CHAPTER 5: EMPIRICAL STUDY

5.1 INTRODUCTION

Observe

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	
V11	V8	
V10	V9	
V9	V10	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V11	V11	
V9	V8	
V8	V10	
V10	V9	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V8	V11	
V11	V8	
V10	V10	
V9	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	V9	
V8	V10	
V10	V8	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V9	V9	
V8	V10	
V10	V8	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V9	V9	
V8	V10	
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	
V14	V13	
V10	V10	
V13	V9	
V8	V8	
V11	V11	
V9	V12	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V14	V14	
V12	V13	
V11	V10	
V8	V9	
V9	V8	
V13	V11	
V10	V12	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V14	V13	
V13	V9	
V10	V10	
V8	V14	
V9	V8	
V11	V11	
V12	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	V19	
V16	V17	
V19	V16	
V13	V15	
V15	V18	
V12	V12	
V18	V13	
V14	V14	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V13	V19	
V15	V17	
V17	V16	
V12	V15	
V19	V18	
V16	V12	
V18	V14	
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	V12	
V17	V16	
V15	V17	
V14	V14	
V12	V19	
V13	V15	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V12	V12	
V15	V16	
V16	V17	
V17	V14	
V14	V13	
V13	V15	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V12	V17	
V15	V12	
V16	V16	
V17	V14	
V14	V13	
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	V11	
V14	V14	
V13	V12	
V12	V13	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V13	V11	
V11	V14	
V14	V12	
V12	V13	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V11	V11	
V13	V14	
V14	V12	
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	V16	
V15	V18	
V17	V15	
V18	V17	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V16	V16	
V15	V18	
V18	V15	
V17	V17	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V16	V15	
V18	V16	
V15	V18	
V17	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	
V23	V24	
V22	V21	
V21	V22	
V25	V25	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V23	V23	
V22	V24	
V24	V21	
V21	V22	
V25	V25	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V23	V23	
V24	V24	
V25	V21	
V21	V22	
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	V18	
V19	V20	
V20	V19	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V18	V18	
V19	V19	
V20	V20	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V18	V18	
V19	V19	
V20	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	V18	
V15	V16	
V16	V17	
V17	V15	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V18	V18	
V16	V16	
V15	V17	
V17	V15	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V18	V18	
V15	V16	
V16	V17	
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	V34	
V35	V35	
V36	V36	
V38	V37	
V40	V38	
V39	V39	
V37	V40	
V43	V41	
V42	V42	
V41	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	V25	
V24	V24	
V23	V22	
V25	V23	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V22	V24	
V23	V25	
V24	V22	
V25	V23	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V24	V24	
V22	V25	
V25	V22	
V23	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	V21	
V22	V23	
V25	V24	
V21	V25	
V24	V22	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V22	V21	
V23	V23	
V25	V25	
V24	V22	
V21	V24	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V21	V21	
V23	V23	
V22	V24	
V25	V25	
V24	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	
V20	V23	
V21	V21	
V19	V19	
V22	V22	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V20	V23	
V23	V20	
V21	V21	
V22	V19	
V19	V22	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V20	V23	
V23	V20	
V21	V21	
V19	V19	
V22	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	V26	
V30	V30	
V29	V31	
V25	V27	
V27	V25	
V31	V28	
V26	V29	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V30	V30	
V31	V26	
V29	V31	
V28	V27	
V26	V25	
V27	V28	
V25	V29	

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

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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	V26	
V25	V25	
V26	V24	
V27	V27	
Comparing work environment		
Higher Education and Training institution	**Other training providers**	
V26	V25	
V25	V24	
V24	V26	
V27	V27	
Comparing awareness of CCFOs		
Formal training programmes	**Other instances**	
V25	V26	
V24	V24	
V26	V25	
V27	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	

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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.