

## **“WE’RE JUST TEACHING IN A VACUUM”. TEACHING IN CONTEXT IN THE LEARNING FOR SUSTAINABILITY PROJECT**

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Learning for Sustainability is a Danish-funded project for supporting teachers in environmental education curriculum development, in the Departments of Education in the Gauteng and Mpumalanga provinces of South Africa. The Rhodes University Environmental Education Unit is responsible for its evaluation. Instead of establishing baseline data against which to compare the project outcomes, the researchers are developing contextual profiles towards a deepening understanding of the contexts in which the teachers work, and to judge the appropriateness of project activities. This paper introduces insights from the developing profile based on questionnaires; interviews; observations during project meetings and school visits; and document analysis. The emerging issues pertain to curriculum and professional development in environmental education, within the context of educational policy transformation. In particular the paper highlights the role of context in responsive reform initiatives.

### INTRODUCTION

The South African education context is one strikingly characterised by the need for and policy changes towards transformation. The government’s reform initiatives include the introduction of an ‘outcomes-based’ curriculum framework and of changes in the role of teachers towards becoming ‘facilitators’ of learner-centred processes (Department of Education, 1997). Teachers are also to become developers, not merely implementors, of curricula relevant to local contexts [see Lotz & Robottom in this issue]. Such curricula, framed within the government’s Curriculum 2005 framework (C2005), are to be aimed at the attainment of outcomes, rather than the coverage of pre-determined factual content (Department of Education, 1997).

Even in contexts not characterised by such far reaching policy transformations environmental education presents as a focus for the professional development of teachers. UNESCO has declared the 1990’s as a decade in which teacher education should be prioritised in order to ‘orientate teaching towards education for sustainability’ (UNESCO-EPD, 1997). Similar calls have been made in southern Africa (see e.g. Oakes, 1997). Many teacher support projects have been undertaken in environmental education, e.g. the SWEEP project in the USA (Bainer & Cantrell, 1997), an ‘action research network’ for teacher educators in the Asia-Pacific region (Fien & Corcoran, 1996) and the German-funded BEST (Better Environmental Science Teaching) in Zimbabwe. Professional

development and pre- and in-service teacher development programmes are increasingly discussed in the environmental education literature (see e.g. Robottom, 1987a,b; Wade, 1996) and research on the topic is accumulating in the region (e.g. Burton, 1997; Klein, 1997; Lotz, 1997; Mokuku, pers. comm.1998; Stiles, 1995; Stuart, Morojele & Lefoka, 1997).

Learning for Sustainability (LFS) is a pilot project initiated through collaboration between the Danish funder DANCED and the Departments of Education of Gauteng and Mpumalanga provinces. Its ‘development objective’ is that

By the year 2005, the national education system has developed a curriculum framework and teaching and learning processes that support environmental education objectives to equip learners with knowledge, skills and attitudes to respond constructively to environmental challenges (Project Document, 1997).

It aims to support the two government departments in enabling teachers to integrate environmental education within the new curriculum framework, using a learner-centred, activity-based pedagogy. As is the case in the Danish education system individual learners’ existing knowledge and ideas are strongly foregrounded, and its constructivist pedagogy represents a significant departure from both traditional (albeit changing) African cultures and much classroom practice in South Africa. LFS also trials a participatory

model of professional development. The project is in several ways therefore 'foreign' to the contexts in which it is being piloted.

As a pilot project LfS is carefully monitored. As part of the formative and summative evaluation for which the Environmental Education Unit at Rhodes University was contracted, it was suggested that we do a 'baseline' study against which to compare outcomes planned beforehand within the project's logical-framework. Instead we opted to develop a contextual profile. This constitutes an increasingly detailed picture of the (dynamic) socio-political, economic, cultural, physical and epistemological milieu within which the participating teachers work, and with which the project staff (all of whom are from elsewhere) need to be familiar in order to support these teachers adequately. The contextual profile is updated on an on-going basis as we and the project staff come to understand these contexts better through our data collection activities. Some of our findings are reported here for not only do they provide a backdrop against which to plan, adapt and assess responsive project activities, but they also highlight broader issues regarding professional development in the context of radical reform and environmental education.

