



Environmental Outcomes in the South African Learnership System

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Abstract

Since 1994, the published environmental goals and objectives of the South African Government include environmental education outcomes in all education and training programmes and at all levels on the National Qualifications Framework (NQF). In 1998 the Skills Development Act provided for the establishment of Sector Education and Training Authorities (SETAs) and learnerships, which are occupationally-based learning programmes leading to a qualification on the NQF.

By September 2002, 276 learnerships had been registered by the Department of Labour (DoL). The research sought to explore whether these learnerships, and others still under development by SETAs, reflected the government's environmental education and training goals and objectives.

The research found a lack of environmental qualifications below the Higher Education and Training band of the NQF; variations in the interpretation of the critical outcome that includes 'environment'; a range of manifest and latent environmental outcomes distributed across learnerships and SETAs; a strong influence of occupational health and safety legislation; and a lack of environmental policy and objectives in the SETAs themselves.

The report concludes that the government's environmental goals and objectives are partially met quantitatively, but largely unmet qualitatively. Several policy recommendations are made to improve environmental practice in the learnership system.

The South African Policy Context

Environmental Policy

Since 1994 the published environmental goals and objectives of the South African Government include environmental education outcomes in all education and training programmes and at all levels on the NQF. The White Paper on Education and Training (DoE/DoL, 1995:18) states that:

...environmental education, involving an interdisciplinary, integrated and active approach to learning, must be a vital element of all levels and programmes of the education and training system in order to create environmentally literate and active citizens and ensure that all South Africans, present and future, enjoy a decent quality of life through the sustainable use of resources.

The White Paper on Environmental Management Policy (DEAT, 1997) identified the Department of Environmental Affairs and Tourism (DEAT) as the lead agent responsible for the implementation of government policy on environmental management. It also presented seven strategic goals including: 'Goal 5 Empowerment and Environmental Education' with the supporting objective:

To integrate environmental education in all programmes, levels, curricula and disciplines of formal and non-formal education and in the National Qualification Framework. (DEAT, 1997:19)

The National Environmental Management Act (NEMA) of 1998 established the institutional framework for cooperative environmental governance by all organs of state. It also introduced a duty of care on any person who causes or may cause significant pollution or degradation of the environment, including measures to:

Inform and educate employees about the environmental risks of their work and the manner in which their tasks must be performed in order to avoid causing significant pollution or degradation of the environment. (RSA, 1998: Ch.7)

The National Qualifications Framework (NQF)

The South African Qualifications Authority Act (RSA, 1995) laid the foundations for the transformation of the South African education and training system and established the South African Qualifications Authority (SAQA) to oversee the development and implementation of the NQF.

In 1998, regulations under the SAQA Act made provision for the registration of National Standards Bodies (NSBs) and Standards Generating Bodies (SGBs) in 12 organising fields of learning, and for the accreditation of Education and Training Quality Assurance (ETQA) bodies. The NQF consists of eight levels (1-8) spanning the General, Further and Higher Education and Training bands (GET/FET/HET).

The regulations provide for the registration of 'whole qualifications' and qualifications constructed from unit standards, both of which describe the learning outcomes expected to be demonstrated by qualifying learners and which must include specific outcomes as well as critical outcomes that promote life-long learning.

'Environment' is included directly in one of the critical outcomes (critical outcome 6) which requires all learners in South Africa to *use science and technology effectively and critically, showing responsibility towards the environment and health of others*. Environment is also indirectly included in other critical outcomes, and learners are for example, expected to *identify and solve problems in which responses require critical and creative thinking*.

The National Skills Development Strategy (NSDS)

The National Skills Development Strategy (NSDS) is a long-term strategic plan of the DoL aimed at improving the skills and productivity of the nation while redressing past imbalances in education, training and employment.

In 1998 the Skills Development Act (RSA, 1998) provided the institutional framework to develop and improve the skills of the South African workforce within the NQF. The Act provided for the establishment of 25 SETAs consisting of representatives of organised labour, organised business and relevant government departments. The Act also provided for the establishment of learnerships, a form of modern apprenticeship, leading to recognised occupational qualifications. SETAs are required to develop sector skills plans within the framework of the NSDS and to design, register and market learnerships to meet sector skills needs.

By September 2002, 276 learnerships had been registered by the Department of Labour. This research sought to explore whether these learnerships, and others still under development by SETAs, reflected the environmental education and training goals and objectives of the South African Government.

The Broader Context of the Study

Environmentalism is based on a 'constructive tension' between two major worldviews, which O'Riordan (1989:82-84) calls ecocentrism and technocentrism. Ecocentrism describes the conservative and nurturing view of society-nature relationships where humans regard themselves as part of the cosmic life force with responsibility towards the environment. Technocentrism describes the radical or manipulative mode where humans regard nature as something to be improved upon for the benefit of human society.

