

**A Generic Environmental Awareness Course Framework
for use by Business**

by

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Abstract

Environmental Awareness is important in the protection of the environment and for promoting further business activities. Failure to protect the environment results in the depletion of natural resources which would subsequently lead to environmental degradation. Business activities can be considered as a major contributor to environmental degradation as they involve the acquisition and exploitation of large quantities of the world's natural resources. It is therefore essential that all members of staff in a business have the relevant knowledge and appropriate skills to protect themselves and the environment. This knowledge can only be obtained through environmental awareness training and training should take place on all staff levels. Because it is very important to train all staff in business methods, this training should be nationally recognised and be of a high standard. To ensure that such a training programme meets this requirement, it should be registered with the national qualifications registration authority, namely the South African Qualifications Authority (SAQA). All SAQA-registered training programmes and unit standards have nationally accepted standards.

The main aim of this Mini dissertation is to determine whether or not a registered training programme *specifically* aimed at business in terms of the South African Qualifications Act on environmental awareness exists, and, if no registered training program is found, to design such a training program to meet this need.

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The importance of environmental awareness training cannot be over-emphasised. Changes in South African legislation, such as the inclusion of clauses to protect the environment as in Section 24 of the Constitution, as well as international pressure whereby customers and suppliers are required to conform to international environmental standards and environmental accounting practices, have made it important for businesses to train all their staff to be environmentally aware.

The change in government in 1994 and the concomitant relaxation of sanctions, as well as the advent of the Internet, facilitating trade with other countries, has caused the world to become a "global village". The business world has embraced technology with the result that communication is easier and relations between foreign countries have improved. Foreign customers now expect their suppliers in South Africa to comply with international environmental standards such as the ISO 9000 and ISO 14000 standards.

Recently, shareholders have started demanding that their companies report not only on their economic activities, but also on their associated environmental and social responsibilities. The importance of the so-called “Triple Bottom Line” (the environmental, social and economic elements responsibilities of business) is now being emphasised.

In South Africa, stricter environmental laws such as The National Environmental Management Act (No.107 of 1998) and the proposed Pollution Prevention Bill, and their enforcement, have seen companies such as Thor Chemicals closed down because of their non-compliance with environmental legislation. The consequences of such constraints and other pressures have highlighted the increased need for business to train staff in environmental awareness. A registered training program has the advantage that the outcomes will conform to nationally accepted standards and that the learner will receive recognised credit for having completed the training programme successfully. Business will also be in a position to claim back part of the costs of training from its skills development levy.



Opsomming

Omgewingsbewustheid is belangrik vir die beskerming van die omgewing en vir voortgesette besigheidsaktiwiteite. As die omgewing nie beskerm word nie, kan dit tot omgewingsdegradasie en die uitputting van natuurlike hulpbronne lei. Daarom is dit nodig dat die besigheidspersoneel in totaliteit oor die relevante kennis en vaardighede beskik om hulself en die omgewing te beskerm.

Kennis word bekom deur bewustheidskursusse wat deur alle personeel op alle vlakke bygewoon word. Aangesien alle personelede opgelei moet word, is dit belangrik dat die nasionaal-erkende kursus van hoë gehalte moet wees. Om dit te verseker, moet die kursus deur die Suid-Afrikaanse Kwalifiserende Otoriteit (SAQA) geregistreer word. Huidiglik is dit nie maklik om vas te stel of daar 'n geregistreerde omgewingsbewustheidskursus bestaan wat deur die SAQA goedgekeur is nie.

Die hoofdoelwit van hierdie skripsie is om ondersoek in te stel oor die regverdiging, aldan nie, vir so 'n geregistreerde kursus, wat spesifiek gemik is op die opleiding van besigheidspersoneel met betrekking tot die SAQA kwalifikasie. Indien sodanige geregistreerde kursus nie sou bestaan nie, is dit die doel om een te ontwerp wat aan al die vereistes sou voldoen.

Die belangrikheid van sodanige omgewingsbewustheidskursus kan nie oorbeklemtoon word nie. Verandering aan die Suid Afrikaanse omgewingswette, wat die beskerming van die omgewing behels, soos in ons Konstitusie vervat word, asook internasionale druk wat op besighede uitgeoefen word om aan internasionale standaarde en omgewingspraktyke te voldoen, het dit noodsaaklik gemaak dat besighede hul personeel behoorlik oplei in terme van hul bewustheid van hul omgewing.

Die verandering in regering in 1994 en die afskaffing van sanksies, die opkoms van die Internet en die gepaardgaande bevordering van handel met ander lande het tot gevolg dat die wêreld as 'n globale tuiste beskou word. Met die opkoms van die nuwe tegnologie het die besigheidswêreld toegankliker geword. Dit het tot gevolg dat internasionale klante baie meer vereistes aan hul produsente in Suid Afrika stel met betrekking tot omgewingsstandaarde soos ISO 9000 en ISO 14000.

Tans eis aandeelhouers dat maatskappye verslag moet doen oor hul bedrywighede en hoe dit die omgewing raak. Hoe besighede hul sosiale verantwoordelikhede nakom is ook volgens hulle 'n

vraagstuk. Aandag word dus op die belangrikheid van die sogenoemde “Driededige Basislyn” (“Triple Bottom Line”) gevestig. Laasgenoemde behels die omgewings-, sosiale en ekonomiese verpligtinge van ‘n besigheid.

Die verontagsaming van omgewingswetgewing, byvoorbeeld die Nasionale Omgewingsbestuurswet (Wet 107 van 1998) en die voorgestelde Voorkoming van Besoedelingswet mag die sluiting van ’n maatskappy tot gevolg hê. Na die voltooiing van ’n geregistreerde omgewingsbewustheidskursus, kan kursusgangerspunte verwerf word. So nie, kan ’n sertifikaat van bywoning ontvang word. Sodoende sal so ’n kursus positief ervaar word.



1. Introduction.

It is generally accepted in business today that environmental awareness forms an important part of business management on account of the associated cost savings and environmental protection. Environmental awareness is deemed to be so important in business that business is calling for all staff to undergo a registered environmental awareness training course designed by a South African Qualifications Authority (SAQA). A SAQA-registered course consists of a number of relevant registered unit standards. The South African Qualifications Authority Act (No. 58 of 1995) introduced the concept of a *unit standard*, which it defines as “a registered statement of desired education and training outcomes and their associated criteria, technical information, together with administrative and other information as specified in these regulations”. A unit standard can be colloquially thought of as a “training module” with a specific set of outcomes that must be demonstrated before the learner is regarded as having successfully completed the module. Unit standards describe the outcomes or results of the learning process and not the process of learning (Phillips, 1996). A unit standard has a nationally registered set of specific learning outcomes with their associated assessment criteria. The assessment criteria ensure that all learners are assessed against the same criteria. The unit standard forms the foundation of the National Qualifications Framework (NQF). The NQF is essentially a quality assurance system with the development and registration of standards and qualifications as a step in implementing a quality education and training system in South Africa (Isaacs 2000b). All future registered training programmes must be based on unit standards and developed according to the SAQA guidelines (SAQA, 1999). Unit standards and the NQF will be discussed in detail later in this document (p.24, section 3).

In this study, **business** is regarded as including all forms of economic activity that produce goods and services for the satisfaction of human needs. Business activities are those actions and processes that result in the business’s end product or service. In this document *Business, industry,* and an *organisation* are thus regarded as being synonymous and include all economic sectors. Internationally, business is being forced to consider the environment in which operations take place and it is becoming common to report on environmental policy and status in the annual report to shareholders. According to Steiner (2002), this is as a result of globalisation and a new corporate responsibility. Locally, the second King Report, released in March 2002, requires companies to report on social and environmental issues (King, 2000). This reflects the growing significance of the “Triple Bottom Line” (*environmental, economic and social issues*) in the

business world (Crowther, 2000). The Triple Bottom Line referred to above, requires companies to report to their shareholders on the company's participation and involvement in social, environmental and economic activities. According to Higgins (2002), "triple bottom line reporting involves thinking more boldly about what constitutes "performance" and "success" for business". Bennette (1998) believes companies should be accountable at all times to society at large for their actions. Businesses must also consider their social and environmental performance in the same way as they consider economic performance to ensure the future survival of the business and a sustainable source of natural resources.

Brittan (1999) believes that "the key to a successful policy on trade and environment is to pursue sustainable development in a co-ordinated manner". He further believes that "the competing demands of economic growth, environmental protection and social development" must be reconciled. Roa (2000) concurs with Brittan (1999) and states that the production and consumption processes lead to the development of most of the environmental problems. Economic science recognizes the critical role of environment and ecology in the managing of economic systems (Roa, 2000).

Most of the environmental degradation that has taken place in the world has been and is caused by man's activities. Mainly, it is the result of business activities. All types of business are blamed for the environmental degradation that has and is taking place because of the associated activities. Businesses using natural resources are generally regarded as the biggest culprits in causing environmental degradation. They are perceived as chasing profit without any consideration for the social and environmental consequences of their activities. Business throughout the world has often been seen to disregard environmental considerations in order to make a profit at the expense of the environment , as in the case of Iscor (Star, 2001; Sunday Times, 2001; Shone, 2002). Environmental degradation leads to the destruction of the environment and the loss of valuable natural resource systems.

To comply with these changes, business has to be aware of the environment in which it operates and of environmental issues that could affect business operations and the surrounding environment. To achieve this, all employees in business should be trained to be aware of their own work environment and the effect on the environment of their associated business activities. They should also be taught how to manage them appropriately. Participation in any environmental decision making requires environmental literacy and skills. "Developmental and educational programmes are therefore necessary to promote economic growth, social welfare and

environmental awareness” (Department of Environmental Affairs and Tourism, 2001). Training in environmental awareness will equip the staff in a business to appreciate and protect the environment. Training programmes addressing this need are *not* presently aimed specifically at business, but rather form part of other existing academic training programmes (e.g.: environmental management diplomas and degrees).

The *main aim* of this research project is to establish whether a South African Qualifications Authority (SAQA) registered environmental awareness training programme aimed specifically at business exists, and, if no such programme exists, to design a generic training program based on unit standards on environmental awareness for business to meet this need.

This study is *important* to business, trainers and environmentalists, because there is no readily accessible information currently available to them as to whether there is in fact a registered environmental awareness training program aimed specifically at business.

Environmental awareness training is important to all members of the business community, regardless of their position within the business, because without this awareness training, they would not be able to identify and prevent any actions that could cause environmental degradation. Through this omission they would inadvertently destroy natural resources and damage the reputation of their business. Through training, they would comply with the relevant environmental legislation.

A SAQA-registered environmental awareness course ensures that the participants gain academic credits in terms of the National Qualifications Framework (NQF) and that business can claim some compensation for the training given to staff from the skills development levy paid monthly in terms of the Skills Development Act (No. 97 of 1998). The skills levy was instituted to encourage businesses to train staff to acquire new skills and competencies. On completion of this study, trainers will either know where to access a registered training programme on environmental awareness targeted specifically at business, or, should no existing training programme exist, be able to access the appropriate training programme based on unit standards which will be designed as part of this study.

In the next section the research problem will be formally set out.

2. Statement of the problem

Environmental awareness means that a person shows a heightened perception as well as an understanding and appreciation of the environment. To be environmentally aware, we must acquire the requisite knowledge and understanding of the structure of the environment and how it functions. Basically, environmental awareness recognises all the natural elements surrounding us, namely the atmosphere, the hydrosphere, the lithosphere and the biosphere, in all its diversity. It requires that we understand the interrelationships between these spheres and their components, and how they function, and that we realise that the interaction between the bio-physical and socio-cultural components of the environment could cause environmental problems.

To be environmentally aware, people must have some knowledge of the environmental laws and structures (e.g. the National Environmental Management Act (Act 107 of 1998), ISO 9000, ISO 14000) together with the skills and tools, such as environmental risk assessment, necessary to apply this knowledge for the protection of the environment.

The main elements of environmental awareness are indicated in Table 1. In the first column of the table, some of the attributes required before a person can be regarded as being environmentally aware are listed. The second and third columns list some of the environmental tools and skills available to people for managing the environment. An environmental awareness training program should address these aspects during the training.

In a business environment, some or all of these areas are affected either directly or indirectly by business activities. To be aware of the impact of a business's activities on the environment requires that all workers be trained to identify these activities and know what remedial action to take to eliminate or reduce their impacts. An environmental awareness training program for business must address these topics and issues, as environmental awareness is an integral part of environmental management. To acquire the above knowledge, it is necessary to receive the appropriate environmental awareness training. The main aspects, which should be covered during an environmental awareness training programme are listed in Table 1.

Table 1: The main elements of Environmental Awareness.

Environmental Awareness		
Fundamentals of environmental awareness (*)	Environmental perspectives (**)	Environmental management skills and tools (***)
<ul style="list-style-type: none"> *Comprehend what the environment consists of (i.e. structure) *Understand how the environment works (Function) *Perceive the relationship between the bio-physical and the socio-cultural parts of the environment *Appreciate that the interaction between the bio-physical and the socio-cultural components can cause environmental problems *Realise that these problems have to be solved by means of effective management of the environment *Understand water, air, noise and light pollution and their influence on biodiversity * Waste management 	<ul style="list-style-type: none"> * Environmental law * Strategic environmental assessment * “Triple bottom line” * Environmental economics * Environmental communication reporting * Green management * Role of business * Environmental Education and training 	<ul style="list-style-type: none"> * Terrain evaluation * Environmental risk assessment * Strategic impact assessment * Environmental impact assessment * Social impact assessment * Environmental management plans * Environmental management systems * Environmental auditing * Environmental monitoring * Environmental rehabilitation

(Source: R.A.U. - Master's Environmental Management class notes, 2002)

Workers on the different management levels have different abilities and needs in terms of acquiring skills and knowledge.

Workers on the three management levels typical of an organisation should be trained in the relevant skills and acquire the knowledge applicable to those relevant spheres.

(Relate the categories of workers below to the areas of training in skills and knowledge as recorded in the three columns in the table above):

(*) Lower management level; (*) + (**) Middle management level; (*) + (**) + (***) Top management level

The column entitled “Fundamentals of environmental awareness” indicates some of the skills, values and insights that must be acquired in order to become “environmentally aware”. The second column indicates what training to undergo in order to acquire this level of environmental awareness. The third column indicates the environmental management skills and tools necessary for this level of environmental awareness.

In this research, the design of a generic environmental awareness training program will focus specifically on the training of employees in business, because they are directly involved in many of the processes that impact on the environment. A generic course design will cater for the different aptitude levels found in business. This research will also provide business, environmentalists and trainers with the information as to where to gain access to a registered environmental awareness-training programme aimed specifically at business, if one indeed exists, or alternatively to provide the trainees with such a programme specifically designed to meet this need.

This research will specifically investigate

whether a SAQA-registered environmental awareness training program specifically aimed at employees in business presently exists. The training programme must be a SAQA-registered training programme because it has nationally accepted standards, measurable specific critical outcomes, and a specific number of academic credits that can be obtained by the trainee on the successful completion of the programme.

The following steps will therefore be undertaken:

1. Establish the presence or not of a SAQA-registered environmental awareness training programme based on unit standards specifically targeted at business (business in general terms and not industry-specific). To accomplish this, the register of qualifications and unit standards at SAQA will be examined.
If there is *no record* in this register, then it can be assumed that no such programme has been registered.
2. Contact large organisations such as the Department of Environmental Affairs and Tourism, the Hospitality and Tourism Sectional Education and Training Authority (SETA), the Health and Welfare SETA, the Society and Environment Standard Generating Body, ESKOM and Anglo American to determine whether they are in the process of developing such a course for registration or have knowledge of one being developed. This step must be carried out to avoid duplication as training programmes and unit standards cannot be provisionally registered with SAQA and no records of these being developed are kept prior to registration. A requirement for appropriately identifying an organisation as a source of information regarding environmental assessment courses would be that it should be known to be active in environmental training.
3. If a registered SAQA training programme **is** found, then this research project will be terminated because the main aim of this research is to establish whether there is such a SAQA registered training programme.
4. If there is **no** such training programme, then one will be designed to meet this need. This process will be dealt with in two parts (the first part of the process in section 3 [background definitions and concepts] and the second part in section 5 [the actual design process]). The SAQA structures, functions and definitions will be explained initially to give the reader the necessary background as to how SAQA and NQF inter-relate. The concept of a “unit standard” will be elaborated upon in this section.
In the actual design process, the following steps will be followed:

- a) Choose an appropriate design model for the design process to guide the designer. A model is a simplified or abstract representation of a process, device or concept which is designed to help understand a problem, process or situation (Rothwell & Kazanas, 1998).
- b) Identify the target group for which the course will be designed (e.g. the hierarchical level in business) and find out as much as possible about the group (identify the profile of the learner group). This will provide the key characteristics of the target group, which are needed in the design process to facilitate the transfer of learning.
- c) Define the design criteria and parameters necessary for the development of an environmental awareness training programme specifically for business. This step lays the foundation on which the programme is designed. It sets out the designer's assumptions in developing the programme.
- d) Define the scope of the proposed environmental awareness training programme. In this step, the subject matter of the training programme is decided upon.
- e) Define the design parameters of the proposed training programme. The design parameters demarcate the design boundaries.
- f) Define the objectives of the proposed environmental awareness training programme. It is against the definitions of these objectives that the programme will be evaluated.
- g) Define the rationale/programme clients. Designing a training program without having the proposed clients for the programme in mind is futile.
- h) Decide on a proposed training programme outline. This outline will guide the designer in the development of the course.