#### AIMS

This paper shares a selection of results from the contextual profiles developed thus far. The results about teachers' contexts, views and issues may resonate strongly with other teachers and those involved in teacher support work around the new curriculum framework in South Africa. However, the aim is not to generalise about how the country's teachers currently think and feel about Curriculum 2005 (C2005) and environmental education. Rather, it is to sketch aspects of particular contexts so as to alert both those involved in the project and the readership of the journal to emerging professional and curriculum development issues arising from these contexts. These issues require pragmatic consideration within the execution and evaluation of this project (and probably other professional development contexts, too). They also add to intellectual considerations of tensions between technicist (technique-driven, content-driven) curriculum and teacher development work and contextual environmental education processes (see also Lotz & Olivier, 1998).

The assumption driving this paper is that teacher development work cannot take place in a void, as if all teachers and their contexts are the same and their issues and expectations easily replaced by those of the

developer/reform initiative. A research-based sketch of the contexts within which the LfS project functions raises several academic issues around environmental education and curriculum support work with practising teachers.

Secondly, the paper aims to illustrate the value of combining questionnaire, interview and observation data to sketch out a contextual profile with some depth. Previously in this journal (Janse van Rensburg, 1996) I compared large-scale surveys with small-scale action research studies and argued that while the latter methodology is easily overrated, it has greater potential for transformative research than the survey. The LfS contextual profiles are based on a survey in which questionnaire data has been most usefully contextualised, deepened and challenged through site visits and interviews with project participants.

#### RESEARCH METHODOLOGY AND PROJECT SITES

The methodology for the evaluation was designed to fit in with, make use of and where possible enhance project activities. The project was usually introduced to teachers by project staff through invitations via district offices and school- or cluster-based meetings. At the first meeting thereafter questionnaires were distributed to teachers who joined the project. This questionnaire asked teachers to tell us about themselves and aspects such as their teaching experience, teaching styles, main issues at school, expectations of the project, and their existing insights into Outcomes-Based Education (OBE), 'environmental education' and 'sustainability'. While teachers were encouraged to elaborate on their answers, few did so. Data collected during interviews (conducted at project meetings, workshops and specific research appointments) added more depth and clarification, as did data from observations during project activities, and data collected from project activities themselves. The latter included an activity in which teachers posed questions about C2005 to a fictional government official and a 'camera activity' in which teachers took pictures of their local environments and analysed associated issues.

The project is based in three sites along an east-west line between the Kruger National Park and Johannesburg: Mpumalanga East, Mpumalanga West and eastern Gauteng. In each site project activities take place in a number of district-based clusters of schools. These clusters include urban industrial centres surrounded by mining, commercial farming and forestry activities, and rural settlements featuring

subsistence farming and self-employment' in former 'homelands', i.e. settlements historically allocated to different ethnic groups as part of apartheid policies, usually in economically less viable parts of the country.

## RESULTS: THE PROJECT CONTEXT

### Environment: Risks and Resources

On the outskirts of Springs, a project site some 60km east of Johannesburg, a landowner had erected a sign saying "Toxic City. Dangerous Pollution. Enter at your own risk". While it may be overstated, the sign is not entirely out of place, as heavy industry including mining create serious pollution in and around the town. The nearby KwaTema, also part of this project site, is one of the most violence-ridden 'townships' on the East Rand. Here members of 'student' organisations regularly disrupt schooling to protest against the jailing of comrades implicated in political violence and request investigations of the alleged involvement of police, local business and politicians in the same (Dlamini, 1998). The walls of Lefa Ifa Senior Secondary School feature scars from bullets fired from the adjacent workers' hostel and windows are heavily barred. Those pupils who have the means take a daily bus to, *inter alia*, a project school 30km away in Nigel. The teachers at the latter school report that the 'guest' students are not 'used to' a full school day's work and have a disruptive effect on schooling.