Robottom and Hart (1993:v-vi) argue that:

...the root causes of environmental problems are located in the very nature of our current social, economic and political systems and in the world views, institutions and lifestyle choices that support them... Environmental education seeks to develop the understandings, values and action skills necessary for people to work with others to improve the quality and sustainability of their natural and social environments.

The South African NQF with its commitment to outcomes-based education (OBE) seeks to transform the education and training system as well as the learning outcomes within this system. In this regard Killen (1999:7) notes:

Because the *critical outcomes* are broad and long-term, they provide only general guidelines ...More specific guidelines for teaching are developed by looking at the *critical outcomes* in the context of a particular learning area [or field]... This produces the *specific outcomes* that describe what students will be able to do at each level of learning in each learning area.

Le Grange and Reddy note that many of the cross-curricular environmental education outcomes proposed by the environmental education community during the early phases of the design of outcomes-based curricula were removed by a centrally appointed committee. They also argue that ‘...OBE has been criticised for its instrumentalist and reductionist view of knowledge’, suggesting that ‘...OBE in South Africa will reduce environmental knowledge to critical outcomes, specific outcomes, assessment criteria, range statements and performance indicators’ (Le Grange & Reddy, 1997:14–16).

Research Methodology and Process

Direct access to the DoL Learnership Registration Database and indirect access to the NQF through the SAQA website, provided the opportunity to answer the research question by analysing the content of the 276 registered learnerships, including the qualifications to which they lead. The research method selected to perform this task was documentary analysis, while a self-completion questionnaire was used for learnerships still under development by SETAs.

Documentary analysis

The sample for analysis was all 276 learnerships registered by the DoL by September 2002. Although the distribution of registered learnerships across the 25 SETAs was very uneven, ranging from zero to 42, all registered learnerships were included, thereby increasing the validity of the findings and providing for intra-SETA comparisons.

As the 276 learnerships lead to qualifications consisting of multiple exit level outcome statements or unit standards, all of these were included in the sample. Common unit standards used in multiple learnerships only needed to be analysed once.

The classification categories were derived partially from the research question and partially from empirical evidence as successive learnerships were analysed. Analysis of the critical outcome focusing on ‘environment’ was kept separate from the rest to avoid violating the single classification principle.

A key-word search of the DoL and SAQA databases revealed that a single word, which could be taken out of context, was an unreliable recording unit for research purposes. The most appropriate recording unit was considered to be the ‘theme’, a single assertion related to a research category, represented by a single word or phrase.

SAQA criteria for the consistent formatting of qualifications and unit standards, including section headings, provided a hierarchy of sampling units for the research.

Some learnerships exhibited a high frequency of environmental outcomes due to repetition in constituent unit standards, while others exhibited a low frequency. As frequency has little bearing on the importance of the attribute, the enumeration unit chosen was simply the occurrence of a relevant attribute in any constituent part of a learnership.

A pilot analysis of a sample of learnerships from different SETAs revealed examples of manifest and latent environmental content. Manifest references to waste, for example, revealed concern for its impact on the environment while latent references to waste revealed concern for production or economic efficiency.

Rather than combining these in their respective categories, a dual system of enumeration was utilised in order to evaluate the extent of manifest and latent environmental content found in learnerships.

SETA questionnaire survey

Documentary analysis could only provide a partial answer to the research question. It was also expected that it would reveal additional issues that could be addressed more directly through a questionnaire survey of SETA personnel.

It was anticipated that the documentary analysis would be sufficiently advanced to inform the questionnaire survey. In practice, problems of accessing the data delayed the process, resulting in a limited range of tentative findings being available to inform the design of the questionnaire.

The final survey resulted in a five-part questionnaire containing 14 closed multiple-choice questions with open space for additional details following some of the questions. Question four included variables identified from the documentary analysis but also provided two 'other' lines for issues not adequately covered in the choices provided. The end of the questionnaire, Part E, invited respondents to provide any other relevant information.

A decision was taken to limit the sample to key SETA respondents, but to include relevant questions about the SAQA/NSB/SGB processes leading to the registration of qualifications and unit standards on the NQF necessary for learnerships. A snowball strategy was envisaged whereby chief executive officers (CEOs) were asked to forward questionnaires to appropriate colleagues.

