies. This framework relates to the framework provided by Younger during the JET Educational workshop in June 2003.

Following is a layout of the Emotional Competence Framework.

a) **Personal competence**

Self Awareness

Emotional Awareness:

Recognising one's emotions and their effects. People with this competence:

- know which emotions they are feeling and why
- realise the links between their feelings and what they think, do and say
- recognise how their feelings affect their performance
- have a guiding awareness of their values and goals

Accurate Self-Assessment:

- Knowing one's strengths and limits. People with this competence are:

- Aware of their strengths and weaknesses
- Reflective, learning from experience
- Open to candid feedback, new perspectives, continuous learning and self-development
- Able to show a sense of humour and perspectives about themselves

Self-Confidence

- Sureness about one's self-worth and capabilities. People with this competence:

- Present themselves with self-assurance; have 'presence'
- Can voice views that are unpopular and go out on a limb for what is right
- Are decisive, able to make sound decisions despite uncertainties and pressures

Self Regulation

Self Control

- Managing disruptive emotions and impulses. People with this competence:

- Manage their impulsive feelings and distressing emotions well
- Stay composed, positive and unflappable even in trying moments
- Think clearly and stay focused under pressure

Trustworthiness

- Maintaining standards of honesty and integrity. People with this competence:

- Act ethically and are above reproach
- Build trust through their reliability and authenticity
- Admit their own mistakes and confront unethical actions in others
- Take tough principle stands even if they are unpopular

Conscientiousness

- Taking responsibility for personal performance. People with this competence:

- Meet commitments and keep promises
- Hold themselves accountable for meeting their objectives
- Are organised and careful in their work

Adaptability

- Flexibility in handling change. People with this competence:

- Smoothly handle multiple demands, shifting priorities and rapid change
- Adapt their responses and tactics to fit fluid circumstances
- Are flexible in how they see events

Innovativeness:

- Being comfortable with and open to novel ideas and new information. People with this competence:
- Seek out fresh ideas from a wide variety of sources
- Entertain original solutions to problems
- Generate new ideas
- Take fresh perspectives and risks in their thinking

Self Motivation

Achievement Drive

- Striving to improve or meet a standard of excellence. People with this competence:
- Are result-oriented, with a high drive to meet their objectives and standards
- Set challenging goals and take calculated risks
- Pursue information to reduce uncertainty and find ways to do better
- Learn how to improve their performance

Commitment

- Aligning with the goals of the group or organisation. People with this competence:
- Readily make personal or group sacrifices to meet a larger organisational goal
- Find a sense of purpose in the larger mission
- Use the group's core values in making decisions and clarifying choices
- Actively seek out opportunities to fulfil the group's mission

Initiative

- Readiness to act on opportunities. People with this competence:
- Are ready to seize opportunities

- Pursue goals beyond what is required or expected of them
- Cut through red tape and bend the rules when necessary to get the job done
- Mobilises others through unusual enterprising efforts

Optimism

- Persistence in pursuing goals despite obstacles and setbacks. People with this competence:
- Persist in seeking goals despite obstacles and setbacks
- Operate from hope of success rather than fear of failure
- See setbacks as due to manageable circumstance rather than a personal flaw

Social Competence

Social Awareness

Empathy

Sensing others' feelings and perspectives, and taking an active interest in their concerns. People with this competence:

- Are attentive to emotional cues and listen well
- Show sensitivity and understand others' perspectives
- Help out based on understanding other people's needs and feelings

Service Orientation

- Anticipating, recognising and meeting customers' needs. People with this competence:
- Understand customers' needs and match them to services or products
- Seek ways to increase customers' satisfaction and loyalty
- Gladly offer appropriate assistance
- Grasp a customers' perspective, acting as a trusted advisor

Developing Others

- Sensing what others need in order to develop, and bolstering their abilities. People with this competence:
- Acknowledge and reward peoples' strengths, accomplishments and development
- Offer useful feedback and identify people's needs for development
- Mentor, give timely coaching, and offer assignments that challenge and grow a person's skill

Leveraging Diversity

- Cultivating opportunities through diverse people. People with this competence:
- Respect and relate well to people from varied backgrounds
- Understand diverse worldviews and area sensitive to group differences
- See diversity as opportunity, creating an environment where diverse people can thrive
- Challenge bias and intolerance

Political Awareness

- Reading a group's emotional currents and power relationships. People with this competence:
- Accurately read key power relationships
- Detect crucial social networks
- Understand the forces that shape views and actions of clients, customers or competitors
- Accurately read situations and organisational and external realities

Social Competencies

Influence

Wielding effective tactics for persuasion. People with competence:

- Are skilled at persuasion
- Fine-tune presentations to appeal to the listener
- Use complex strategies like indirect influence to build consensus and support
- Orchestrate dramatic events to make a point effectively

Communication

Sending clear and convincing messages. People with this competence:

- Are effective in give-and-take, registering emotional cues in attuning their message
- Deal with difficult issues straightforwardly
- Listen well, seek mutual understanding and welcome sharing of information fully
- Foster open communication and stay receptive to bad news as well as good

Leadership

- Inspiring and guiding groups and people.
- People with this competence:
- Articulate and arouse enthusiasm for a shared vision and mission
- Step forward to lead as needed, regardless of position
- Guide the performance of others while holding them accountable
- Lead by example

Change Catalyst

Initiating or managing change. People with this competence:

- Recognise the need for change and remove barriers
- Challenge the status quo to acknowledge the need for change
- Champion the change and enlist others in its pursuit
- Model the change expected of others

Conflict Management

Negotiating and resolving disagreements. People with this competence:

- Handle difficult people and tense situations with diplomacy and tact
- Spot potential conflict, bring disagreements into the pen and help deescalate
- Encourage debate and open discussion
- Orchestrate win-win solutions

Building Bonds

- Nurturing instrumental relationships. People with this competence:
- Cultivate and maintain extensive informal networks
- Seek out relationships that are mutually beneficial
- Build rapport and keep others in the loop
- Make and maintain personal friendship among work associates

Collaboration and Cooperation

Working with others toward shared goals. People with this competence:

- Balance a focus on task with attention to relationships
- Collaborate, sharing plans, information and resources
- Promote a friendly, cooperative climate
- Spot and nurture opportunities for collaboration

Team Capabilities

Creating group synergy in pursuing collective goals. People with this competency;

- Model team qualities like respect, helpfulness and cooperation
- Draw all members into active and enthusiastic participation
- Build team identity, esprit de corps and commitment
- Protect the group and its reputation, share credit