The second project site, 200km to the east, includes Middelburg, a large industrial town surrounded by fertile plains where large-scaled mechanised farming raise dust clouds to parallel streaks of pollution from power stations, the latter being fired by the coal mines which add to the area's environmental resources and risks. Other clusters at this site are situated two hours' drive to the north. The surroundings of Siyabuswa and KwaMhlanga have far fewer resources and environmental issues of a different kind, including unemployment and poor infrastructure. Problems at schools include inadequate toilet facilities; pupils squat at the bottom of the grounds with little privacy and no water to wash hands.

The most eastern project site features scenic hills, lush vegetation and tourist facilities as well as large-scale forestry and commercial farming. Nelspruit is the capital of the province and well-resourced, but schools on the outskirts of White River and Hazyview, near Kabokweni and KaNyamazane, suffer from the neglect and under-resourcing characterising former 'homeland' environments. A teacher at a high school

showed me knives confiscated from fighting students and reported that others carry guns. As at the other project sites 'black' and 'white' South Africans lead starkly separated lives, with citizens of Indian and mixed descent caught in-between. Political orientations range from predominantly 'conservative' whites to 'radical' black union members.

### The Teachers: Searching for a Better Way

A statistical profile of the participating teachers who have thus far completed questionnaires (N=90; Appendix A) indicates that the project participants are mostly experienced high school teachers who teach mainly in the sciences (physical and life sciences, biology, agriculture and geography). This distribution reflects the response to the invitations sent to schools by the departments (see below) and hence partly the officials' understanding of the project. It also reflects the origins of the LFS project in the Life Sciences Project in Namibia (Project Document, 1997) which aimed to integrate the physical and biological sciences and agriculture. The sprinkling of teachers teaching languages, commercial subjects etc. is *inter alia* explained by a widening interest in project participation around teachers' needs for professional development in OBE (see below).

The majority of participating teachers are male; in KwaMhlanga cluster e.g. only one female teacher participates. The gender distribution has been explained in various ways. Male interviewees indicated that female colleagues are simply not interested in non-teaching activities after school; or that women's traditionally higher load of house work prevented them from participating in such activities. Mrs Ledwaba, curriculum implementor for Siyabuswa, explained that men from the area tend to restrict their wives' movements outside of official working hours. Female teachers from KwaTema were too fearful of attacks, e.g. from students, to leave school late in the day. Mrs Ndlhuli, curriculum implementor from Insikazi, disagreed that women are not interested in professional development, alleging that most of the teachers who enrol for further study are women. She explained that the project called for 'outgoing' teachers who could share their learning with others and somehow more men than women were chosen to fit this bill.

While most teachers were assigned without choice to the project by district officials via principals, some of the participants expressed a prior interest in environment, reflected in hobbies such as hiking and fishing. Many more have an interest in activity-based, 'more

practical' ways of teaching and almost all teachers indicated that they hoped the project would help them understand C2005 and OBE.

### 'Teaching in a Vacuum': The Classroom Context

In response to the question "What do you see as the most important problems and challenges facing you in your teaching?" teachers listed the range of issues summarised in Table 1.