A cover letter and questionnaire was emailed to all 25 SETA CEOs in early December 2002, with a follow-up in early January 2003. As this only resulted in responses from nine SETAs, a further letter was addressed to the Learnership Managers of the outstanding SETAs late in January 2003 asking them to follow up with their CEOs or complete the questionnaire personally. This resulted in another three responses, resulting in total responses from 12 SETAs, four of which were completed by CEOs and eight were completed by SETA staff members.

While the sampling strategy proved to be ineffective and the response disappointing, it provided valuable additional information on 12 SETAs. Three SETAs which failed to respond to the survey had no learnerships registered by September 2002 and were also excluded from the documentary analysis.

Summary of Research Findings

A search of registered qualifications on the SAQA Qualifications and Standards searchable database by the keyword 'environment' in the title identified 115 environmental qualifications, all falling in the Higher Education and Training band of the NQF. These covered a range of disciplines including environmental education, science, law and engineering.

A similar search of registered unit standards identified 110 unit standards, only 14 of which were actually found to be environmental. This was not, therefore, considered to be a reliable indicator of environmental content.

Analysis of 776 SAQA registered unit standards identified from the 276 registered learnerships revealed variations in the way SGBs interpreted critical outcome 6: *Use science and technology effectively and critically, showing responsibility towards the environment and health of others*. 48% of the sample, 48% excluded the outcome entirely; 29% abbreviated the outcome to include science and/or technology but excluded 'environment'; 21% quoted the SAQA wording verbatim but did not necessarily address 'environment' in their specific outcomes; and less than 2% elaborated on 'environment'.

The exclusion of 'environment' is encouraged by the frequent abbreviation of the critical outcome title to 'Science' and/or 'Technology' in unit standards and other official documents, diminishing 'environment' in the consciousness of the reader.

Content analysis of 276 DoL registered learnerships revealed a total of 130 manifest environmental outcomes and 269 latent environmental outcomes. These were ranked by frequency and summarised by distribution in registered learnerships and by SETAs.

Environmental Health and Safety tops both manifest and latent outcome frequencies. When clustered with overlapping categories, this accounts for 66% of all latent environmental outcomes identified. The content analysis revealed extensive influence of the Occupational Health and Safety Act and narrower influence of other legislation affecting specific sectors.

Twelve SETAs participated in a five-part questionnaire survey which found that no SETA had published an environmental policy statement. Four sector skills plans contained environmental objectives, but only one SETA had included environmental objectives in its current business plan.

While Occupational Health and Safety was considered to be the most important environmental issue, the distribution of scores indicates a wider range of environmental concerns than those reflected in the 276 learnerships already registered by the DoL.

One survey question generated an abnormal, yet crucially important, response raising additional questions: a) are SETA staff aware of the government's environmental education objectives, and b) do SETA staff understand the environmental implications of critical outcome 6?

While respondents rated existing SAQA qualifications and unit standards as acceptable in meeting their sector's environmental needs, 75% said that new ones are required and 42% believe that their SETA has a strategy to address this.

Most respondents felt existing learnerships met their sector's environmental needs although, contrastingly, 50% felt that new learnerships will be necessary. Only two respondents believed that new learnerships are currently under development to meet these needs. 75% believed that environmental training will be necessary for Education Training and Development (ETD) practitioners and 58% believed that it will be necessary for ETQA practitioners.

A suggestion was made for collaboration amongst SETAs with similar environmental concerns.

Conclusion

The research sought to answer whether the 276 learnerships registered by DoL by September 2002, and those still under development by SETAs, reflected the environmental goals and objectives of the South African Government. The answer to the research question may be given in two parts, quantitatively, and qualitatively.

Quantitatively, 177 of 276 learnerships (64%) contain environmental outcomes distributed across 18 of 25 SETAs (72%) and these span NQF levels 1-7. However, only 75 learnerships (27%) contain manifest environmental outcomes, while 102 (37%) contain only latent environmental outcomes. Similarly, only 14 SETAs (56%) had manifest environmental outcomes in their learnerships, while four (16%) had only latent environmental outcomes in their learnerships.

It may be argued that learnerships containing only latent environmental outcomes should be excluded from these totals as they are likely to be taken at face value in practice and the latent environmental potential not realised.

Qualitatively, only five learnerships were identified as 'environmental' from their title and/or purpose statement and these contained coherent environmental outcomes throughout. Two of these lead to a qualification at NQF Level 1 and one leads to a qualification at NQF Level 2.

Even learnerships containing environmental outcomes exhibit substantial inconsistencies in the way these are dealt with in the design of their unit standards, qualification and the learnership itself.

The SETA survey reveals a general acceptance of the status quo but also awareness of the need for improved environmental outcomes in the learnership system.