The proposed environmental awareness-training programme will be designed according to the above. It will be made up of a number of unit standards according to SAQA requirements, each being thought of as a "training module" that has a set of outcomes that must be achieved by the learner.

A typical instructional design model (Gough, 1996) followed by many course designers is illustrated in Figure 1. This model, which illustrates the steps normally followed until completion of a training programme, will be followed during the design process of the proposed generic environmental awareness training programme. However, the design process in this document will terminate at the final design phase and will not be included in the developmental phase of the instructional material.

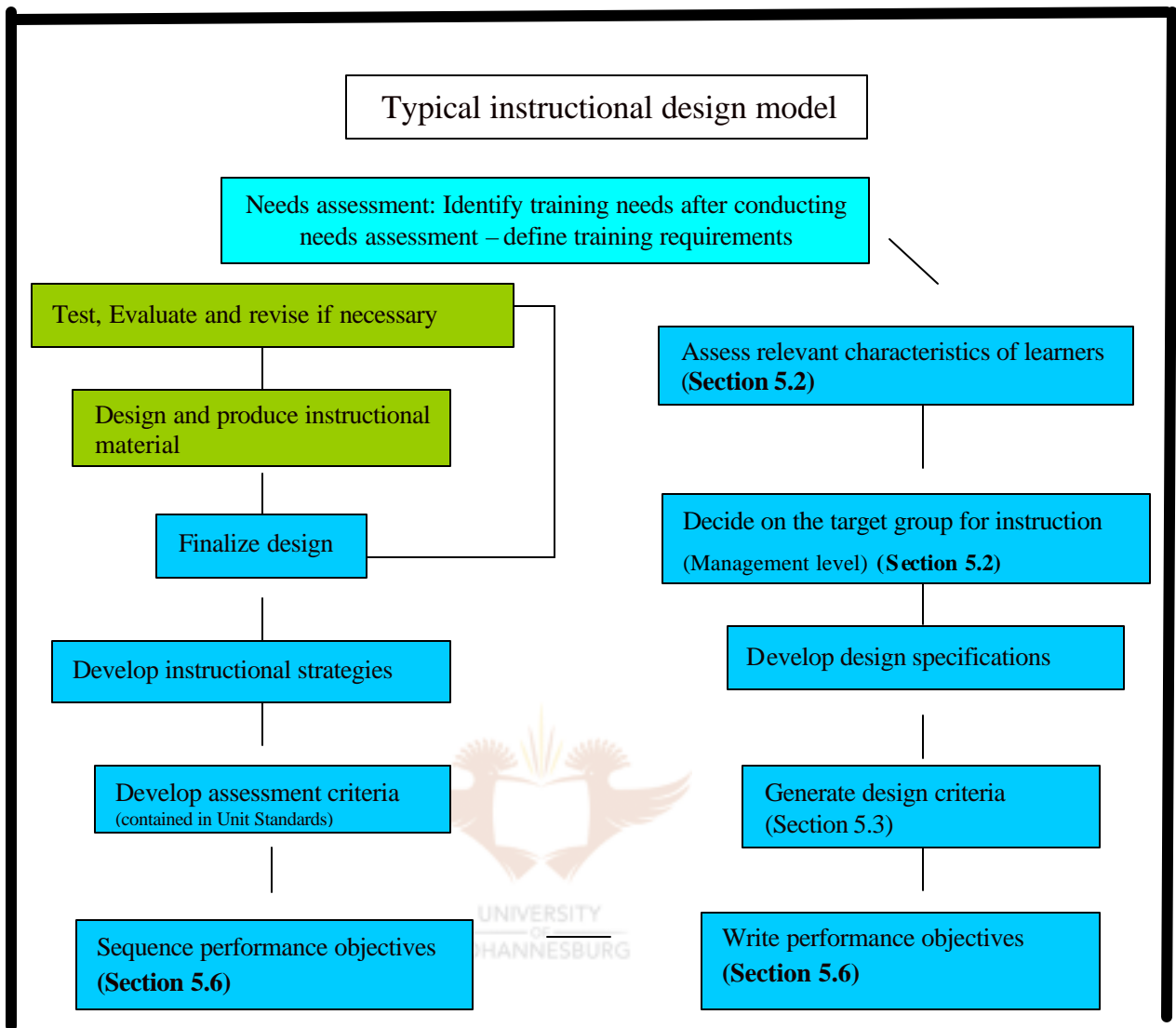


Figure 1: The steps normally followed in an instructional design process.*

(source : Adapted from Rothwell and Kazanas, 1998)

* Because only a generic framework is being developed for the purposes of this Mini dissertation, not all of the steps in Figure 1 have been included in the discussion of the design process in Section 5 of this mini dissertation. The actual steps in Figure 1 that are discussed in Section 5 are coloured in **blue**.

Because a unit standard is only meant to guide the trainer as to what should be known to the learner by the end of the training, the actual training material will not be developed in this project. It is the “map” to the “destination”. Each trainer must develop material unique to the training situation. The course framework that will be developed will guide the trainer in developing appropriate training material.

The organisational structure and functioning of SAQA will be discussed in the following section. This is necessary to enable the reader to understand how the SAQA organisation functions and how the individual SAQA bodies interact with each other and society. The functioning of SAQA is governed by legislation (South African Qualifications Authority Act (No. 58 of 1995)). It is important that the reader should understand how SAQA influences all aspects of training and the design of the training material. The SAQA Act empowers SAQA to prescribe the format of the training material to be developed and how training should be carried out in South Africa. SAQA is a newly-formed, dynamic body, which is still in its infancy.

To refresh the reader's memory, environmental awareness, **in the context of this document**, is the basic recognition of all the natural elements that surround us, namely the atmosphere, the hydrosphere, the lithosphere and the biosphere (in all its diversity). It involves an understanding of the interrelationships between and within the respective spheres, as well as of how they function. It also acknowledges that the interaction between the bio-physical and socio-cultural components of the environment can cause environmental problems.

The next section deals with the organisational structures of the South African Qualifications Authority (SAQA).



3. The South African Qualifications Authority (SAQA) and its interrelationship with the National Qualifications Framework (NQF)

From the statement of the problem (Section 2), it can be seen that in order to develop a SAQA-approved environmental awareness training programme course framework it is necessary to understand a number of concepts and definitions.

3.1 The South African Qualifications Authority (SAQA)

A new educational system emanated from the promulgation of the South African Qualifications Act (No. 58 of 1995). This Act has dramatically changed education and training throughout South Africa. The Act required the government to set up a totally new education system, which is more democratic and inclusive than the previous system. It is an *outcomes-based* system with stakeholder participation. Stakeholders, regarded as anyone who could have an interest in the process, are now required to provide inputs in all qualifications before such a qualification can be approved.

The body created by SAQA Act (No. 58 of 1995) to oversee the registration of all qualifications is called the South African Qualifications Authority (SAQA). The basic structure of SAQA is illustrated in Figures 2 and 3. These figures indicate how the different structures are set up in terms of the SAQA Act, how they interact with each other, their position in the hierarchy, as well as their functions. The responsibilities of each body are also indicated in figures 2 and 3.

3.1.1 Functions of SAQA

SAQA is the **executive body** and regulates the functioning of all the other bodies. It is made up of approximately 29 persons who are appointed by the Minister of Education and Labour.

3.1.2 Bodies created by SAQA

The **National Standards Body (NSB)**, the **Education and Training Quality Assurance Bodies (ETQAs)** and the **Standards Generating Bodies (SGBs)** are bodies set up by SAQA and report to SAQA. The NSBs report to SAQA while the SGBs report to the NSBs.

3.1.3 Subcommittees created by SAQA

SAQA has also set up different subcommittees. A Chief Executive Officer (CEO) coordinates the day-to-day operations of SAQA. The CEO has set up three major departments responsible for the proper functioning of the organisation to ensure that the requirements of the appropriate legislation are complied with.

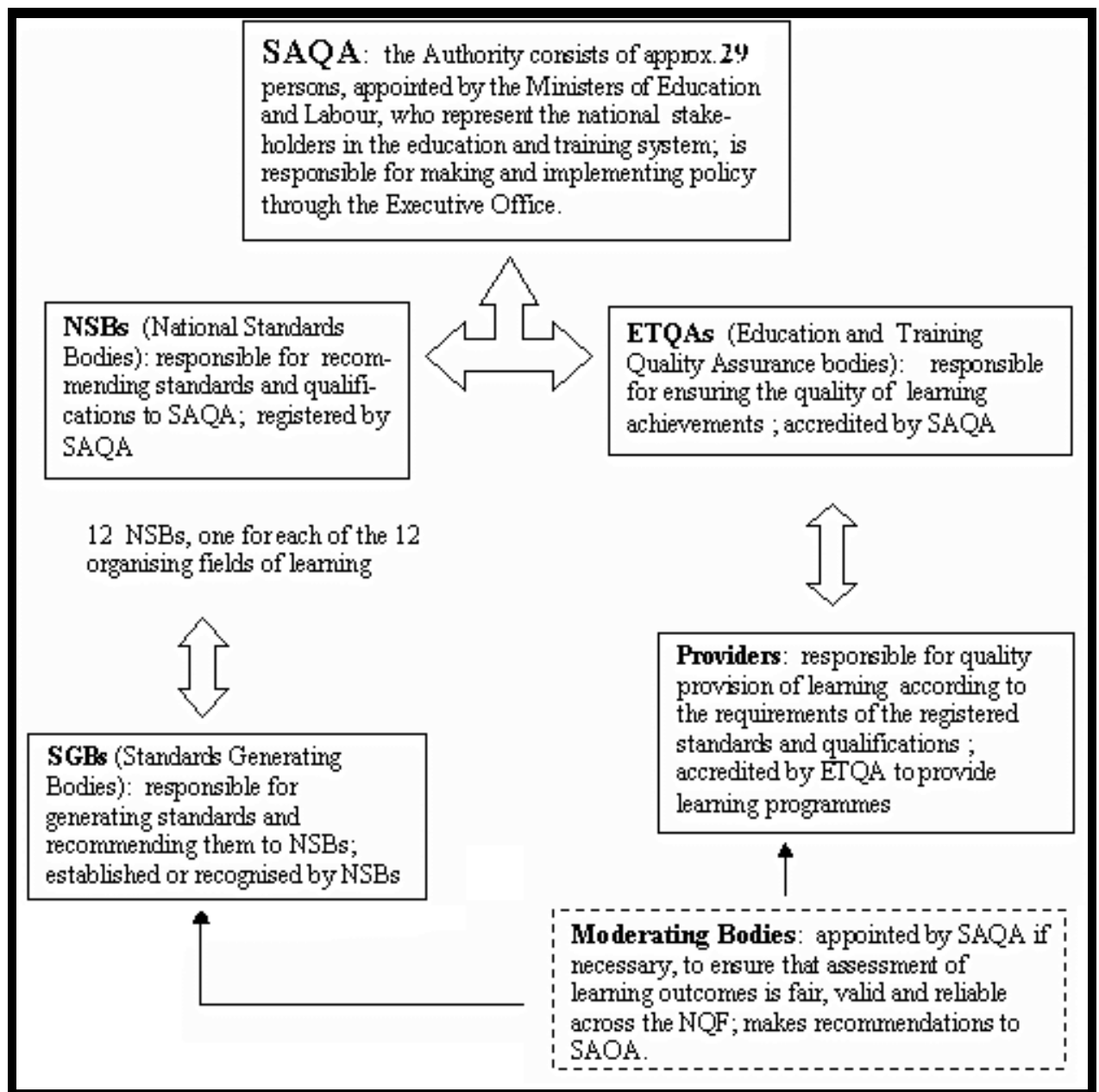


Figure 2: The basic infrastructure of the SAQA (source: SAQA: www.saqa.org.za).

SAQA co-ordinates the activities of the other bodies in this new system of education. The different departments and their management structures within the SAQA organisation are indicated in figure 3. Also indicated is the interaction between the NSBs, the SGBs and SAQA.

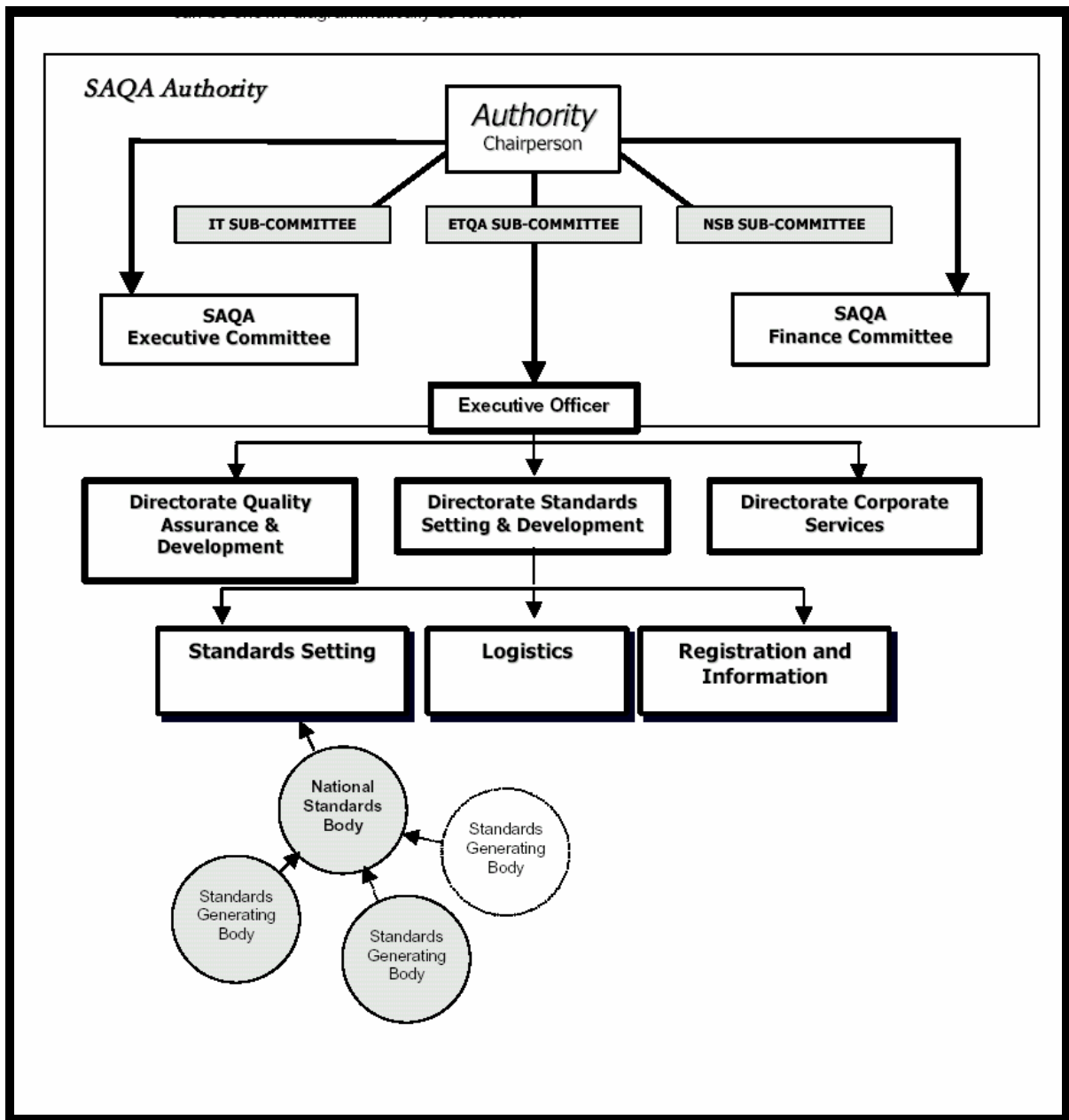


Figure 3: The organisational hierarchy and structure of SAQA showing the position of the NSB and the SGBs (source SAQA: www.saq.org.za).