**Table 1: Teaching Challenges Listed by Participating Teachers**

Limited resources (apparatus, teaching materials/ 'aids', books) and poor facilities

'Over-crowded' classrooms and high student: teacher ratio

Poor logistical management ('educational red-tape'), 'delivery' (e.g. text books arriving late) and support systems within government

Ineffective governance of schools  
Discipline; Vandalism; Poverty; Illiteracy  
Over-age learners (who should have completed schooling some years ago)

'Pumping knowledge to the learners who sometimes never grasp'

The medium of instruction (English or Afrikaans) not being the home language of learners

Methods of teaching; 'Teaching in general!'  
Change from past experience/traditional system to the new/OBE system; their ability to adapt to C2005 - the difficulties both learners and educators will have in this transition

Rotation teaching (between grades, preventing teachers to build up experience)

Lack of commitment on the part of students, teachers, and parents

Poor relations and a 'lack of respect' between teachers & learners

The culture of learning, to motivate learners (particularly when many are unlikely to find employment after schooling); to make learners 'believe in themselves', to 'involve pupils'

observation at schools. Poor examination results in participating districts are also telling. In one project district with 28 senior secondary schools, in the majority of those schools (68%) more than 50% of students failed their matric examinations in 1997 (data provided by district office). Three of these schools are included in the project; in fact the project schools were in some cases chosen partly to motivate teachers whose pupils' matriculation pass rates were particularly low (Mr Khoza, pers. comm., 1998).

While many of these contextual aspects affect the LfS project directly, I will highlight two here. Firstly, teaching is difficult and the results more often than not disappointing. And secondly, finding a good teaching job is difficult.

To illustrate the latter point, consider the case of Mrs Moema who commutes 30km to and from work every day in a bus with standing room only. Or Mr Mtsweni who years ago found a teaching post 1000km away from where his wife found hers, and has been unable to live with his family since then. While posts may not be convenient, teachers also fear 'retrenchment' and 'redeployment' in what they see as a very unstable education system. While this apprehension was not mentioned specifically in questionnaires, it surfaced repeatedly in casual conversations. (Klein (1997) also found it an important contextual factor in her work with teachers). Interviews indicate that it partly motivates some teachers' continuing participation in this project, and in particular, some teachers' request that the project provides them with a certificate to reflect that participation. Others are hoping that the project may enable them to find better jobs elsewhere, perhaps in the environmental field.

Other teachers are committed entirely to teaching in schools, and some like Mrs Moema even report that they enjoy the work, but no-one found it an easy task. The 'culture of learning' is virtually non-existent. One curriculum implementor described the schools in his district as 'factories for [producing] criminals'. Many pupils in the project schools are simply not interested in or able to learn in school. Here one can only speculate about the reasons; there are a myriad to choose from. Is it the poor facilities in schools - being crowded in with too many others in a too-small room, having to make do with text books which arrive too late - or the threat of violence from class mates, the remnants of a politicised childhood, having to switch mid-way through high school to a new school where your language is not spoken, or the absence of relevance in the school curriculum for one's life circumstances? It is the latter aspect, against the back-

The urgency of these issues is underlined by the frequency with which they were mentioned in questionnaires and interviews, and by personal

ground of the others, that caused the Science teacher at Alra Park to state "We're just teaching in a vacuum". The syllabi which he and colleagues follow are based on abstracted content, and in the absence of resources with which to teach 'more practically', many learners struggle to make sense of this content.

So this is one dimension of the 'vacuum' which the title of this paper refers to: the curriculum may fail to connect with anything in a learner's mind, partly because it is taught in an abstracted, content-driven manner, partly because the content does not related to the learner's life: her parents' socio-economic circumstances, the diagnosis she received from the clinic, or her prospects for employment. This makes teachers feel that they are teaching in a vacuum in the learners' lives. In questionnaire responses on what OBE and environmental education entail (Tables 2, 4), 'useful knowledge' was the hopeful description several teachers used.

At the same time the uncertain, under-resourced context in which project participants teach can also be described as a 'vacuum'. Most of them have not had any substantial in-service support around forthcoming curriculum changes (see comments in Table 3 from an activity in which teachers were asked what questions they have for 'Head Office'). The government departments who assigned them to the project are, in one participant's words, 'trapped in logistics' and often unable to provide them with basic support such as adequate notification or transport to attend project activities. And most of the teachers are uncertain of the future, whether they will be able to hold on to their teaching posts or whether they will be able to find something better; what will be expected of them within the OBE framework (see Table 3) and how they will cope with the new expectations in the contexts sketched above. C2005 is seen by many teachers as something that will provide substance to their teaching-in-a-vacuum (see Table 2), but to these and other teachers the government's reform initiative is itself happening in a vacuum, as the next section illustrates.