The only place 'environment' features in the critical outcomes identified by SAQA is as an appendage to 'science and technology'. This presents a technocentric worldview of environment by SAQA, suggesting that environmental outcomes are the product of science and technology rather than something of intrinsic value to the natural environment. The link with 'health of others' implies other humans, indicating an anthropocentric concern for the risks to humans rather than the broader natural environment. This technocentric/anthropocentric view of 'environment' is reflected in the dominance of occupational health and safety in the learnership system.

In conclusion, the environmental goals and objectives of the South African Government are partially met quantitatively, but largely unmet qualitatively. There are, however, indications that SETAs are aware of the need for improved environmental outcomes in the learnership system.

Policy Recommendations

SAQA Processes

The Study Team commissioned to review the implementation of the NQF recommends that critical outcome 6 be considered an 'educational aim' (DoE & DoL, 2002:84). This potentially eliminates 'environment' completely from SAQA's agenda. However, as this research has shown, the inclusion of 'environment' in the critical outcome, has had little influence on the design of unit standards, qualifications or learnerships.

While the retention of 'environment' in the critical outcomes might be important for its integration in the broader education system, it is apparent that specific outcomes are necessary for 'environment' to be included effectively in the learnership system.

As Occupational Health and Safety dominates the collective understanding of 'environment' amongst stakeholders in the learnership system, it is recommended that those aspects related to the Occupational Health and Safety Act are separated from 'environment' in order to create a new awareness of environment in the learnership system.

This requires a range of generic environmental unit standards at different levels on the NQF which can be used by all SETAs in their learnership design. Some SETAs also need sector-specific environmental unit standards due to the nature of their sector. SETAs with similar needs should collaborate to coordinate 'environment' between themselves and SAQA.

Regulations, standards and policies

If a national qualification or unit standard refers to an authoritative source of knowledge such as a regulation, an international, national or industry standard or a code of practice, the reference should be specific regarding title, source and relevant sections to facilitate access by users.

If reference is made to company policies and procedures, it should be quite clear that these are subordinate to others specified in the qualification or unit standard and cannot become constituent parts of the qualification or unit standard on their own merit.

Environmental management

The National Environmental Management Act (NEMA) significantly raises the risk profile of South African companies, particularly those operating in sectors with potentially high environmental impacts. While the education of employees about the environmental risks of their work could happen at the company level, it is incumbent on SETAs to design, register and market learnerships to meet sector skills needs.

Although the implications of NEMA may not yet be fully appreciated by companies or SETAs, there can be no doubt that it provides an incentive for environmental education and training at the sector (SETA) level.

While SETAs are responsible to the Minister of Labour under the Skills Development Act, the Director General, Labour, sits on the Committee for Environmental Coordination under NEMA to promote the integration and coordination of environmental functions by the relevant organs of state. NEMA also identifies the DoL as a Schedule 2 National Department, exercising functions that involve the management of the environment. This requires the DoL to prepare an environmental management plan every four years containing a description of the functions exercised by the department in respect of the environment.

It is therefore recommended that the DoL encourages SETAs to establish an environmental policy and to include environmental objectives in their sector skills plans and business plans. These, in turn, should inform the DoL Environmental Management Plan, thereby making a significant contribution towards national environmental management policy by the DoL.

As lead agent responsible for ensuring the integrated and co-ordinated implementation of

government policy on environmental management the Department of Environmental Affairs and Tourism (DEAT) should consider its role in promoting 'environment' in the learnership system.

Recommendations for Further Research

The research took place shortly after the introduction of the learnership system during which time the NQF was still under development and many constituent qualifications and unit standards were not yet available on the SAQA database. This undoubtedly reduced the validity and generalisability of the research and may render some of its findings obsolete.

The research took a broad interpretative view of environmental outcomes in the South African learnership system. It is now recommended that SETAs take these findings as a baseline for their own research in order to establish their own environmental policies and develop effective environmental outcomes in their own learnerships.

It is also recommended that further research take place system-wide at some later date to assess what systemic changes have taken place regarding environmental outcomes in the learnership system and to make additional recommendations.

By that time learnerships containing environmental outcomes will have been implemented and sector level research should have taken place to evaluate the integration of environmental outcomes in the education and training delivery system and their impact on learners and the environment.

Notes on the Contributor

Colin Griffin has been involved in education, training and development projects in South Africa since 1986. For the last eight years he has been contracted by a number of international development agencies supporting bilateral and multilateral projects with the South African Government. From January 2000 to December 2002 he was employed by German Technical Cooperation (GTZ) as a Learnership Project Consultant to the DoL under the Labour Market Skills Development Programme (LMSDP) funded by the European Union. During this period he undertook research towards an MSc in Environmental and Development Education, on which this report is based. Email: griffdev@global.co.za.

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