Figure 3 sets out the organisational structure of SAQA, indicating the hierarchy within the system and how each entity interacts with the other. The NSBs, SGBs and ETQAs will be discussed later in this section. It will be noted in figure 3 that there are a number of NSBs and SGBs (one for each organising field). There are 12 organising fields - deemed to cover all aspects of human activity. (Refer to Table 2.)

The South African Qualifications Authority (SAQA) was charged with setting up additional structures (e.g. NSBs and SGBs) to facilitate the registration of qualifications. The SAQA Act (No. 58 of 1995) also established the National Qualifications Framework (NQF).

3.2 The National Qualifications Framework (NQF)

Isaacs (2000) defines the NQF as “ a lifelong learning system that brings together South Africans from a variety of socio-economic backgrounds representing a variety of worldviews, thinking, practice and experience to negotiate and define quality through the synthesis of these”. According to the SAQA Act (No. 58 of 1995), the NQF is the set of principles and guidelines by which records of learner achievement are registered to enable national recognition of acquired skills and knowledge, thereby ensuring an integrated system that encourages life-long learning (Anon. 1999: [www.saqa.org.za \south african qualifications authority.htm](http://www.saqa.org.za/south%20african%20qualifications%20authority.htm))

The objectives of the NQF are outlined in the SAQA Act (No. 58 of 1995), G[p.1] as follows:

- to create an integrated national framework for learning achievements
- to facilitate access to, and mobility and progression within education, training and career paths
- to enhance the quality of education and training
- to accelerate the redress of past unfair discrimination in education, training and employment opportunities
- to contribute to the full personal development of each learner and the social and economic development of the nation at large.

3.3 Levels of the National Qualifications Framework (NQF)

SAQA has adopted an eight-level framework. Level 1 is the least complex (General Education and Training - National Certificates) and level 8 (Higher Education and Training - Doctorates) the most complex (Table 3, p.28). These levels indicate the exit level of a qualification (e.g. awarding a certificate or degree after completion of studies). As indicated in Table 3, the levels are divided into three bands, namely; General Education and Training (level 1), Further Education and Training (levels 2 to 4) and Higher Education and Training (levels 5 to 8). These bands will be referred to later in this document.

Qualifications and unit standards registered on the NQF are described in terms of the learning outcomes/competencies that the qualifying learner is expected to demonstrate (SAQA). Meyer (1996) defines a competency as “the integration of knowledge, skill and value orientation, demonstrated to a defined standard in a specific context”.

In this document, outcomes and competencies are regarded as synonymous. Each level on the NQF dictates the complexity of material required to be mastered by the learner. A unit standard must be set at a specific level before registration can take place (e.g. level 4).

3.4 The National Standards Body

The National Standards Body (NSB) is one of the bodies set up in terms of the SAQA Act (No. 58 of 1995) and is responsible to SAQA. There are 12 NSBs representing various disciplines. Each NSB is responsible for a specific area/field of study, termed an organising field (Table 2 hereunder). These organising fields have been accepted by SAQA as representing all areas of human activity in South Africa and are sometimes referred to as organising fields.

Table 2: The 12 National Standard Bodies listed in the SAQA Act (No. 58 of 1995).



NSB 01: Agriculture and Nature Conservation
NSB 02: Culture and Arts
NSB 03: Business, Commerce and Management Studies
NSB 04: Communication Studies and Language
NSB 05: Education, Training and Development
NSB 06: Manufacturing, Engineering and Technology
NSB 07: Human and Social Studies
NSB 08: Law, Military Science and Security
NSB 09: Health Science and Social Services
NSB 10: Physical, Mathematical, Computer and Life Sciences
NSB 11: Services
NSB 12: Physical Planning and Construction

These organising fields are not based on traditional disciplines or subject areas; nor are they based on economic sectors. There are normally 36 members in each NSB. They are members of the state, organised business and labour, providers of education and training, critical interest groups and community leaders. Figures 2 and 3 indicate the positions of and the interaction between the various SAQA structures and the NSBs.

The NSBs are ultimately responsible for the unit standards submitted and recommended for approval. The various NSBs oversee the generation and registration of unit standards in the different organising fields.

The NSB must ensure that proposals for qualifications and unit standards meet the NQF transformational objectives of access, portability, and articulation, as well as the other technical requirements for registration. Furthermore, the NSB must also ensure that all consultation process requirements have been met.

Through a consultation and a nomination process, the various NSBs have registered a number of Standard Generating Bodies (SGBs) whose task it is to generate qualifications and unit standards for their discipline (Figure 2, p.19). Each NSB supervises the activities of its own SGB, as illustrated in Figure 2, p.19. Each organising field (mentioned in Table 2, p.22) has its own SGB and NSB.

To summarise: Each organising field has its own NSB and SGB. The NSB co-ordinates the activities and supervises its own SGB. The NSB is responsible to SAQA.

3.5 Standard Generating Bodies

Isaacs (2000a) states that in addition to generating qualifications and standards, SGBs should also update and review standards, recommend qualifications and standards to the NSBs, recommend criteria for registration of assessors and moderators, and perform such other functions as may from time to time be delegated by its NSB. Standard Generating Bodies (SGBs) undertake the generation of qualifications and unit standards.

The standards setting process proceeds through three main stages:

- Analysis and planning stage
- The development of qualifications and standards stage and the quality assurance stage
- The various NSBs recommend that qualifications and unit standards be registered by SAQA on the NQF.

SAQA then registers the unit standard and enters it into its register.

One of the functions of the SAQA Act (No 58 of 1995) is to ensure that standards and qualifications registered on the NQF are nationally and internationally comparable. As required by the SAQA Act (No 58 of 1995), this is achieved during the consultation stage. All drafts are published in the Government Gazette and on the SAQA website for public comment before they can be registered. This is part of the consultation process that is prescribed in the SAQA Act (No 58 of 1995).

3.6 Education and Training Quality Assurance

Education and Training Quality Assurance bodies (ETQAs) evaluate the learning programmes of different providers in a process of accreditation to ensure that learners have displayed the learning outcomes required for that qualification or standard after training (quality assurance functions). (SAQA, 2000).

The functions of ETQAs include the following:

- Accrediting providers
- Promoting quality amongst constituent providers
- Monitoring provision of training
- Evaluating assessment and facilitating moderation among constituent providers
- Registering assessors
- The certification of learners
- Co-operating with relevant moderating bodies
- Recommending new standards or qualifications to NSBs or modifications to existing standards and qualifications
- Maintaining a database
- Submitting reports to SAQA.

ETQAs do not set standards; they assure the quality delivery and assessment of registered standards and qualifications. All qualifications and standards must be registered with SAQA.

3.7 Credit system used by SAQA

SAQA uses a credit value system based on the idea that one credit equals 10 notional hours of learning (learning time that it would take an average learner to meet the defined outcomes defined in the unit standard). In each case, the credit value must be justified in context. Relevant considerations would be contact time, time spent in structured learning in the workplace, individual learning, and assessment.

3.8 Unit Standards

Unit standards are discussed here again, but in more detail than in the previous section, to clarify the reader's understanding of a unit standard and its purpose in terms of the NQF.

Unit Standards are defined in the SAQA Act as registered statements of desired education and training outcomes and their associated assessment criteria, describing the quality of the expected performance together with administrative and other information specified in the NSB regulations. The purpose of a unit standard is to provide guidance to the

- assessor as to the evidence that must be gathered during assessment
- learner as to the learning outcomes that must be achieved
- provider and / or materials designer as to the learning materials or learning experience to be prepared to assist the learner in reaching competence. (Isaacs, 2000)

A unit standard has a number of specific learning outcomes that must be achieved by the learner before the learner is considered to have successfully completed the unit standard. Unit standards are outcome-based and learners are required to focus on the desired end result of each learning process (e.g. it is a result-oriented approach with continuous assessment). SAQA defines the term **outcome** as “the contextually demonstrated end-products of the learning process” (Ramphela, 1998). Thus, on completion of each training session, the learner must demonstrate what has been learnt. To be adjudged as having successfully completed a unit standard, the learner must satisfy an accredited assessor that all the set outcomes have been achieved. A registered unit standard can be used independently. It has a prescribed number of credits that can be earned once it has been completed successfully.

Before a training programme based on unit standards can be registered, a process of wide consultation with all relevant stakeholders in that field of interest must take place.

3.9 A qualification

A qualification is defined by Isaacs (2000a) as “a planned combination of learning outcomes with a defined purpose or purposes” (p.8). A qualification is made up of a number of unit standards. A qualification could include unit standards that have not been specifically drafted for that qualification. Any other registered unit standard could be used. The number of credits that can be achieved depends on the number of notional hours of learning that it takes to complete the training programme.

According to SAQA, the concept, **notional hours** of learning, refers to the learning time that it would take an average learner to meet the defined outcome. It includes concepts such as:

- contact time
- time spent in structured learning in the workplace

- individual learning
- assessment

A registered unit standard will have a nationally-accepted standard and an academic credit value that can be obtained on the successful completion of the programme. The standard referred to above, means that the registered programme has been accepted by all the relevant stakeholders in the field of interest throughout the Republic as meeting their expectations.

A compulsory requirement for a qualification stipulated by SAQA reads as follows:

Wherever the Further Education and Training Certificate (FETC) is awarded, qualifications leading to it will have to include the following as a minimum:

Each Education and Training Certificate (FETC) will constitute a minimum of 120 credits with a minimum of 72 credits being obtained at or above *level 4*, and in the case of certificates, 120 credits, a maximum of 48 credits being obtained at *level 3*. In keeping with section 8 (2) of the National Standards Body Regulations, a qualification consisting of fewer than 120 credits may be considered if it meets the requirements as set out in regulation 8 (1) and complies with the objectives of the NQF, as contained in section 2 of the Act. The regulations also have the following compulsory requirements:

- 20 compulsory credits in Language and Communication which must be obtained in one of eleven official languages provided for by the SA Constitution of 1996 (Act 108 of 1996) at level 4. All the holders of an FETC will have achieved the same outcomes as indicated by 20 compulsory credits, but these may be achieved in any one of the eleven official languages.
- 16 credits in mathematics which must be obtained at level 4. The mathematics outcomes, as indicated by 16 credits, may be obtained in different contexts.

The proposed environmental awareness training programme will fall in this band (refer to Table 3, p.28).

3.10 Reasons why a generic Environmental Awareness Training Programme in Business should be developed

The concept of a “generic” training programme is introduced at this point, because there is no universally-agreed-upon hierarchical framework for classifying an organisation, according to Robins (1990). Handy (1996) agrees and commented, “everywhere companies are restructuring, creating integrated organisations, global networks, and ‘leaner, meaner’ corporate centres”.

In this document, it will be accepted that there are **four** broad hierarchical levels within an organisation, namely:

- executive management/top management,
- middle management,
- lower management, and
- support staff, general workers and contract workers (Figure 4, p.37).

For the purposes of this document, training will be aimed at the lower management level. The complexity of the training material for an executive management level training programme would differ significantly from the training material for general workers. Learning programmes can be generic, developmental in nature or designed to meet a specific purpose (Isaacs, 2000). A generic environmental awareness training programme can be adapted to suit all levels within an organisation and can achieve similar basic outcomes, but at different NQF levels.

The NQF has a number of levels (eight), representing a progression of the learning processes carried out and an increasing complexity in the capabilities employed. Levels allow “progression from any starting point through a meaningful pathway to higher levels” (HSRC, 1995). There are *three* broad bands and *eight* levels in the NQF as indicated in Table 3 (p. 28) and referred to previously on page 21). For this project, the design will be aimed at the “Further Education and Training” band. The proposed training programme will target lower management, the members of which would have attained a Grade 12 qualification. Therefore the Further Education and Training band of level 4 would seem to be the most appropriate level for the proposed course. The three bands are designated in Table 3 (p.28): Higher Education and Training, Further Education and Training and General Education and Training. The latter is the lowest band and is equivalent to Adult Basic Education and Training (ABET). It has three stages: the Foundation Stage (Grades 1 to 3), the Intermediate Stage (Grades 4 to 6) and the Senior Stage (Grades 7 to 9) (Olivier, 1999). The Further Education and Training Band (FET) is not compulsory for school leavers and includes Grades 10 to 12. Levels 2 to 4 fall into this band. Many workplace training programmes fall into this category. This was the rationale for choosing level 4 in this band (FET) for the proposed generic environmental awareness training programme. The Higher Education and Training Band (HET) caters for learners in academic institutions where they can receive diplomas, certificates or degrees (e.g. first degrees and doctorates).

Table 3: Eight levels encompassing all types of learning and achievements and the band descriptors defined in the NQF.

NQF LEVEL	BAND	QUALIFICATION TYPE	
8	HIGHER EDUCATION AND TRAINING	<ul style="list-style-type: none"> • Post-doctoral research degrees • Doctorates • Masters degrees 	
7		<ul style="list-style-type: none"> • Professional Qualifications • Honours degrees 	
6		<ul style="list-style-type: none"> • National first degrees • Higher diplomas 	
5		<ul style="list-style-type: none"> • National diplomas • National certificates 	
FURTHER EDUCATION AND TRAINING CERTIFICATE			
4	FURTHER EDUCATION AND TRAINING	<ul style="list-style-type: none"> • National certificates 	
3			
2			
GENERAL EDUCATION AND TRAINING CERTIFICATE			
1	GENERAL EDUCATION AND TRAINING	Grade 9	ABET Level 4
		<ul style="list-style-type: none"> • National certificates 	

Bands

What is also clear from the table is that the 8 levels are grouped into three (3) bands –

- General Education and Training (GET), covering Levels 1 and below
- Further Education and Training (FET), covering Levels 2 to 4
- Higher Education and Training (HET), covering Levels 5 to 8

These terms describe the different levels of education and training in South Africa

The basic structure of the new educational system in South Africa was discussed in this section. The National Qualifications Framework was introduced and the South African Qualifications Authority (SAQA) and the bodies created to enhance its effectiveness were discussed so that the reader would have a better understanding of the new educational systems now in place. Important concepts such as “Unit standards”, “Qualifications”, “Level descriptors” and “Bands” which will be encountered later in this document were introduced and explained to facilitate understanding. Likewise, the functioning of the NSBs and SGBs in the system was explained. The new education system is dynamic and is continually adapting itself to present-day situations. The discussion of the system must not be regarded as complete as only the aspects affecting this document have been introduced to assist the reader. The methodology used in this research will be discussed in the next section.

4. Data collection and methodology

This is not a quantitative research project and does not, therefore, use quantitative data. The main sources of information as to whether a SAQA-registered environmental awareness programme does in fact exist were obtained from the records of the registered qualifications and unit standards at the SAQA offices in Pretoria. This information is presently being updated by SAQA and being recorded in an electronic database to facilitate the public's access to it directly from SAQA's website (<http://www.saqa.org.za>). Unfortunately, on account of the updating process and the associated interruptions, access to and the retrieval of the relevant information at the offices proved difficult.

4.1 The Data required to gather the requisite information

Data needed for this research project:

- a) Whether there is a SAQA-registered environmental awareness training programme based on unit standards and specifically aimed at business
- b) If no registered environmental awareness training programme or unit standards are found, then establish whether such a programme is in the process of being developed.
- c) If **no** confirmation is obtained from SAQA of the existence of an environmental awareness training programme for business, and no other organisation is in the process of registering such a programme, *then* the relevant data needed to design such a programme must be collected.

4.2 How and where the data needed for this study was obtained:

- The first step was to establish whether SAQA had any record of an environmental awareness training programme specifically designed for business and based on unit standards in its register of approved unit standards and qualifications. This was done by searching through the records of registered unit standards.
- Thereafter, other relevant organisations were contacted (the Department of Environmental Affairs and Tourism, the Hospitality and Tourism Sectional Education and Training Authority (SETA), the Health and Welfare SETA, the Society and Environment Standard Generating Body, ESKOM and Anglo American) to establish if they had knowledge of any such training programme being developed for registration.

The organisations contacted were chosen because they were known to be active in producing environmental training material for their staff and the public.

4.3 Establishing whether an environmental awareness training programme registered with SAQA exists

The staff at SAQA dealing with the registration of qualifications and unit standards was contacted and a physical search of their records was carried out. At that time, there was no trace of an environmental awareness unit standard specifically for business. SAQA has subsequently established an electronic database. A recent search of this electronic database indicated a unit standard that addressed some aspects of environmental awareness. This environmental awareness unit standard for the cleaning industry (SRV-PIC-0-SGBHVCS (Annexure A)), was deemed to be aimed mainly at the cleaning industry and not the whole business sector. The unit standard focuses mainly on waste and waste management. The author did not therefore consider it to meet a requirement for this project, namely to be generic and applicable to all types of business.