#### Free from Being 'Tied to the Syllabus': Teachers' views of OBE and C2005

The LfS project teachers have mixed feelings about the imminent curriculum reforms. Some are apprehensive about the possibilities of making C2005 'work' in the specific contexts (under-resourced, 'over'-crowded, poorly supported) in which they work. Some are excited about the possibility of transformation and have their hopes pinned on a new curriculum that would be more appropriate to the lives of their

students, more 'practical', more likely to lead to learning-with-understanding, 'life skills' and employment opportunities. Many teachers are both apprehensive and excited!

Table 2: Participating teachers' views on OBE

- \* "a more advanced education we can give our pupils"; a new approach
- \* learner-centred teaching; learners to be 'involved' and active; learners take responsibility for their learning; have a chance to think on their own; critical thinking; solving problems, life skills
- \* every learner is unique; every learner can succeed; learners learn at own pace
- \* group work, discussions, exploration, investigation, self-discovery, experiential learning, more projects and individual work, 'a lot of activities' capacity-building
- \* learning based on available resources
- \* teachers act as facilitators, mediators; guide but don't 'transmit' knowledge
- \* learning emphasised more than teaching
- \* teaching for results and understanding rather than examinations, content
- \* clearly defined objectives, emphasis on observable change in skills displayed by learners, what learners can do
- \* OBE brings theory and practice together; 'useful knowledge'; learners being able to "practice what they have learned, in real life"
- \* more practical, encouraging trade & skills education; emphasis on business, technology;
- \* makes learners more 'marketable' upon completion of studies
- \* emphasis on the future of learners
- \* involves 'learning areas', ('practical') 'outcomes', 'continuous assessment'
- \* unsure (30 responses in one sample of 63 teachers)

In another project activity teachers were asked "At the thought of having to implement C2005 what animal comes to mind and why?". Teachers' concerns around curriculum reform were illustrated in the following responses taken from a project report by Du Toit (1998a,b):

C2005 makes me feel like a snake! ... it's [a] scary animal, it's dangerous and can bite. It's also a problem animal that most would like to get rid of so that they do not have to deal with it. Only the brave will face it, most will run away out of fear.

... a tortoise is a slow and confused animal. It very seldom has a sense of direction and it moves at an incredibly slow pace. And by the same token I expect the implementation of C2005 to be a slow and confusing process. There does not seem to be a destination in sight and I am afraid that confusion will be the result. It is though I feel sad and start to drag my feet. I think that it is going to be a slow process for teachers to adopt the new methods and it will be difficult for parents to understand what is going on.

But not all responses were as cautious. One teacher thought of the monkey which

adapts to any situation and can use tricks to get out of difficult situations. It [is] an agile animal and can move easily from one habitat to another - it is a survivor!(Du Toit, 1998b).

Excitement stems *inter alia* from the vision that OBE will, to paraphrase Mr Williams from Alra Park, loosen the tight ties of the existing syllabus and give teachers more freedom around what they teach. Responses in Table 2 illustrate hopes that C2005 will enable learners to develop skills and learn about locally relevant issues that would connect with their lives. Teachers linked the emphasis on activities and individuals' learning to an expectation that they will be able to overcome the 'vacuum' around abstract, content-driven curricula.

However, Table 3 illustrates the many questions around the actuality of the reform. Not surprisingly teachers expressed a strong need for professional development around the new curriculum framework. This was in fact the main outcome many of them expected from the LfS project (even though the latter focuses on the integration of environmental education into their teaching).