4.4 Contact with other relevant organizations

Establishing whether there were any training programme which had not been registered.

- i. The Department of Environmental Affairs and Tourism was contacted to establish whether it was designing or in the process of registering an environmental awareness training program for business. The training staff of the department indicated that they had planned to develop such a training programme but that it had not been done.
- ii. The training staff at ESKOM were contacted but they indicated that although they conducted awareness training courses, they did not have a comprehensive environmental training programme; nor did they intend registering such a programme. The training material that had been developed would be adapted and used to suit the particular group that they were training (e.g. the prevention of air pollution during maintenance operations).
- iii. The environmental education section at Anglo American Mining was also contacted to ascertain if it had a training programme on environmental awareness for the business units of this company. This section indicated that it was in the process of having such a programme investigated for the mines belonging to the company but that this process was only in its infancy.
- iv. The Sector Education and Training Authority (SETA) for Hospitality and Tourism was also contacted on account of its past involvement in environmental education. It also indicated that it had no knowledge of any training programme on Environmental

Awareness. Likewise, the Health and Welfare SETA (Johannesburg) Gwas contacted, but it also had no knowledge of such a programme.

- v. The Society and Environment SGB (NSB 07) was contacted to establish whether it had any knowledge of any unit standards on environmental awareness being evaluated or developed. The training staff also had no knowledge of such a training programme or unit standards. (Annexure “B”).

4.5 Assumption and the shortcomings of the data collection process

From the above investigations, it was concluded that **no** SAQA registered environmental awareness training programme specifically aimed at business (as defined in this document) existed, and that **no** other organisation was in the process of registering an environmental awareness training programme.

A shortcoming in this process was that the main data source, namely the records maintained at SAQA, were difficult to access. Initially, no electronic database existed. An electronic database was subsequently established, but it was not always available because it was continually being updated. A SAQA staff member initially retrieved the information required for this research programme. An electronic search of SAQA’s database was carried out to verify the information.

The database on the SAQA website (<http://www.saqa.org.za>) is updated from time to time, but no indication of when it was last updated was available. SAQA has now changed its website design and has included a searchable database of approved unit standards and qualifications. When this project was launched in December 2002, information retrieval proved to be extremely difficult. This has drastically changed over the past six months, however, as the SAQA information technology systems have been updated and data retrieval has been made much simpler.

4.6 Conclusion reached during the data collection process

From the above investigations, **no evidence** could be found of a registered environmental awareness training program based on unit standards aimed specifically at business in general. The conclusion reached was that **no** registered training programme exists at present.

The purpose of the first part of this research was to establish whether a registered environmental training course does exist or not. As no evidence could be found of any such programme based on unit standards, the conclusion reached was that **none exists** at present.

Therefore, the design process for establishing a generic environmental awareness training course framework specifically targeting workers of all levels in business, and based on unit standards, follows.



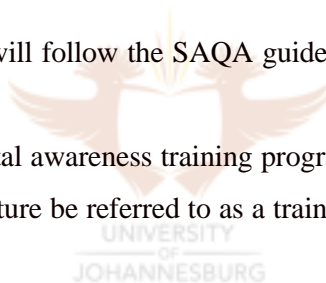
5. The design process for the Environmental Awareness Training Programme based on unit standards specifically for use in business

The following steps will be carried out:

- a) Define the design model
- b) Define the target group
- c) Establish the design criteria
- d) Define the scope of the training programme
- e) State the design parameters
- f) Define the objectives of the training programme
- g) Define the rationale/programme clients
- h) Proposed outline of the training programme (framework for drafting the individual unit standards)

The programme design process will follow the SAQA guidelines.

A SAQA-registered environmental awareness training programme based on unit standards aimed specifically at business will in future be referred to as a training programme in this document.



5.1 Define the design model and the suggested training method

The Open Theory Model was chosen for the design of the training programme because it recognises the critical importance of adapting to changes in the environment (Rothwell and Kazanas, 1998). The Open Theory Model is an instructional design process that is based on Open Systems Theory (Rothwell and Kazanas, 1998; Van Dyk et al., 1997).

An open system receives inputs from the environment, transforms these inputs through operations within the system to produce outputs in the environment, and receives feedback. It is therefore able to indicate how well these functions are carried out. Instructional design, in terms of the open system model, recognises that it is critically important to adapt to changes in the environment and to even anticipate such changes (Rothwell and Kazanas, 1998). When using this model, the instructional designers recognise that any corrective action taken to change one subsystem will affect other subsystems in the system. For an open system to survive, it must gain advantages from transactions with the environment (Rothwell and Kazanas, 1998).

The Open System Design Model will facilitate the training of learners in environmental awareness, because it allows for learner inputs and the adaptation of the training material during the training process.

Environmental awareness training aims at changing people's attitudes and values for the betterment of the environment in general, and also specifically, in this context, for the micro- and macro-environments of the business in question. By utilising Open Systems Theory in the instructional design, it is possible to show that change in one area can influence other areas in the environment for better or for worse. The Open Theory Model is therefore appropriate for environmental education because it is based on Systems Theory. In the design of the training programme, the Open System Model will be used to receive learner feedback and then to make the appropriate adjustments to the training material.

Because the open system model will be used in the design of the training programme, "action learning" training methods should be employed. This is because of the requirement to interact with the learner and to make constant adjustments to the training while training is in progress. Action learning requires the learner to actively participate throughout in the training programme. All of the varieties of "action learning" methods have one thing in common, namely a focus on helping people to learn through using work on an actual project or problem as the vehicle for learning (Yorks et al. 2002). According to Silberman and Auerbach (1998), active training programmes are characterised by activity, variety and participation which facilitate learning.

The use of action learning will enhance the learners "ownership" of the lessons learnt and promote a change of attitude with regard to the protection of the environment. These changes should translate into greater environmental awareness and environmental protection, both at work and at home. Open Systems Theory will be used throughout the course design and also during the course presentation because an open system receives inputs from the environment, transforms these inputs through operations within the system to produce outputs in the environment, and receives feedback indicating how well these functions have been carried out. This model reminds the designer to build flexibility into the training process and to make adjustments to the design of the training programme, depending on each situation. It creates a mindset for the designer.

5.2 Target group

Mager (1988) states that the identification of the target group for training is very important in the design process because it dictates the contents and structure of the training programme design. It also shapes the form in which the training programme is presented. Different learner groups have different learning requirements (e.g. adults as opposed to children). The target group determines various components of the training process such as the complexity of the training material, the type of training method to use, and the levels of authority.

The chosen target group for which the proposed environmental awareness training programme for business is to be designed in this mini dissertation is *lower management* (Refer to Figure 4, p 37).

The hierarchical structure is accepted as typical of any business and places the position of the target group in this Mini dissertation in the context of the total work force. The different categories and definitions as indicated are those used in this document generally and are fundamental to designing an appropriate environmental awareness programme for business.

According to Figure 4, the four basic levels in the hierarchical structure of an organisation are:

- Top management, which includes the chief executive officer, the chairman of the board and the board members
- Middle management, which includes senior managers and departmental heads
- Lower management, which includes junior managers, supervisors, senior foremen and senior team leaders
- The lowest organisational level, which includes general workers, casuals and contract workers.

Reasons for selecting the lower management group as the target group

The lower management level was selected for the purposes of this mini dissertation because its members work closest to any actual or potential cause of pollution in the workplace and could make a valuable contribution in preventing pollution during the planning and implementation stages of new projects. Lower level managers can modify existing work procedures in the workplace, thereby limiting potential and actual pollution problems. The staff members in the lower management level are able to influence worker attitudes toward their environment and practices within it by identifying potentially hazardous or inappropriate worker actions.

They are also in a position to make recommendations when it comes to changing or modifying workplace practices.

Adapting the training material according to the rungs of the workforce hierarchy

It is clear from Figure 4, showing the differentiation of the workforce of a business into different hierarchical levels, that there are far more workers in the lower management group than in the top levels of management and that the responsibility levels held by each group decrease from top management down the line to those on the lowest rung of the hierarchy.

When it comes to designing training material, the following should be kept in mind:

Once a training course has been devised for a particular group, it can be adapted to suit other groups on the different hierarchical levels. The complexity of the training material can be adapted, depending on the group of learners and their position in the hierarchy.

The top and middle management levels in an organisation have greater authority and take more responsibility than lower management. They need to develop more complex skills and to access information and knowledge so that they can carry out their functions properly. As such, an environmental awareness training programme for the middle and top levels of management should be much more comprehensive and complex than one for the lower management level.

A training programme designed for the lower management level in an organisation can easily be adapted to suit the higher management levels than *visa versa*. All that is required is that the material for the lower level group should be adapted by increasing its complexity.

On the other hand, a training programme designed for workers on the lower management level can be easily adapted to train the support staff/general workers on the lower rungs of the hierarchy in the organisation. This can be done by reducing the volume and the complexity of the training material.

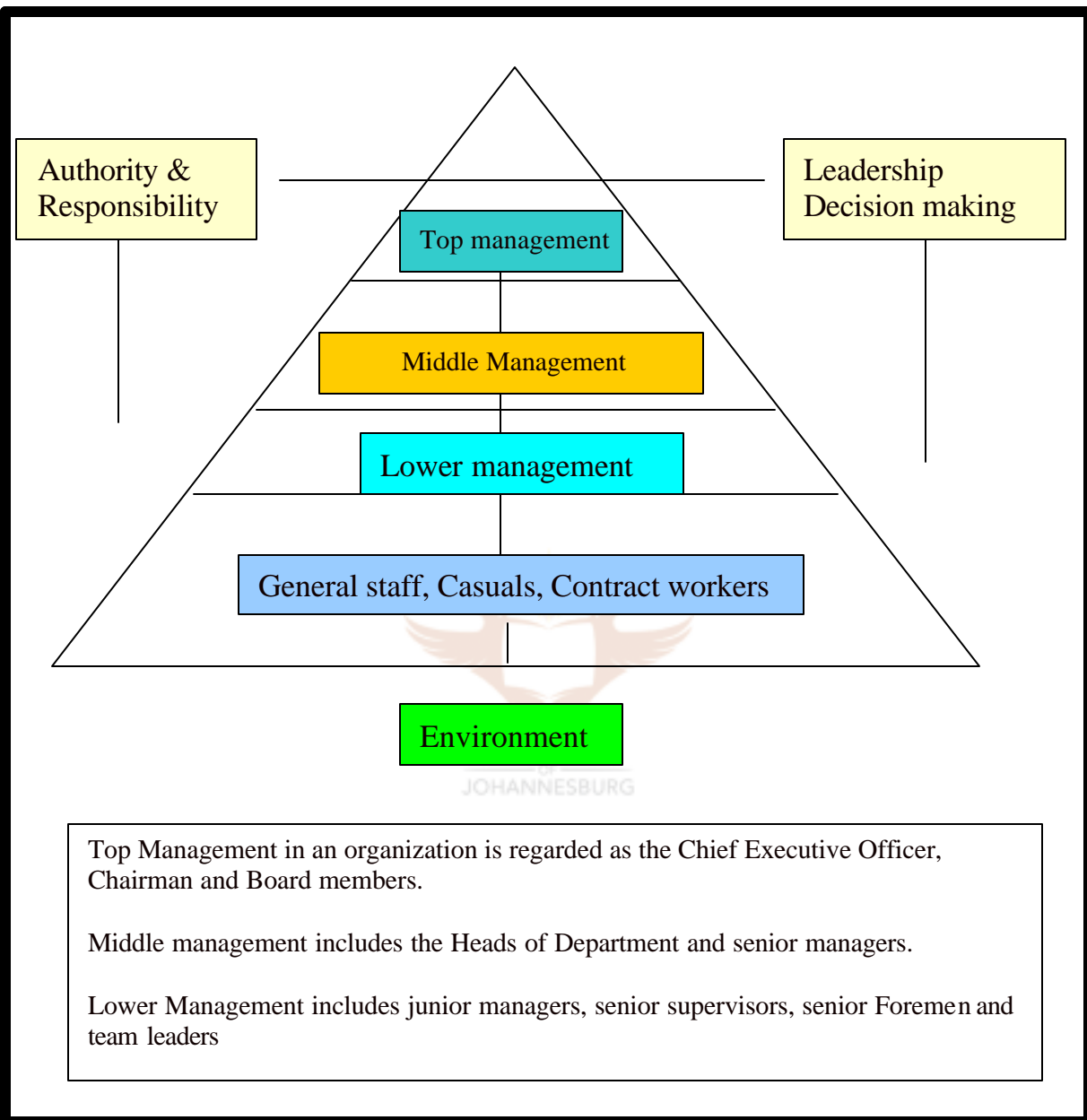


Figure 4: A typical organizational structure

5.3 Design criteria for the proposed Environmental Awareness Training Programme for Business

The design will be guided by the “Open Systems Theory Model” (Rothwell and Kazanas, 1998).

The following design criteria will be incorporated in the design of the new training programme:

- a) The training programme design will be generic in nature so that it can be adapted to accommodate all hierarchical levels within a business (i.e. upper, middle and lower management levels and general workers).
- b) The initial design will target the lower management levels, because this level of management is able to initiate basic changes that will improve the work environment. It is assumed that the learners at this level of management will be completely literate and have a reasonable and acceptable understanding of the English language.
- c) The design process will follow the relevant SAQA guidelines (SAQA. 1999) for drafting unit standards for registration. The SAQA format has to be rigidly adhered to or the unit standards will not be accepted by SAQA for consideration to be registered. The SAQA guidelines (SAQA. 1999) require that all unit standards submitted for registration **must** follow the rigid format as set out in Table 4. The headings listed in Table 4 must be used in the unit standard.
- d) The design will provide the learner with a number of opportunities to demonstrate that transfer of learning has taken place. This will allow the learner to be assessed according to the assessment criteria required by SAQA. All unit standards have a number of assessment criteria linked to them. The assessment criteria are designed to gather evidence as to whether the learner has achieved the required outcome/s successfully. The learner must be able to successfully demonstrate (using the criteria for these given unit standards) that he or she has mastered the section of training being assessed.
- e) The design strategy will include “action learning”. Action learning requires the learner to actively participate in all learning activities. Participation promotes the transfer of learning (Piskurich, 1993; Laird, 1985).

The headings listed in Table 4 are set by SAQA as a requirement for submitting unit standards for registration. SAQA will not accept a draft unit standard if it deviates from the format given in Table 4. Therefore the draft unit standards in this document follow this format.

Table 4: The standard headings required by SAQA in a unit standard.

<p>a) Title</p> <p>b) Logo</p> <p>c) Number</p> <p>d) Level on the NQF</p> <p>e) Credit(s)</p> <p>f) Field and sub-field</p> <p>g) Issue date</p> <p>h) Review date</p> <p>i) Purpose</p> <p>j) Learning assumed to be in place</p> <p>k) Specific outcomes</p> <p>l) Assessment criteria</p> <p>m) Accreditation process, including</p> <ul style="list-style-type: none"> • Moderation <p>n) Range statement(s)</p> <p>o) Notes, including</p> <ul style="list-style-type: none"> • the critical outcomes: <ul style="list-style-type: none"> ➢ Problem solving ➢ Team work ➢ Self-organization and -management ➢ Information evaluation ➢ Communication ➢ Use of science and technology ➢ Inter-relatedness of systems ➢ Learner and societal development • essential embedded knowledge, and • supplementary information

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The design criteria for the proposed environmental awareness training programme are also based on the principles of the National Training Strategy (N.T.S.). These principles are quoted for ease of reference (Meyer, 1996).

The N.T.S. “requires that all training programs should comply with the following principles:

- ❑ **Integration.** An integrated approach to education and training.
- ❑ **Relevance.** Learning should be responsive to national and organisational learning needs.
- ❑ **Credibility.** Learning should have national and international value and acceptance.
- ❑ **Coherence.** A coherent national framework of principles and certification should be developed.
- ❑ **Flexibility.** There needs to be flexibility in the system to meet the needs of individual learners and organisations.

- ❑ **Standards.** The outcome of learning must be expressed in terms of a nationally-agreed-upon framework of standards.
- ❑ **Legitimacy.** All stakeholders need to participate in the planning and co-ordination of standards and qualifications.
- ❑ **Access.** The system needs to provide maximum opportunity for entry to appropriate levels of learning and qualifications for all prospective learners in a way to facilitate progression.
- ❑ **Articulation.** Learners must be able to move vertically through the framework upon successful completion of accredited prerequisites.
- ❑ **Progression.** It should be possible for learners to pursue a personal learning path using learning processes applicable to their needs.
- ❑ **Portability.** The ability of a learner to transfer credits or qualifications from one learning institution or employer to another.
- ❑ **Recognition of prior learning.** Where learning has occurred through non-formal or informal ways, the system should provide for suitable assessment and recognition of such learning through the provision of credits” (Meyer, 1996, p.23-24).

5.4 The scope of the proposed training programme

The proposed training programme will include the following topics:

- The environment (Definition of the concept “environment” to include air, water, soil and bio diversity)
- All forms of pollution (e.g. air, water, soil, light and noise)
- Environmental law (e.g. all the laws applicable to the above subjects at an elementary level)
- The basic social aspects of environmental awareness and social responsibility
- The economic aspects of environmental awareness (e.g. the financial implications of disregarding environmental matters and including corporate financial reporting (e.g. the Triple Bottom Line)
- The practical implications of the sustainable use of natural resources and sustainable development in business

5.5 The design parameters for the proposed training program are summarised as follows:

- The programme must be generic, and after modification, be able to be used in all sectors and at all levels within an organisation.
- The proposed training programme will consist of a number of draft unit standards which, when combined, can constitute a qualification. Each unit standard will focus on a specific topic (e.g. air pollution). (An example of an approved unit standard is attached in Annexure “A”.)
- Each unit standard can be used independently.
- Each unit standard must be portable (enable learners to transfer the credits gained)
- The target population for the design process will be the lower management level within the organisation, as previously specified in this document (e.g.: This level will include junior managers, senior supervisors, foremen and team leaders.)
- The language that will be used for the proposed training programme is English: most of the target population at the lower management level should be able to understand, read, and write English without much difficulty.
- Learners will be regarded as having limited prior learning as far as environmental awareness is concerned. A learner in grade 12 receives limited environmental education.
- The training programme will be on the Further Education and Training (FET) band, (levels 2 to 4). (This is the second level on the NQF as indicated in Table 3 in Section 3, p.28). The NQF organising field for the proposed unit standards will be NSB 07: Human and Social Studies. The individual trainers themselves will develop the training material for the proposed training programme. Each individual trainer will establish the level of complexity of the training material in question before the programme is offered to the learners.
- The achievable credit will be according to the credit system used by SAQA. It is based on the idea that one credit equals 10 notional hours of learning. A “notional hour of learning” refers to the learning time that it would take an average learner to meet the outcomes defined in the unit standard (Isaacs, 2000b).

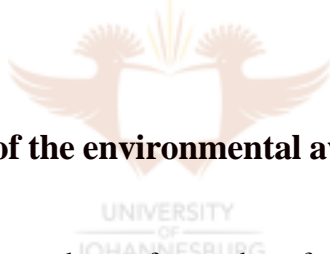
The trainer will have the freedom to use the unit standard as a basic framework for each training session and to add to or to reduce the content and complexity of the material, depending on the learners attending each training session. The trainer must, however, ensure that each learner meets the unit standard assessment criteria.

5.6 The objectives of the proposed training programme

The proposed training programme will provide the learner with a basic knowledge of the environment and enable the learner to meet the following listed course objectives.

After completing the training, the learner will be able to:

- ❑ identify and describe the environment in which he / she works and lives;
- ❑ identify and describe potential environmental problems, impacts and issues in the workplace environment and the areas surrounding the workplace;
- ❑ identify sources and potential sources of environmental pollution in that workplace environment;
- ❑ report an identified problem or potential problems in the workplace to the appropriate official in the organisation, in an appropriate and prescribed way, so that remedial action can be taken;
- ❑ take the necessary remedial action to eliminate, mitigate or control an identified environmental problem, in accordance with company policy and legal requirements;
- ❑ recognise the importance of sustainable resource utilisation and sustainable development.



5.7 The proposed outline of the environmental awareness-training programme

A training programme is normally made up of a number of sub-programmes or modules. The modules in this instance are termed **unit standards**. The unit standards are in a specific format, in accordance with the requirements of the NQF and SAQA. The standard headings and format that must be used are indicated in Table 4 on page 39. If this format is not used, SAQA will not accept the draft unit standard for consideration for registration.

To create a qualification, which will promote environmental awareness for the business sector and equip the staff in question adequately, a number of unit standards spanning a wide range of subjects must be included (e.g. air, water, noise, soil pollution and waste management).

To meet the needs of all types of business, the proposed environmental awareness training programme must provide training, which addresses these and other aspects of the environment. More complex training aids must be used when training the more senior staff members and those learners with higher academic qualifications. These aids should be in accordance with the relevant assessment criteria and on the appropriate NQF level.

5.8 Rationale / programme clients

The most important aspect that must be considered by a course designer before commencing with the process of designing a new training programme is to establish whether there is a training need and to define the client of such a programme (e.g. who will benefit from attending a training programme in environmental awareness in business).

Because the proposed training programme is generic and intended to address a number of environmental aspects across a wide spectrum of business, the staff primarily involved in worker protection will be most likely to receive the initial training. The Occupational Health and Safety Act (No. 85 of 1993) require businesses to appoint staff members to their safety committees. These staff members should also receive environmental awareness training.

The staff carrying out housekeeping tasks, stock management, waste management, quality control, purchases and any form of risk monitoring would benefit from environmental awareness training; so would administrative staff, accounting officers, all managers, development officials, top executives and board members. Some of the unit standards that address specific areas of the environment (e.g. air pollution and waste management) can be used for specialised staff training within a business.

The proposed training programme is progressive by nature, namely one module (unit standard) builds on the next. Successful completion of all the unit standards specified for the training programme will lead to the qualification. The qualification envisaged is a Certificate in Environmental Awareness for Business.

5.9 Certificate in Environmental Awareness for Business

It is envisaged that the following unit standards constitute a proposed qualification entitled **Certificate in Environmental Awareness for Business**. The proposed content for the programme is based on the author's personal experience, the elements illustrated in Table 1 (p. 13) and on Miller's model of major environmental and resource problems (Miller, 1996, p.20). The following proposed unit standards / modules will constitute the full qualification:

Module 1. The environment: a basic understanding of the environment

The learner will be able to:

- explain and discuss what is meant by the term 'environment';
- define 'environment' in general terms, verbally or in writing;
- define and discuss 'environmental awareness';
- describe the term 'work environment';
- list the different types of environment applicable to a business;

- explain the role of the community and the worker in the business environment and its protection;
- discuss the role of business in protecting the environment and the consequences of neglecting the environment in which it operates.

Module 2. Environmental awareness

The learner will be able to:

- define and discuss 'environmental awareness' in business;
- identify the stakeholders in environmental protection;
- discuss 'sustainable activities' in the workplace/business;
- identify the natural resources used in the production of goods and services in the business in question;
- estimate the consumption of natural resources in the workplace;
- list the waste products generated in the workplace/business in question;
- list the waste disposal methods used in the business;
- define 'pollution' in general terms;
- list possible sources of pollution in the business in question;
- identify areas where pollution could be reduced.

Module 3. Sustainable development and the environment

The learner will be able to:

- define 'sustainable development' and 'sustainable activities' and their effect on the environment;
- discuss the role of 'business' in sustainable development;
- discuss / debate sustainable development, the resources needed by the business to continue functioning properly, and how these resources affect the environment;
- assess present workplace practices and processes and determine whether they are compatible with sustainable development;
- evaluate whether the resources used in the business in question are sustainable;
- describe the impact of people on resource usage.

Module 4. Air pollution and air pollution prevention

The learner will be able to:

- define air pollution;
- identify sources of air pollution in the workplace;

- ❑ list ways in which air pollution can be reduced or eliminated in the workplace;
- ❑ evaluate the environmental policy of the business concerning air pollution;
- ❑ reflect on the impact of air pollution on the community and productivity.

Module 5. Water pollution

The learner will be able to:

- ❑ define water pollution;
- ❑ identify sources of water pollution in the workplace;
- ❑ discuss the basic requirements of the Water Act concerning water pollution and the workplace;
- ❑ conduct a water balance and water pollution survey in the business in question;
- ❑ correctly report on environmental problems and pollution to management, in accordance with the policy of the business.

Module 6. Light pollution, noise and noise regulations

The learner will be able to:

- ❑ define light and noise pollution;
- ❑ identify sources of these forms of pollution in the workplace and the environment;
- ❑ discuss/debate the environmental impact of these and other forms of pollution.

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Module 7. Soil and litter pollution

The learner will be able to:

- ❑ discuss soil and litter pollution;
- ❑ identify sources of soil pollution in the workplace;
- ❑ discuss litter and litter pollution;
- ❑ suggest solutions to these problems.

Module 8. Waste management

The learner will be able to:

- ❑ define waste management;
- ❑ discuss waste management in the workplace;
- ❑ discuss ways of limiting wastage;
- ❑ discuss methods of waste disposal;

The following modules/unit standards could be included in the proposed certificate course offered or as additional courses after completion of the core modules:

Module 9. The workplace: identifying environmental problems and finding solutions to these problems

The learner will be able to identify environmental problems in the workplace and find solutions to these problems.

Module 10. Environmental management systems, environmental audits / performance assessments

The learner will be able to explain and discuss environmental management systems, environmental auditing, and assessments.

Module 11. Business, Society and the Environment

The learner will be able to explain and discuss:

- ❑ the interaction between business, society and the environment;
- ❑ the role of society in protecting the environment and how this influences business;
- ❑ the role of business in environmental protection;
- ❑ the role society plays in regulating business activities that can impact on the environment.

Module 12. Environmental legislation and how it protects the environment:

The learner will be able to explain and discuss the general principles contained in environmental legislation.

- ❑ The Health Act, the Environmental Management Act, the Constitution, Local Government bylaws, Town Planning and Town Planning bylaws, ISO 1400, and the Occupational Health and Safety Act.

Designing a training programme is a creative process. The designer must rely on his/her past experience and knowledge of the subject matter. When designing a training programme, the designer will select topics/subject matter that he/she deems to be important for the learner both in the present situation and in the future. This will be done in the actual designing and drafting of the unit standards for the proposed environmental awareness training programme in the next section. The proposed unit standards will only be in draft form, because the registration process takes a considerable time to complete and changes are made to the content during the

consultative process with stakeholders. The proposed unit standards must be submitted to a full consultation process, as set out in the SAQA Act.

Although these unit standards will be in draft form and will be ready for submission to SAQA, they form a complete environmental awareness training programme for business in their own right and could be used by a trainer immediately. Trainers can therefore use them to develop and prepare their own training material. In the next section the unit standards will be drafted in the *prescribed* format ready for submission to SGB 07: Environment and Society Interaction.

The Open Systems Theory model, which was used during the foregoing process, will be applied in the following section. The model requires the trainer to *be alert to changes in the training environment at all times* and to the *learner's attitude during training*. *Appropriate changes must be made to suit the training*. During the transformation of the initial design into the strict format of the unit standards, the designer will build opportunities into the unit standards for the learners to provide adequate inputs into the training process. The learner outputs referred to in the model are the outcomes that the learner must reveal as having achieved. Learning outcomes are stipulated in each individual unit standard and these outcomes must be achieved before the unit standards can be regarded as having been successfully completed.

6. The design of the unit standards for the Environmental Awareness Training Programme for Business

The preparatory design work of the proposed training programme having been completed (Section 5), it will now be applied to the actual individual unit standards that will constitute the complete training programme (Certificate in Environmental Awareness for Business). During the drafting of the unit standards, all the preceding preparatory work will be used. The action/reaction aspect of the Open System Theory Model will be incorporated in designing the unit standards by allowing the trainer the freedom to alter the training methods should the need arise. The training outcomes may not be altered, however, as these are stipulated in each unit standard. The unit standards will follow the *strict format* required by SAQA. (Table 4, p.39, lists the headings that must be used.)

Before the draft unit standards are presented, a summary of what is meant by a **unit standard** is provided to refresh the reader's memory.

SAQA defines a unit standard as a document that describes:

- a coherent and meaningful outcome of learning (title) that should be recognised nationally;
- the smaller more manageable outcomes that make up the main outcome (specific outcomes);
- the standards of performance required as proof of competence (assessment criteria) and
- the scope and contexts within which competence is to be judged.

The unit standards, when combined, will constitute the “Certificate in Environmental Awareness for Business” with a credit allocation of 120 credits. The number of credits allocated to a unit standard is based on approximately *one credit being equivalent to ten notional hours of learning*. The draft unit standards are attached together with the proposal as to how they could constitute a full qualification.

The unit standards can be presented only as a draft as no unit standard can be created by one person. The time factor discussed in the previous section also precludes this.

The author has presented personal ideas on what each unit standard should contain. During the different consultation phases with all the relevant stakeholders (e.g. the NSBs and the SGBs), the

content may be changed, but the essential course design should remain unchanged. Any trainer given the unit standards will be able to use them to present the course. The trainer will, however, make use of his/her own training material customised for the specific training situation.

The trainer uses the unit standards as a guide when developing the training material. The assessment criteria are given to the learner for assessing his / her success in mastering the unit standard. Assessment must take place to ensure that the learner has mastered the prescribed outcome at the end of each section within the unit standard. Therefore continual assessment must take place during training.

Before drafting the unit standards, a decision was made to set the NQF level at level 4 (see Table 3, p.28). This decision was based on the description of what is required at this level. The SAQA Level Descriptors Regulations (NQF levels 1 to 4) of 2003 define a level descriptors NQF level 4 as follows:

A learning programme leading to the award of a qualification or unit standards at NQF level 4 shall develop learners who demonstrate:

- A. an applied competence with regard to-
- a fundamental knowledge base of the most important areas of one or more fields or disciplines, in addition to the fundamental areas of study;
 - an informed understanding of the key terms, rules, concepts, established principles and theories in one or more fields or disciplines;
 - an understanding of the organisation or operating environment as a system within a wider context;
 - an ability to apply the essential methods, procedures and techniques of the field or discipline;
 - an ability to apply and carry out actions by interpreting information from the text and operational symbols or representations;
 - an ability to use their knowledge to solve common problems within a familiar context;
 - an ability to adjust the application of a common solution within relevant parameters to meet the requirements resulting from small changes to the problem or operating context;
 - an ability to justify the change using relevant evidence;
 - a basic ability to gather relevant information, to analyse and to evaluate it; and
 - an ability to communicate and present information accurately and in a responsible way, either verbally or in writing.

- B. autonomy of learning in that they reveal -
- a capacity to take responsibility for their own learning within a supervised environment;
 - a capacity to make decisions about a line of action to follow and to take responsibility for those decisions;
 - a capacity to evaluate their own performance against given criteria; and
 - a capacity to take the initiative to address any shortcomings they find.

Members of the lower management level that was selected as the target group would all be capable of meeting the above requirements and successfully completing the assessments required for each unit standard. They would also have achieved some success in their work situation or they would not have been promoted to a management level.

The formal drafting of the proposed unit standards is based on all the information set out in the foregoing sections. The process is rigid and follows the requirements of SAQA. The required headings and positions in the sequence are set out in Table 4. The unit standards are in this particular format in order to assist the learners and trainers in their understanding of exactly what must be achieved by the end of the training programme. The assessors will also know exactly what must be assessed during training for a particular unit standard.

At this stage, the drafting of the proposed unit standards constituting the Certificate in Environmental Awareness for Business should commence. However, as explained previously, the unit standards are only in draft format and could take over a year to complete as they can only be formalised after a lengthy consultation process. It was therefore decided that the drafting stage for the unit standards would not be pursued and that the remaining aspects pertaining to this stage would fall outside this project.

Once the draft unit standards have been submitted to the Standards Generating Body (SGB), the author has no control over the process. The process for gaining registration of the draft unit standards would be as follows:

- Submit the draft unit standards to the relevant Standard Generating Body (SGB) for consideration.
- The SGB submits these draft documents to its National Standards Body (NSB).
- Once the NSB has approved the draft documents incorporating the changes, it publishes the unit standards for comment in the Government Gazette and on its Web Pages.

- After comments have been received and the necessary changes made, the unit standards are then submitted to the SAQA board for approval.
- If approved, the unit standards are registered and published for use. They are also then recorded in the SAQA's database of approved unit standards.

The unit standards designed for this mini dissertation have been drafted for the purposes of this document. They will not, however, be subjected to the developmental process, as set out above, whereby the training material is perfected as it passes through the hands of the various regulatory bodies to finally be presented as the actual training material.

Each individual trainer is responsible for developing his or her own unique training course. Trainers must ensure that they attain the prescribed learning outcomes, however.

The draft unit standards for the “Certificate in Environmental Awareness for Business” follow:

The first part, entitled “Certificate in Environmental Awareness for Business”, sets out the context of the certificate. The credit value indicated is a recommendation and will finally be set by SAQA. The value of 120 credits is the minimum value that can be allocated for a certificate and relates to the number of notional hours that a learner should take to complete the training (This was discussed in sections 3.3 and 3.5.). The subtitle “field” refers to the SGB that will deal with the draft once it has been submitted for consideration. The headings and format for the document are prescribed by the SAQA. Documents which are not in this format will not be accepted.