Teachers' understanding of new curriculum concepts are currently very limited, as many acknowledged in the questionnaires. One participant who supported the idea of constructivism (a set of theories embraced in C2005, based on the notion that learners construct meaning rather than receive it passively) nonetheless claimed that a particular workshop had '*given* [him] knowledge'. While several teachers' questionnaire responses indicated that they made use of 'activities' in their teaching, and saw OBE as 'activity-based', their views on what comprise 'activities' were rather limited. In interviews and project activities teachers described the process of taking learners outside to show them the clouds during a climatology lesson, for example, or taking pupils to the library so that they can 'look at the globe' as 'activities'.

Interviews also revealed expectations that the project will 'resource' teachers - providing them with pre-prepared resources or exemplars that they can copy. Being curriculum developers rather than implementors is a new idea not fully grasped by most. During opportunities for curriculum development - writing learning programmes about local environmental issues - teachers in the Insikazi cluster chose environmental issues around which they already had subject knowledge (such as soil erosion) - and wrote their learning programmes around this content, rather than around outcomes (Du Toit, 1998b). The implications of developing curriculum around local environmental issues, even if you do not have technical knowledge around these issues (see Greenall Gough & Robottom, 1993 and Lotz & Robottom, this issue) are not fully grasped by participants, despite the fact that some mentioned it as a dimension of C2005. Instead, 'environment' is either related to rather technical knowledge about our 'habitat', or superficially around a place to keep tidy. These views are introduced below.

#### **Teachers' views on environment and environmental education**

Questionnaire responses indicated that participating teachers' understandings of 'environment' and 'environmental education' were little different from views widely shared among educators (see e.g. Pholo, 1994). That is, 'environment' was either described as our surrounds or in technical terms borrowed from text books - as biotic and abiotic components or as the habitat of organisms including people. These responses do not necessarily indicate teachers' views of the signified, that which many environmental educators have in mind when we use the term

Table 3: "What would you, the teacher, ask Mr Ndlovu, an imaginary Head Office official, about C2005?"

SPRINGS-NIGEL CLUSTER, GAUTENG	SIYABUSWA CLUSTER, MPUMALANGA WEST
<p>Who decided about C2005? When will it be implemented? Will C2005 fail? Has OBE failed abroad?</p> <p>How will teachers be trained to implement C2005?</p> <p>What is the difference between the 'old' and the 'new'? What is an outcome?</p> <p>What will happen in the classroom? How will the timetable be within C2005? How do you handle large classes and do OBE? How to do assessment, especially in large classes, within OBE? Will formal examinations be phased out? Will standards be changed? Will the curriculum only focus on skills? What about content in C2005? What will happen with the old subjects?</p> <p>Will learners be ready for OBE? What will happen with weaker and slower students? How do you manage differentiated learning?</p> <p>How are parents involved?</p> <p><i>Other concerns:</i> The new terminology, lack of resources, time and 'space' to do OBE within the present syllabus</p>	<p>What is C2005? When &amp; how is C2005 [to be] implemented in schools? How should one prepare lessons for C2005? How can I implement C2005 in the classroom?</p> <p>Is C2005 possible in overcrowded classrooms? How do you expect us to introduce C2005 without basic resources? Is it possible to apply C2005 to subjects such as Biology and Physical Science due to the lack of facilities? What measures will be taken to curb vandalism?</p> <p>Is C2005 applicable to all subjects?</p> <p>Will the present teacher cope with the demands of C2005? Did you prepare enough support material for C2005? How are other teachers going to cope as only few teachers are trained [in the LfS project]? What are your internal incentives for teachers who obtain qualifications in C2005?</p> <p>How would C2005 affect ABET [Adult Basic Education &amp; Training]?</p> <p>What is the sole and important purpose of introducing C2005 in our education system?</p> <p>Do you think this curriculum will be fully implemented as expected in 2005? What will happen if C2005 is found not to be suitable for us taking into account our present circumstances and our past history</p>

'environment', particularly as the signifier 'environment' is an English term and hence in the second or third language of many of the participating teachers. However, views of the notion of 'environment' are likely to influence teachers' orientation to environmental education. They may be related to a view of environmental curriculum as the transferral of technical knowledge about ecosystems and issues, reflected in the process of learning programme units in Insikazi mentioned above.