Each unit standard has a specific credit value allocated to it during the registration process. Recommended values have been allocated to this document but may be changed by the SGB or the NSB in question. The format for the section entitled “**Certificate in Environmental Awareness for Business**” is also in the *fixed format* required by SAQA. The unit standards that are combined to constitute the certificate may be used individually for other qualifications. The final stage in the design process, namely the drafting of the proposed unit standards that will constitute the “Certificate in Environmental Awareness for Business”, follows. Once the proposed unit standards have been drafted, the design process will have been completed and the purpose of the research would have been achieved. The framework will then be in a format that can be used by any trainer for developing the training material necessary for presenting the training programme.

The discussion of the process leading up to the actual drafting of the proposed course framework has been long and often confusing, because of the need to explain the different concepts (e.g. the NQF and the unit standards contained in the new educational system of outcomes-based education). By defining some of these concepts and frequently explaining them in detail, the reader should be given a better understanding of the system and the draft unit standards that follow.

To summarise the preparatory work for the actual drafting of the unit standards, the relevant steps are listed below:

- The target group for the proposed training programme identified
- The design criteria listed
- The scope of the proposed training given
- The design parameters set out
- The training objectives defined
- A course outline suggested
- The rationale for the course framework suggested

These steps are essential when developing a course framework as they provide the trainer with the complete picture necessary for developing the relevant course material. The unit standards that are developed hereafter provide the “road map” for both student and trainer / facilitator in order to achieve a sense of environmental awareness in the learner. The actual drafting of the unit standards is set out in the next section. These unit standards constitute the course framework.

6.2 The drafting of the proposed unit standards for the Certificate in Environmental Awareness for Business

The draft unit standards that follow are in the *prescribed format* and set out in terms of the headings as required by SAQA. They also include the information (e.g. the level descriptor (Section 3.3, p 21), the number of credits suggested (Section 3.7, p 24), as well as the organising field (Table 4, p.39) prescribed by SAQA when it receives a draft unit standard for submission to the SGB and NSB.

Before they can be submitted for consideration, the draft unit standards should indicate the information prescribed by SAQA. Examples of such information would be the title, level descriptor, number, and the suggested credit allocation. After discussions with officials from

SAQA, the organising field that was selected for the purposes of these draft unit standards was NSB 07 and SGB “Environment and Society”.

The number required for each unit standard is a unique reference number issued by SAQA. In this document, the numbers are in sequential order and used only for distinguishing each unit standard.

The purpose of each unit standard is stated in the context of the training course material / framework so that both the learner and the trainer/facilitator are aware of this.

The unit standards that will now be drafted, and could be combined to constitute a qualification, are in draft format only for the reasons stated previously. They should be accepted without much change by the SGB Environment and Society, however. The proposal for a certificate in Environmental Awareness for Business will first be drafted, followed by the unit standards that could constitute the certificate.

Title: **Certificate in Environmental Awareness for Business**

Field: Environment and Society: interaction

Level: 4

Credits: 120

Issued: (only available after submission)

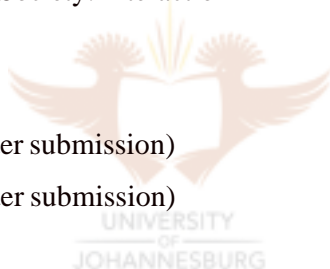
Review date: (only available after submission)

Rationale for the qualification

Environmental awareness in business directs the attention of the workers to potential environmental problems. It is, therefore, the first step in preventing industrial pollution and harm to the immediate environment. Since one of its outcomes is the protection of the environment, environmental awareness indirectly ensures a safe and healthy work environment for the workers employed in business.

Environmental awareness is only possible through learning. In this case, extensive knowledge of the environment is required. This is the first essential qualification for workers at all levels in an organisation to prepare them for furthering their studies in environmental conservation and protection.

This qualification provides the skills, knowledge and understanding required to effectively identify and become aware of environmental problems and issues in the workplace in industry, whether in micro, small, medium or large enterprises.



Purpose of the qualification

The purpose of this qualification is to provide learners, education providers, training providers and employers with the standard and range of learning required to effectively identify within the workplace and home environment environmental problems/concerns and issues, and to know how to deal with these in a practical way. What learners achieve in this qualification will serve as a basis for further learning which will allow them to engage more directly in identifying environmental problems and concerns, and in preventing them.

Access to the qualification

This qualification recognises the skills, knowledge and values relevant to the workplace. It is designed for learners who are already employed and who have acquired some of the skills and knowledge of environmental management without having attended formal courses.

Learning assumed to be in place

The qualification assumes that learners have a General Education and Training Certificate at National Qualification Framework Level 1 or an equivalent, or alternatively an Adult Basic Education and Training Level 4 qualification.

Such qualifications reflect adequacy in the following spheres:

- Literacy
- Numeracy
- Basic concepts of Science and Technology

Exit outcomes

Exit level outcome 1

Demonstrate a good understanding of the environment and be able to describe the workplace environment in detail, verbally or in writing.

Exit outcome 2

Demonstrate an understanding of environmental awareness and pollution in general terms, verbally or in writing.

Exit outcome 3

Demonstrate a basic understanding of environmental problem identification and problem-solving in the workplace, verbally or in writing, and in a clear and precise manner.

Exit outcome 4

Demonstrate a basic understanding of Air Pollution and its impact on the environment and in the workplace in general terms, verbally or in writing, and in a clear and precise manner.

Exit outcome 5

Demonstrate a basic understanding of Water Pollution and its impact on the environment in general terms, verbally or in writing, and in a clear and precise manner.

Exit outcome 6

Demonstrate a basic understanding of Noise Pollution and its impact on the environment and in the workplace in general terms, verbally or in writing, and in a clear and precise manner.

Exit outcome 7

Demonstrate a basic understanding of Soil, Light and Litter Pollution and their impacts on the environment and in the workplace in general terms, verbally or in writing, and in a clear and precise manner.

Exit outcome 8

Demonstrate a basic understanding of Waste Management and its application in the environment and in the workplace, verbally or in writing, and in a clear and precise manner.

Exit outcome 9

Demonstrate an understanding of Sustainable Development and Sustainable Resources in general terms, verbally or in writing, and in a clear and precise manner.

Exit outcome 10

Demonstrate a basic understanding of the roles of society and business in Environmental Protection, verbally or in writing, and in a clear and precise manner.

Exit outcome 11

Demonstrate a basic understanding of Environmental Legislation and its impact on the workplace environment in general terms, verbally or in writing, and in a clear and precise manner.

Assessment Criteria

- Learners are able to respond to questions and discuss issues related to the topic.
- Learners are able to identify environmental problems from graphic material presented.
- The outcomes in each unit are intended to accommodate a range of different contexts; that is, they can be demonstrated by means of topics or materials that are appropriate to the individual learners' needs and learning contexts (e.g. workplace settings).
- Learners are able to convey the information in a clear and precise way, either verbally or in written form.

International comparability

Numerous enquiries regarding the presence of a similar qualification that could be obtained through the Internet revealed that not one is known to exist at present. Similar informal courses do exist for different target groups and in different areas, however.

Integrated assessment

The integrated assessment must be based on a summative and formative assessment guide. The guide must spell out how the assessor will evaluate different aspects of the learner's performance and will be based on the following:

- Observing the learner in a relevant simulation of the workplace
- Asking questions and initiating brief discussion to test understanding
- Examining reports and formative assessments

The learner may choose in which language he / she wants to be assessed. This should be established as part of a process of preparing the learner for assessment and familiarising the learner with the approach being taken.

While this is primarily a workplace-based qualification, evidence from other areas of endeavour may be introduced if pertinent to any of the exit outcomes.

The assessment process should cover both the explicit tasks required for the qualification as well as an understanding of the concepts and principles that underpin environmental awareness. The assessment process should also establish how the critical outcomes have been advanced by the learning process.

Recognition of prior learning

This qualification may be obtained through the process of recognition of prior learning. The learner should be thoroughly briefed before the assessment and support provided to assist in the process of developing a portfolio. Evidence from other areas of endeavour may be introduced if pertinent to any of the exit level outcomes.

Articulation possibilities

The qualification has been designed and structured so that qualifying learners can move from one context to another. Holders of other qualifications may be evaluated against this qualification for the purpose of recognition of prior learning.

Moderation options

Moderators for this qualification should be qualified and accredited with an appropriate Education and Training Quality Assessor (ETQA) and have a qualification in Environmental Management or an equivalent. To ensure the quality of the assessment process, the moderation should cover all of the following:

- Assessor credentials
- The assessment instrument
- The assessment process

Criteria for registration of assessors

The following criteria for the registration of assessors should be applied by the relevant Education and Training Quality Assessor (ETQA):

- Appropriate qualifications in the field of Environmental Management or an equivalent, with a minimum of two years of experience in the field. The experience of the assessor in the subject matter can be established by recognition of prior learning.
- Appropriate experience and understanding of assessment theory processes and practice
- Good interpersonal skills and the ability to balance the conflicting requirements of :
 - maintaining national standards
 - the interests of the learner
 - the need for transformation and redressing the legacies of the past
 - the cultural background and language of the learner
- Any other criteria required by the ETQA.

6.3 The proposed unit standards for the Certificate in Environmental Awareness for Business

The proposed draft unit standards in the format required by SAQA:

Unit Standard Title: **Understand what is meant by “environment”**

Number: 1

Level NQF: 4

Credits: 5

Field: Environment and Society

Issue date: (only available after submission)

Review date: (only available after submission)

Purpose: This unit standard enables learners to identify and understand what the term “environment” means and be able to define their work environment in a clear and precise manner, verbally or in writing

Learners accredited with this unit standard will be able to:

- define “environment”;
- define their workplace environment;
- list the different types of environment that are relevant to business;
- discuss the influence of business on the environment;.
- recognise the importance of protecting the environment.

Learning Assumptions:

Communication skills: listening, speaking, reading and writing skills at least at ABET Level 1 or an equivalent

Specific Outcomes and Assessment Criteria:

Outcomes can be exhibited verbally or in writing.

Specific Outcome 1: Define and understand what the “environment” is.

The learner will be able to:

1. define “environment” in general terms;
2. define his / her own specific “workplace environment” in detail;
3. explain the importance of identifying the different types of environment;
4. explain why the environment plays such an important role in business and in the community.

Specific Outcome 2: Understand the role that people, the community and business play in the environment.

The learner will be able to:

1. define the role of people in the environment;
2. define the community's role in the environment;
3. analyse how the workplace in question can influence the environment and *visa versa*.

Specific Outcome 3: Define business and the workplace environment.

The learner will be able to:

1. define what is meant by “business”;
2. describe the “business environment” in detail;
3. recognise how business practices can affect the environment, both positively and negatively
4. apply the knowledge gained to explain how a workplace and business affect the environment

Specific Outcome 4: Understand what is meant by a “dirty” and a “clean” industry / business

The learner will be able to:

1. define a “clean” industry;
2. define a “dirty” industry;
3. debate and analyse how each type of industry has an impact and can impact on the environment;
4. recognise how the worker's behaviour can influence the environment in each industry

Accreditation Option:

The awarding of credits and the related assessment procedures will be finalised by the relevant ETQA. Evidence can be gathered through a range of assessment methods (e.g.: external written assessments; the assignment of tasks; a portfolio of continuous assessment tasks; an informal assessment through debate and discussion; oral work, the use of visual / graphic instruments, and oral questioning, etc.).

Special Notes:

Several outcomes can be demonstrated together in one task.

1. Range

- The scope of this unit standard is for anyone who works in a business environment.
- “Standard environment” in the context of this unit refers to the learner's own environment.
- The assigned level of this unit standard is appropriate because its scope is limited in range. A basic knowledge of the environment is required in the local context.

2. Range statements that refer to assessment criteria in this unit standard

The assessment criteria are evaluated in terms of the learner’s business level and workplace.

3. General Notes

Outcomes are of a cognitive and affective nature. They require different assessment methods according to the learner’s position in the organisational hierarchy.

4. Critical cross-field outcomes

The learner will -

- have a basic understanding of the environment and the effect of business activities on the environment;
- identify and communicate problems and concerns relating to the environment to management;
- contribute to a better environment at work and in society;
- collect, analyse, organise and critically evaluate information by identifying and integrating the knowledge and skills acquired – the entire unit standard.

5. Essential embedded knowledge

The following essential embedded knowledge will be determined through the assessment of specific outcomes in terms of the stipulated assessment criteria:

- The concept of total environment
- Knowledge of factors that influence the environment and business practices
- Knowledge of the behaviours and actions that affect the environment

The Unit Standard Title: **Understanding environment awareness**

Level NQF : 4

Number : 2

Credits : 10

Issue date : (only available after submission)

Review date : (only available after submission)

Field : Environment and Society

Purpose : This unit standard will enable learners to be aware of the micro- and macro-environment in which they live and work.

Learning assumptions:

Communication skills: listening, speaking, reading and writing skills at ABET level 1 or an equivalent. The learner understands what is meant by “environment”.

Specific Outcomes and Assessment criteria:

Note: Outcomes can be exhibited either verbally or in writing.

Specific Outcome 1: Define Environmental Awareness clearly

Assessment criteria

Responses may be verbal and/or in written form.

The learner is able to:

1. define “environmental awareness” in general terms;
2. discuss environmental awareness and how it influences people’s actions;
3. discuss environmental awareness in the workplace and its importance to business;
4. discuss environmental awareness outside the workplace;
5. explain how environmental awareness influences societal behaviour towards environmental protection.

Specific Outcome 2: Define stakeholders in the business environment.

Assessment criteria

Responses may be verbal and/or in written form.

The learner is able to:

1. understand what is meant by a stakeholder in the environment;
2. define the specific stakeholders involved in a business environment;
3. discuss the role of stakeholders in business;
4. identify the roles that stakeholders play in the environment.

Specific Outcome 3: Understand sustainable activities and development.

Assessment criteria

Reponses may be verbal and/or in written form.

The learner is able to:

1. define the concept of sustainability;
2. define what can be regarded as a sustainable activity and the effect of sustainable activities on the environment;
3. define sustainable activities in general terms;
4. discuss sustainable activities as they relate to the business activities in question;
5. identify the resources needed to sustain activities in the business in question;
6. identify those resources used in the production process that are scarce;
7. explain the importance of sustainable activities / development for the future of the business in question.

Specific Outcome 4: Identify types of pollution and sources in the business environment.

Assessment criteria

Reponses may be verbal and/or in written form.

The learner is able to:

1. define “pollution” in general terms;
2. define pollution types;
3. discuss sources of pollution in the business environment;
4. list sources of pollution in the business environment;
5. discuss pollution prevention;
6. discuss the environment and the effects of pollution on it.

Accreditation Option:

The awarding of credits and the related assessment procedures will be finalised by the relevant ETQA. Evidence can be gathered through a range of assessment methods (e.g.: external written assessments; the assignment of tasks; a portfolio of continuous assessment tasks; an informal assessment through debate and discussion; oral work, the use of visual / graphic instruments, and oral questioning, etc.).

Special Notes:

Several outcomes can be demonstrated together in one task.

1. Range

- The scope of this unit standard is for anyone who works in a business environment;
- “Environmental awareness” in the context of this unit standard refers to the learner's own environment;
- The assigned level of this unit standard is appropriate because the scope is limited in range.

2. Range statements that refer to assessment criteria in this unit standard

The assessment criteria are assessed according to the learner's business level and workplace.

3. General Notes

Outcomes are of a cognitive and affective nature. They require different assessment methods according to the learner's position in the organisational hierarchy.

4. Critical cross-field outcomes

The learner will -

- have a basic understanding of environmental awareness and the influence of business activities on the environment in question;
- be able to identify and communicate problems and concerns relating to the environment to management;
- be able to contribute to a better environment at work and in the society in question;
- be able to collect, analyse, organise and critically evaluate information by identifying and integrating the knowledge and skills acquired – the entire unit standard.

5. Essential embedded knowledge

The essential embedded knowledge listed below will be determined through an evaluation of the specific outcomes in terms of the stipulated assessment criteria:

- The concept of environmental awareness;
- Knowledge of factors that influence the environment and business practices;
- Knowledge of the behaviours and actions that affect the environment.



The Unit Standard Title: **Understand Sustainable development**

Level NQF	:	4
Number	:	3
Credits	:	10
Issue date	:	(only available after submission)
Review date	:	(only available after submission)
Field	:	Environment and Society
Purpose	:	This unit standard will enable learners to be aware of the importance of sustainable development and environmental protection

Learning assumptions:

Communication skills: listening, speaking, reading and writing skills at ABET level 1 or an equivalent

Specific Outcomes and Assessment Criteria:

Note: All outcomes can be exhibited verbally and/or in writing.

Specific Outcome 1: Explain sustainable development

Assessment criteria

Responses may be verbal and/or in written form.

The learner is able to:

1. define development activities;
2. define sustainable development and sustainable consumption in general terms;
3. discuss sustainable development and the effects of environmental pollution on sustainable development;
4. discuss business activities and sustainable development;
5. identify and analyse business activities that impact on sustainable consumption and production.

Specific Outcome 2: Identify factors influencing sustainable development in business.

Responses may verbal and/or in written form.

Assessment Criteria

The learner is able to:

1. explain the importance of identifying sustainable resources and sustainable production activities in business;
2. explain the role of business in sustainable development and in environmental protection.
3. describe how these resources can be protected for future use, given that the resources needed to sustain business activities are limited;
4. discuss the worker's role in sustainable production.

Accreditation Option:

The awarding of credits and the related assessment procedures will be finalised by the relevant ETQA. Evidence can be gathered through a range of assessment methods (e.g.: external written assessments; the assignment of tasks; a portfolio of continuous assessment tasks; an informal assessment through debate and discussion; oral work, the use of visual / graphic instruments, and oral questioning, etc.).

Special Notes:

Several outcomes can be demonstrated together in one task.



1. Range

- The scope of this unit standard is for anyone who works in a business environment.
- The assigned level of this unit standard is appropriate because the scope is limited in range.

2. Range statements that refer to assessment criteria in this unit standard

The assessment criteria are evaluated according to the learner's business level and workplace.

3. General Notes

Outcomes are of a cognitive and affective nature. They require different assessment methods according to the learner's position in the organisational hierarchy.

4. Critical cross-field outcomes

The learner will –

- have a basic understanding of sustainable development and the influence of business activities on the environment in question;
- be able to identify and communicate problems and concerns relating to the environment to management;
- be able to contribute to a better environment at work and in the society in question;
- be able to collect, analyse, organise and critically evaluate information by identifying and integrating the knowledge and skills acquired – the entire unit standard.

5. Essential embedded knowledge

The following essential embedded knowledge will be determined through the evaluation of specific outcomes in terms of the stipulated assessment criteria:

- The concept of sustainable development
- Knowledge of factors that influence the environment and business practices
- Knowledge of the behaviours and actions that affect the environment



The Unit Standard Title: **Air Pollution in business and society**

Level NQF	:	4
Number	:	4
Credits	:	20
Issue date	:	(only available after submission)
Review date	:	(only available after submission)
Field	:	Environment and Society
Purpose	:	This unit standard will enable learners to understand Air Pollution as it influences business

Specific Outcome 1: Understand the importance of air pollution

Reponses may be verbal and/or in written form.

Assessment Criteria

The learner is able to:

1. define air pollution;
2. explain the importance of air pollution prevention;
3. identify reasons and explain the significance of air pollution in respect of a business's existence;
4. identify sources of air pollution in the workplace in question.

Accreditation Option:

The awarding of credits and the related assessment procedures will be finalised by the relevant ETQA. Evidence can be gathered through a range of assessment methods (e.g.: external written assessments; the assignment of tasks; a portfolio of continuous assessment tasks; an informal assessment through debate and discussion; oral work, the use of visual / graphic instruments, and oral questioning, etc.).

Special Notes:

Several outcomes can be demonstrated together in one task.

1. Range

- The scope of this unit standard is for anyone who works in a business environment.

- The assigned level of this unit standard is appropriate because the scope is limited in range.

2. Range statements that refer to assessment criteria in this unit standard

The assessment criteria are evaluated according to the learner's business level and workplace.

3. General Notes

Outcomes are of a cognitive and affective nature. They require different assessment methods according to the learner's position in the organisational hierarchy.

4. Critical cross-field outcomes

The learner will -

- have a basic understanding of air pollution;
- have a basic understanding of the effects of air pollution on business activities and the environment in question;
- be able to identify and communicate problems and concerns relating to the environment to management;
- be able to contribute to a better environment at work and in the society in question;
- be able to collect, analyse, organise and critically evaluate information by identifying and integrating the knowledge and skills acquired – the entire unit standard.

5. Essential embedded knowledge

The essential embedded knowledge listed below will be determined through the assessment of specific outcomes in terms of the stipulated assessment criteria:

- The concept of air pollution and environmental awareness
- A knowledge of factors that influence the environment and business practices
 - A knowledge of the behaviours and actions that affect the environment

The Unit Standard Title: **Understand the importance of water pollution and its prevention in business and society**

Level NQF	:	4
Number	:	5
Credits	:	20
Issue date	:	(only available after submission)
Review date	:	(only available after submission)
Field	:	Environment and Society
Purpose	:	This unit standard will enable learners to be aware of the significance of Water Pollution in the environment and its consequences for business

Learning assumptions:

Communication skills: listening, speaking, reading and writing skills at ABET level 1 or an equivalent

Specific Outcomes and Assessment Criteria:

Note: Outcomes can be exhibited either verbally and/or in writing.

Specific Outcome 1: Understand Water Pollution.

Responses may be verbal and/or in writing.

Assessment Criteria: Define and understand water pollution.

The learner is able to:

1. define water pollution;
2. explain the importance of water pollution prevention in the workplace;
3. identify and explain the significance of water pollution in terms of a business's existence;
4. identify sources of water pollution in the workplace and the environment;
5. identify possible solutions to the water pollution problems in the workplace.

Specific Outcome 2: Understand the importance of water management and the Water Act as it relates to water pollution in the workplace.

Responses may be verbal or in written form.

Assessment Criteria:

The learner is able to:

1. identify and explain the importance of the Water Act in pollution control;
2. identify sources of water pollution in the workplace and methods of prevention;
3. recognise the need to identify sources of water pollution in the workplace;
4. analyse water use in the workplace and identify possible solutions to water pollution in the workplace

Accreditation Option:

The awarding of credits and the related assessment procedures will be finalised by the relevant ETQA. Evidence can be gathered through a range of assessment methods (e.g.: external written assessments; the assignment of tasks; a portfolio of continuous assessment tasks; an informal assessment through debate and discussion; oral work, the use of visual / graphic instruments, and oral questioning, etc.).

Special Notes:

Several outcomes can be demonstrated together in one task.



1. Range

- The scope of this unit standard is for anyone who works in a business environment.
- The assigned level of this unit standard is appropriate because the scope is limited in range.

2. Range statements that refer to assessment criteria in this unit standard

The assessment criteria are assessed according to the learner's business level and workplace.

3. General Notes

Outcomes are of a cognitive and affective nature. They require different assessment methods according to the learner's position in the organisational hierarchy.

4. Critical cross-field outcomes

The learner will –

- have a basic understanding of water pollution;

- have a basic understanding of the effects of water pollution on business activities and the environment in question;
- be able to identify and communicate problems and concerns relating to the environment to management;
- be able to contribute to a better environment at work and in the society in question;
- be able to collect, analyse, organise and critically evaluate information by identifying and integrating the knowledge and skills acquired – the entire unit standard.

5. Essential embedded knowledge

The essential embedded knowledge listed below will be determined through the assessment of specific outcomes in terms of the stipulated assessment criteria:

- The concept of water management
- Knowledge of the factors that influence the environment and business practices
- Knowledge of the behaviours and actions that affect the environment



The Unit Standard Title: **Understand the influence of noise, soil and light pollution on business and society**

Level NQF	:	4
Number	:	6
Credits	:	20
Issue date	:	(only available after submission)
Review date	:	(only available after submission)
Field	:	Environment and Society
Purpose	:	This unit standard will make learners aware of the significance of Noise, Soil and Light pollution and their consequences for business and society.

Learning assumptions:

Communication skills: listening, speaking, reading and writing skills at ABET level 1 or an equivalent

Specific Outcomes and Assessment Criteria:

Note: All outcomes can be exhibited verbally and/or in writing.

Specific Outcome 1: Understand what Noise Pollution is and its consequences in the workplace and for workers.

Responses may be verbal and/or in written form.

Assessment Criteria

The learner is able to:

1. define noise pollution;
2. understand the importance of limiting noise in the workplace;
3. identify the sources of noise in the workplace;
4. understand the importance of wearing hearing protection in the workplace;
5. understand the importance of a hearing conservation programme;
6. understand the importance of noise reduction in society;
7. identify and explain the significance of noise pollution in terms of a business's existence;
8. understand the role of legislation in preventing noise pollution.

Specific Outcome 2: Understand soil pollution

The learner is able to:

1. define soil pollution;
2. understand the role of soil pollution in the environment;
3. identify sources of soil pollution in the workplace;
4. explain the effects of soil pollution on the environment;
5. analyse soil pollution sources in the workplace and to suggest ways of preventing soil pollution;
6. understand the role of legislation in preventing soil pollution.

Specific Outcome 3: Understand light pollution and its effects on society and on workers in a business.

The learner is able to:

1. define light pollution;
2. identify sources of light pollution;
3. explain the role of light in the workplace;
4. discuss the legal aspects pertaining to light in the workplace;
5. explain the role of light pollution in the environment and its effects on society;
6. discuss the remedial actions that can be taken to prevent this form of pollution;
7. understand the role of legislation in preventing light pollution.

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Accreditation Option:

The awarding of credits and the related assessment procedures will be finalised by the relevant ETQA.

Evidence can be gathered through a range of assessment methods (e.g.: external written assessments; the assignment of tasks; a portfolio of continuous assessment tasks; an informal assessment through debate and discussion; oral work, the use of visual / graphic instruments, and oral questioning, etc.).

Special Notes:

Several outcomes can be demonstrated together in one task.

1. Range

- The scope of this unit standard is for anyone who works in a business environment.

- The assigned level of this unit standard is appropriate because the scope is limited in range.

2. Range statements that refer to assessment criteria in this unit standard

The assessment criteria are evaluated according to the learner's business level and workplace.

3. General Notes

Outcomes are of a cognitive and affective nature. They require different assessment methods according to the learner's position in the organisational hierarchy.

4. Critical cross-field outcomes

The learner will -

- have a basic understanding of noise, soil and light pollution;
- have a basic understanding of the effects of these forms of pollution on business activities and the environment;
- be able to identify and communicate problems and concerns relating to the environment to management;
- be able to contribute to a better environment at work and in the society in question;
- be able to collect, analyse, organise and critically evaluate information by identifying and integrating the knowledge and skills acquired – the entire unit standard.

5. Essential embedded knowledge

The essential embedded knowledge listed below will be determined through an assessment of the specific outcomes in terms of the stipulated assessment criteria:

- The concepts of noise, soil and light pollution and their effects on the environment and on business in particular
- A knowledge of the relevant legislation
- A knowledge of factors that influence the environment and business practices
- A knowledge of the behaviours and actions that affect the environment

Unit Standard Title: **Understand what waste management principles and practices are**

Number: 7

Level NQF: 4

Credits: 20

Field: Environment and Society

Issue date: (only available after submission)

Review date: (only available after submission)

Number:

Purpose: This unit standard enables learners to identify and understand what Waste Management practices are and to choose the correct method for each work area

Learners accredited with these unit standards will be able to:

- define waste;
- define waste management;
- list the different disposal methods used in business;
- discuss the effects of business waste on the environment;
- recognize the importance of protecting the environment by using the correct waste disposal method;
- understand the consequences of littering.

Learning assumptions:

Communication skills: listening, speaking, reading and writing skills at ABET Level 1 or an equivalent

Specific Outcomes and Assessment Criteria: .

Outcomes can be exhibited verbally or in writing.

Specific Outcome 1: Define waste and understand the role waste plays in a business.

The learner will be able to:

1. define waste and waste products in the workplace environment in question;
2. define and explain the principles of waste management;
3. identify sources of waste in business and in the particular workplace in question;
4. discuss problems concerning waste disposal and society's response to these problems.

Specific Outcome 2: Understand waste management.

The learner will be able to:

1. define waste management;
2. list the basic principles of waste management;
3. classify waste products and explain the appropriate disposal method for each category of waste;
4. discuss present waste management practices in the business in question.

Specific Outcome 3: Understand the role of waste management in business.

The learner will be able to:

1. discuss the waste management practices in business;
2. assess the waste management practices in the workplace in question;
3. discuss the cost of using the wrong disposal method on the profitability of a business;
4. understand how legislation influences the management of waste in a business;
5. identify ways to improve the waste management practices of a business;
6. discuss the effects of the waste from a business on the environment;
7. recognise the importance of protecting the environment from toxic waste.

Accreditation Option:

The awarding of credits and the related assessment procedures will be finalised by the relevant ETQA.

Evidence can be gathered through a range of assessment methods (e.g.: external written assessments; the assignment of tasks; a portfolio of continuous assessment tasks; an informal assessment through debate and discussion; oral work, the use of visual / graphic instruments, and oral questioning, etc.).

Special Notes:

Several outcomes can be demonstrated together in one task.

1. Range

- The scope of this unit standard is for anyone who works in a business environment.
- The assigned level of this unit standard is appropriate because the scope is limited in range.

2. Range statements that refer to assessment criteria in this unit standard

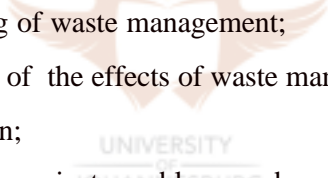
The assessment criteria are assessed according to the learner's hierarchical level in the business, and the type of workplace.

3. General Notes

Outcomes are of a cognitive and affective nature. They require different assessment methods according to the learner's position in the organisational hierarchy.

4. Critical cross-field outcomes

The learner will -

- 
- have a basic understanding of waste management;
 - have a basic understanding of the effects of waste management on business activities and the environment in question;
 - be able to identify and communicate problems and concerns relating to the environment to management;
 - be able to contribute to a better environment at work and in the society in question;
 - be able to collect, analyse, organise and critically evaluate information by identifying and integrating the knowledge and skills acquired – the entire unit standard.

5. Essential embedded knowledge

The essential embedded knowledge listed below will be determined through the assessment of the specific outcomes in terms of the stipulated assessment criteria:

- The concept of waste management and the correct disposal methods;
- A knowledge of conditions that influence the environment and business practices;
- A knowledge of the behaviours and actions that affect the environment.

The Unit Standard Title: **Understand the influence of pollution on business and society**

Level NQF	:	4
Number	:	8
Credits	:	20
Issue date	:	(only available after submission)
Review date	:	(only available after submission)
Field	:	Environment and Society
Purpose	:	This unit standard will enable learners to be aware of the importance of Pollution Prevention and the consequences of pollution for business, society and sustainable development

Learning assumptions:

Communication skills: listening, speaking, reading and writing skills at ABET level 1 or an equivalent

Specific Outcomes and Assessment Criteria:

Note: All outcomes can be exhibited verbally and/or in writing.

Specific Outcome 1: Understand the importance of pollution prevention for business.

Responses may be verbal and/or in writing.

The learner will be able to:

1. explain how pollution affects the profitability of a business organisation;
2. explain the legal consequences of pollution caused by a business;
3. discuss the cost of pollution prevention and rehabilitation for a business;
4. discuss the social consequences of pollution caused by business.

Specific Outcome 2: Understand the role society plays in environmental protection and in preventing pollution.

Responses may be verbal and/or in writing.

The learner will be able to:

1. define society as a stakeholder in environmental management;
2. discuss the role of society in environmental legislation;
3. identify the role of society in the workplace environment;
4. explain the role society can play in shaping an environmental management system for a business.

Specific Outcome 3: Explain ways in which workplace problems can be identified and how to solve them.

Assessment criteria

The learner will be able to:

1. explain “problem identification and solving” methods;
2. explain how workplace hazards and associated risks are dealt with in accordance with specified legislation;
3. explain how tools and equipment are verified, examined and used in accordance with specified requirements and legislation;
4. explain how the health and safety procedures towards self and others are maintained in accordance with specified requirements and legislation;
5. explain how workplace problems impact on the work environment and the workers.

Specific Outcome 4: Explain environmental management systems.

Assessment Criteria

The learner will be able to:

1. describe environmental management systems in general terms;
2. explain environmental management in business;
3. explain environmental performance assessments and audits;
4. describe how environmental management protects business, society and the environment.

Specific Outcome 5: Explain the co-operation between industry and society on environmental issues.

Assessment Criteria

The learner will be able to:

1. discuss society as a partner in business;
2. reflect on industry’s role in environmental protection and sustainable resources;
3. identify the common interests and goals between business and society;
4. define the role of legislation in meeting the environmental goals of a society;
5. reflect on legislation applicable to the environment and society.