Teachers' views were further reflected in a camera activity in which they were tasked to take photo's of, among other things, environmental issues in their surroundings. Most pictures were of litter or denuded environments; in some clusters teachers found it hard to identify issues. In a workshop in Siyabuswa unem-

ployment was only seen as a relevant issue after some prompting. Forestry plantations are seen as beautiful resources which provide employment (Du Toit, pers. comm., 1998). The pollution involved in paper milling, the loss of farmland and biodiversity, depletion of the water table and the fact that most revenue generated through forestry leave the local area, are not recognised as related issues. Teachers' rather limited awareness of environmental issues (as assessed by an environmental education specialist, admittedly!) do not correspond to what Du Toit (pers. comm., 1998) describes as a general sophisticated political understanding among the participating teachers in the Mpumalanga East clusters.

There seems to be a gap between teachers' lived experiences and their 'academic' or school-related

views on 'environment' . Their responses to 'environmental education' often reflected an academic activity around factual knowledge, as illustrated by content-based learning programme development on soil erosion as environmental issue of choice.

Environmental education was also viewed as a means of raising learners' awareness of environmental problems and motivate them to respect nature. Some teachers views' were rather narrowly focussed on nature study, out-of-class activities and litter clean-up's. Several teachers indicated that they were not clear, as environmental education was not something that they 'taught'. Others however, seemed to find the heart of the matter in relating a range of learning areas in formal education with the issues emerging in the 'place where we live'. It is clearly inappropriate to generalise about (even the small sample of participating) teachers' perceptions! Perhaps the single most outstanding feature is that 27 teachers indicated that they were unsure as to what environmental education is.

#### DISCUSSION: SOME EMERGING PROFESSIONAL AND CURRICULUM DEVELOPMENT ISSUES

The need to be brief does not permit a nearly comprehensive discussion of the many professional - and curriculum development issues which the above (in itself limited) description of contextual aspects of the project highlight. Here I can only comment on a few.

Firstly, it seems inevitable that in all reform initiatives, while they carry within them the seeds of change, these are mixed with the soil of the past. While teachers are hoping for educational renewal to enable them move away from a content-driven, academically abstracted curriculum with little relevance to the lives of learners, when they have an opportunity to develop curriculum, they do so from the same content-driven perspective. The example of learning programme units developed in the Insikazi cluster with a strong focus on technical knowledge around issues such as soil erosion has a parallel in a project discussed by Jenkin (1998). While developing teaching materials for 'waste education' with a group of Eastern Cape environmental educators she found that participants replaced the contents of activity- and question-based worksheet drafts with lists of facts and definitions of terminology.

This perspective is carried through in project participants' views on professional development. While space does not permit to share these in detail

Table 4: Participating teachers' views on 'environment' and environmental education

*Springs-Nigel, Middelburg, Siyabuswa, KwaMhlanga, Insikazi, Nelspruit & WhiteHazy Clusters*

#### Views on 'environment'

- \* Nature; the physical environment; our surroundings
- \* The place where we live, 'life and place'
- \* Biotic & abiotic; habitat of plant, animal, people; biosphere and atmosphere; natural 'or man-made'
- \* Water, pollution, food
- \* The interaction of people and their surroundings
- \* Our physical, mental and social surroundings; includes our society
- \* Unsure