Specific Outcome 6: Understand environmental legislation as it protects society.

Assessment Criteria

The learner will be able to:

1. list legislation that protects society;
2. identify the ways in which society can apply legislation;
3. reflect on the current application of legislation by society as it impacts on industry;
4. discuss the role of authorities in the application of legislation.



7. Conclusions

The *main aim* of this research was to establish whether a SAQA-registered Environmental Awareness training program specifically aimed at all business sectors existed, and if not, to design one to meet the need. (A summary of the process followed in this research is illustrated in Figure 5.) It was established that **no** such training course was registered at SAQA. Other organisations were contacted to establish whether they were developing such a training programme for registration. *No such evidence* was found. Therefore the *design process was commenced* and culminated in eight core draft unit standards. Initially, the design criteria and parameters were defined. Thereafter the scope of the proposed training course framework was set out. The target group for the training course design was subsequently decided upon. The course objectives were then defined and a course outline was suggested. The rationale behind the proposed training course framework was suggested and justified thereafter. The process of designing the generic course framework based on unit standards followed the steps illustrated in Figure 1 (p. 17). The unit standards that were drafted as a result of this process could be submitted to SAQA through SGB 07: Environment and Society Interaction for possible registration. The unit standards would then be made available to all relevant stakeholders for comment and amendment. This would be done by publishing them in the Government Gazette and on the SAQA Website. After making any amendments deemed necessary, SAQA might accept them for registration. If the unit standards were to be accepted for registration, they would be published and be made available to all trainers for use in their training programmes.

8. Recommendation.

It is recommended that these draft unit standards be submitted for consideration by SGB “Environment and Society interaction” and once registered by SAQA, that business and trainers should be advised and requested to use the unit standards to train all staff members in business. The relevant stakeholders should be tasked with this.

References.

Anon, 1999: [www.saqa.org.za \south african qualifications authority.htm](http://www.saqa.org.za/south%20african%20qualifications%20authority.htm)

Brittan, L, 1999: *Sustainability Impact Assessments to underpin EU approach on Sustainable Development*. Available from <http://idpm.man.ac.uk/sia-trade/text.htm>

Boshyk, Y, (Editor). 2002: *Action Learning worldwide*. Hampshire: Balgrave Macmillan.

Bennete, J, 1998: *Environmental awareness can add growth to bottom line*.

Available from: <http://www.btimes.co.za/98/1122/comp/comp16.htm>

Constitution of the Republic of South Africa, (Act 108 Of 1996). Pretoria: Government Printers.

Crowther, D, 2000: *Social and Environmental accounting*. London: Prentice Hall.

Department of Environmental Affairs and Tourism, 2001. *State of the Environment report*.

Pretoria: Government printer.

Gough, J, 1996: *Developing learning materials*. London: Paperweight.

JOHANNESBURG

Handy, C, 1996: *Beyond Certainty*. London: Arrow.

Higgins, C, 2002: *Triple bottom line reporting* . Available from:

<http://www.sustainabilitymatters.co.nz/news.htm>. (Accessed December 2002).

Human Sciences Research Council (HSRC), 1995: *Ways of seeing the National Qualifications Framework*. Pretoria: HSRC.

International Standards Organisation. ISO 9000. ISO: Geneva.

International Standards Organisation, 1996. ISO 14001. ISO: Geneva.

Isaacs, S.B.A., 2000a: *The National Qualifications Framework and the Standards Setting*.

Pretoria: SAQA.

Isaacs, S.B.A., 2000b: *The National Qualifications Framework and Quality Assurance*. Pretoria: SAQA.

King, M, 2000: *The Second King Report on Corporate Governance for South Africa ("King II")*. Pretoria. Available from: <http://www.worldbank.org/html/fpd/privatesector/cg/docs/king.pdf>.

Laird, D, 1985: *Approaches to training and development*. (2nd Ed) Massachusetts: Addison-Wesley.

Mager, R.F., 1988: *Making Instruction Work*. California: Lake.

Mager, R.F., 1984: *Preparing Instructional Objectives*. (2nd Ed.) Belmont: Pitman.

Meyer, T, 1996: *Competencies*. Johannesburg: Knowledge Resources.

Miller, G.T., 1996: *Sustaining the Earth*. New York: Wadsworth.

National Environmental Management Act (No. 107 of 1998). Pretoria: Government Printer.

Olivier, C, 1999: *Let's educate, train and learn outcomes-based*. Pretoria: Benedic.

Phillips, B, 1996: *Getting to grips with the National Qualifications Framework (NQF)*. Johannesburg: Sigma.

Piskurich, G.M., 1993: *Self-Directed Learning*. San Francisco: Jossey-Bass

Ramphela, M, 1998: *The National Qualifications Framework: An Overview*. SAQA: Pretoria.

Roa, P, 2000: *Sustainable Development*. Oxford: Blackwell

Robins, S.P., 1990: *Organization Theory: Structure, Design and Application*. New York: Prentice-Hall.

Rothwell, W.J. & H.C. Kazanas, 1998: Mastering the instructional design process. (2nd Ed.) San Francisco: Jossey-Bass.

Shone, H, 2002: Iskor's filthy habits aired. Johannesburg.

Steiner, A, 2002: Conservation in the 21st century. Earthyear. 2, Durban:Universal Web.

Silberman, M. & C. Auerback, 1998. Active Training. (2nd Ed.) San Francisco: Jossey-Bass / Pfeiffer.

Skills Development Act (No. 97 of 1998). Pretoria: Government Printer.

South African Qualifications Authority Act (No 58 of 1995) Government Printer, Pretoria.

South African Qualifications Authority, 1999: Generation and Evaluation of Qualifications and Standards within National Qualifications Framework. Pretoria: SAQA.

South African Qualifications Authority, 1999: Guidelines for the assessment of NQF registered unit standards and qualifications. Pretoria: SAQA.

South African Qualifications Authority, 2000: The National Qualifications Framework and Quality Assurance. Pretoria: SAQA.

South African Qualifications Authority, 2003: Level Descriptors Regulations (NQF levels 1 to 4). Pretoria: SAQA.

Steiner, A, 2002: Earthyear. Johannesburg: M &G Media.

The Star, 2001: Iskor Pollution. Johannesburg

The Sunday Times, 2001: Iskor poisoned us, say sick farmers. Johannesburg.

Van Dyk, P.S., Nel, P.S., Van Z Loedolff, P. & Haasbroek, G.D., 1997: Training Management. Johannesburg: Thomson International.

Yorks, L., O'Neil, J. and Marsick, V.J. (Eds), 1999): *Action learning: successful strategies for individual, team and organizational development*. No. 2 in series Advances in Developing Human Resources, R.A.Swanson, editor-in-chief. Baton rouge and San Francisco: Academy of Human Resource Development and Berrett-Koehler.



Annexure A

TITLE: *Practise environmental awareness.*

NUMBER:

LEVEL 1

CREDITS 4

FIELD: NSB 11: Services

SUB FIELD: Cleaning

ISSUE DATE:

REVIEW DATE:

PURPOSE

Learners working towards this standard will be learning towards the full qualification, or will be involved in or working within a cleaning services environment. Qualifying learners are able to explain why the environment is important and demonstrate how we should preserve it at home and at work in a commercial, industrial, pharmaceutical, food handling, domestic and health care cleaning and waste management environment.

LEARNING ASSUMED TO BE IN PLACE

The learner has the speaking and listening ability equal to an *ABET Level 1 Com 101* standard and/or any other communication skill that will enable him/her to confirm the knowledge and skills required by this unit standard.

SPECIFIC OUTCOME 1

Demonstrate an understanding of how the environment works.

ASSESSMENT CRITERIA

1. Identifies the different environmental elements present at his / her place of work and at home.
2. Explains how the environmental elements in the workplace work together.
3. Explains what an eco-system is.
4. Explains what the law says about protecting the environment and the rights of people to a clean, healthy environment.

SPECIFIC OUTCOME 2

Demonstrate an understanding of how pollution / waste impacts on the environment.

ASSESSMENT CRITERIA

1. Names the different types of waste generated in the workplace.
2. Identifies the sources of environmental pollution in the workplace.

3. Describes what pollution is and how this impacts on the environment and our health.
4. Explains what a waste stream is.
5. Explains how the waste stream works.
6. Explains how the types of waste generated at work can have a negative impact on the environment.

SPECIFIC OUTCOME 3

Take the appropriate steps to limit pollution / waste at the workplace.

ASSESSMENT CRITERIA

1. Applies and ensures housekeeping practices which is good for the environment.
2. Assesses the solid waste stream correctly.
3. Takes steps to reduce solid waste.
4. Disposes of waste products that cannot be used again / recycled in a way that does not damage the environment. (*)
5. Takes steps to limit water and energy wastage.
6. Uses the correct safety equipment when disposing of hazardous waste.
7. Reports spillages and other environmental hazards immediately. (*)
8. Explains how housekeeping practices that are good for the environment can reduce the amount of damage work activities can do to the environment.
9. Explains how the waste stream at work can be reduced / limited.
10. Explains the advantages of reducing solid waste.
11. Explains why energy and water must be saved at the work place.
12. Explains what impact waste (including hazardous waste) can have on the environment and on people.
13. Gives a workplace example of an environmental hazard that could occur, and explains how to deal with it. (*)

SPECIFIC OUTCOME 4

Dispose of household waste in an environmentally responsible manner.

ASSESSMENT CRITERIA

1. Identifies throw away / disposable household products.
2. Recycles re-usable household waste products.
3. Identifies household products which are packaged in a way that limits the amount of waste that has to go to the landfill site.
4. Sets up a household waste separation system.
5. Uses a household waste separation system.
6. Accesses the available community waste re-cycling options.

7. Explains how the household rubbish chain works.
8. Explains the dangers landfills can expose the community to.
9. Explains how packaging of household products contributes to pollution.
10. Explains how the waste pyramid works.
11. Explains decomposing and how it works with different kinds of waste.
12. Explains why we need to separate waste.

3 ACCREDITATION PROCESS

1. An assessor accredited by the Services SETA ETQA will assess the competency.
2. Assessment procedures will be supplied to the ETQA in alignment with NSB requirements.
3. All assessment activities must be fair so that all candidates can have equal opportunities.
4. Assessment will be free of gender, ethnic or other bias.
5. Questions and answers must determine the theoretical knowledge.
6. Direct observation, preferably in the workplace, or as a second choice in simulated conditions are preferred.
7. A practical demonstration of competencies is required in this unit standard.
8. Reporting skills are demonstrated by effective communication that may be verbal or any other agreed upon method.
9. Internal Moderation
10. External Moderation



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RANGE STATEMENT

1. The scope of this unit standard is for any person who lives and works in South Africa.
2. Environmental awareness in the context of this unit standard refers to an understanding that we all produce waste and therefore impact on the environment.
3. The level assigned to this unit standard is appropriate because the process is limited in range, contexts are closely defined, knowledge is narrow and is used on a recall basis, and problem solving is limited. Actions undertaken are repetitive and familiar, generation of new ideas are limited at best, and while the learner will share information with others, there is no responsibility for the learning of others per se. Orientation of activity is directed in terms of worksite environmental policy and actions occur under close supervision.

RANGE STATEMENTS WHICH REFER TO ASSESSMENT CRITERIA IN THIS UNIT STANDARD

1. Assessment can be verbal, written or any other agreed upon method.
2. Assessment criteria marked by * are assessed according to worksite procedures.
3. The impact of waste on the environment includes but is not limited to air pollution, water pollution, leaching from landfill sites, poisoning of groundwater systems and soil.
4. Environmentally sound housekeeping practices includes but is not limited waste separation at source, re-using waste items, clearing up spillages, reporting / dealing with environmental hazards, storing chemicals / materials correctly and safely, the observation of safe work practices and picking up waste.
5. Assessing the solid waste stream at minimum refers to determining where solid waste can be reduced or recycled - starting at the point of origin.
6. Environmentally friendly alternatives for currently used household products include but are not limited to the use of rechargeable batteries instead of disposable ones, avoiding items packed in polystyrene containers, buying items in re-usable packages (egg. Cool drink bottles).
- 4
7. Recycling at home includes but is not limited to selling recoverable waste egg. cardboard, aluminium cans and glass, using organic waste to make compost, reusing containers and other items.

NOTES

Definition of terms within this unit standard: (alphabetical order)

1. The environmental elements referred to in Specific Outcome 1 include the atmosphere, water (sea, rain, river, underground water), soil, plants and animals.
2. The waste pyramid is as follows:
Avoid, reduce, re-use, recycle, dispose
3. Recoverable waste: Includes metal and aluminium cans, glass bottles, plastic (blow -moulded, PET, grade 1 and 2), white paper, newsprint, magazines, cardboard, common mix, oil, food cans, etc.
4. Sources of environmental pollution (A3) include, but are not limited to:
 - emissions,
 - PCB's (chemical compounds used in production, restricted to insulators, electrical transformers capacitors),
 - dusts,

- carbon products (egg. carbon monoxide is formed during combustion processes in power stations, boilers and car exhausts),
- asbestos (asbestos fibres are woven into non-flammable fabric used for fireproof clothing and insulation products - exposure over time causes asbestosis and various cancers),
- packaging products (egg. polystyrene which contains PVC's which are not biodegradable and toxic when burnt),
- cleaning agents (egg. soap, detergents, TCE and other materials used in production processes eg. oils, solvents, acids),
- lead substances (used in batteries, sheathing of electrical cables, leaded petrol and in the welding process - can cause palsy, paralysis of the wrists and ankles, also reduced intelligence and motor problems),
- ozone depleting chemicals (egg. CFC's - a gas used in air conditioning, solvents, packaging materials and aerosol sprays. CFC's produces chlorine which depletes the ozone layer by changing its chemical structure - this exposes the sun's harmful rays which in turn causes skin cancer and cataracts, reducing immune systems and interferes with plants' ability to photosynthesize),
- effluents,
- toxic chemicals (including pesticides, insecticides, organic phosphates),
- volatile organic compounds (egg. methane gas on a landfill site),
- the dumping of chemicals into water drainage systems,
- formaldehydes (cancer causing agents in resins, paint and turpentine), benzene & petroleum products (can poison groundwater, air crops and animals resulting in an increase in human birth defects, miscarriages and diseases in crops.)

5 CRITICAL CROSSFIELD OUTCOMES

1. Identify and solve problems in which response displays that responsible decisions using critical and creative thinking have been made. Evident in Specific Outcomes 1, 2, 3 and 4.
2. Work effectively with others as a member of a team, group, organisation or community. Evident in Specific Outcomes 1, 2, 3 and 4.
3. Organise and manage oneself and one's activities responsibly and effectively. Evident in Specific Outcomes 1, 2, 3 and 4.
4. Communicate effectively using visual, mathematical and/or language skills in the

modes of oral and/or written presentation. Evident in Specific Outcomes 1, 2, 3 and

5. Use science and technology effectively and critically, showing responsibility towards the environment and health of others. Evident in Specific Outcomes 1, 2, 3 and 4.

6. Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation. Evident in Specific Outcomes 1, 2, 3 and 4.

7. In order to contribute to the full personal development of each learner and the social and economic development of the society at large by:

- Participating as a responsible citizen in the life of local, national and global communities
- Being culturally and aesthetically sensitive across a range of social contexts

Evident in Specific Outcomes 1, 2, 3 and 4.

ESSENTIAL EMBEDDED KNOWLEDGE

On completion the learner can understand and apply knowledge as described in the assessment criteria of all the outcomes.

SUPPLEMENTARY INFORMATION

The assessor is required to be in possession of the following documents:

- The employer company and / or client's environmental policy where such exist.
- The applicable government regulations / legislation pertaining to the handling of waste on site.
- A schedule of waste generated on site (available from the waste generators' database.)
- A list of recoverable waste merchants operating in the area where the learner resides.
- A general list of recoverable waste items (available from the Fairest Cape Association, Mondi, Sappi, etc.)
- A copy of the Bill of Rights contained in Chapter 2 of the Constitution of South Africa, the South Africa Act, No. 112 of 1997.

Annexure B

Example of people and organisations contacted during this research:

Mr B. van Zyl, Vice President - Environmental management, Anglo American Corp.

Mr P. Nelson, Environmental Management – Eskom

Mr A. Clacherty, Chairman SGB 07: Environment and Society Interaction, NSB 07 – SAQA

Ms P. Baloyi, Manager Communication – SAQA, Pretoria

Mrs Mfundu - Department of Environmental Affairs and Tourism, Pretoria

Mrs N. Gqwa - Department of Environmental Affairs and Tourism, Pretoria

SGB Forum – South African Qualifications Authority – www.sqa.org.za