#### Views on environmental education

- \* Education about the environment; awareness education; care for nature/caring for the environment; preservation of nature
- \* Ecological knowledge; the study of the ecosystem; nature study
- \* Deals with practical aspects e.g. trees, food; education about pollution; keeping the environment (house, yard, surrounding area) clean; pupils must take care of their environment, clean it and use it effectively
- \* Conservation/use of (natural) resources; management of the environment
- \* Useful knowledge
- \* Deals with the social, political, economic and links them
- \* To know yourself and your environment; learning, knowing and experiencing our environment
- \* Problem-solving and critical thinking
- \* Everything - it introduces children to all learning areas; combines human sciences and natural sciences; the link between other subjects and nature; "integrates the surroundings in which we live with the learning areas"
- \* Concerned with how human beings interact with their environment
- \* Surroundings as basis for education; learning through environment, not just in classroom
- \* "Learning where you come from generally, life in particular"
- \* Deals with nature and how the surroundings influence children
- \* "An education which should take place within a particular environment"
- \* Unsure ; "not clear because it is part of Human & Social which I don't teach"



here, I noted that teachers and departmental officials in particular thought that project teachers could easily 'transfer' what they had learned to other teachers. The extended, participatory model of professional development followed in LfS is aimed at helping teachers embark on what is termed as a 'paradigm shift' to enable them to work within a radically new curriculum framework. It does not simply involve the transferral of skills and knowledge of terminology. Project staff need to be aware of these deeper contextual issues so as not to be misled by teachers' ability to refer to new concepts.

From the questionnaires (an item on expectations of the project) we also learned that participating teachers' concerns centre first and foremost on C2005. While the project's focus is environmental education, it had to respond to meet teachers within the context of their needs.

Another area of negotiation that lies ahead - not just in this project but in the country - is the difference between the contexts in which constructivist education has developed and the cultural traditions and resource-poor contexts in South Africa. "It is difficult to practise the principles of individualisation", Ms Mthimkhulu of Lungisani High wrote with reference to crowded classrooms. Principal Letuke offered that, at home, "the black child is not supposed to ask questions". There is also a culture of resistance amongst pupils who do not necessarily respond well to learner-centred pedagogies, although there were mixed reports about teachers' success of trying these out in the classroom. (See also Constans, 1997.)

Other areas in which the project ideals come into conflict with the project context are:

- \* the professional development of the project, while aimed at improving environmental education in schools, may also be enabling some teachers to leave the profession; it should also be noted that while female teachers, are not generally regarded as 'outgoing' and in a position to teach others, the female teachers interviewed in this project all expressed a commitment to their current jobs while several men expressed an interest in other possibilities.

- \* teachers' requests to be accredited for their participation in the project is seen by some as running counter to project ideals of professional growth for the sake of learners' education (see in this regard a discussion around the accredita-

tion of professional development programmes by Janse van Rensburg & Lotz, 1997).

In these 'contextual negotiations' project staff - and others working with teachers in South Africa - can be motivated by the enormous commitment so many teachers show, despite dire circumstances, to improving not just themselves, but also the education they are able to offer learners.

We also need to find useful ways to research and assess contextual environmental education curriculum and professional development processes. The methodology we used in this study gave rise to a rich array of findings. Questionnaire data was at times significantly clarified by interviewing and observing project activities (for example that what teachers meant when they reported to be teaching with 'activities' differed from what project staff meant). In other cases interviews revealed what questionnaires did not, e.g. teachers' apprehension about retrenchment. In the light of the individual differences between participating teachers the broad background emerging from the contextual profile needs to be supplemented with individual profiles of a selection of project participants. Over the next months the value of the range of qualitative findings in project evaluation processes will be put to the test.

#### IN CLOSURE

Teacher development work cannot take place in a void, as if all teachers and their contexts are the same. In this project there is a diversity of teachers with a range of understandings and - sometimes ambiguous - perceptions. They do have a range of concerns and contextual factors in common. A review of these concerns and contextual factors within the LfS project raises several issues around environmental education and curriculum support work with practising teachers. The LfS staff and funders have to plan and assess project activities against these issues. In the broader environmental education discourse we need to give due consideration to issues such as tensions between technicist teacher development work which assumes teachers' lives to be a 'void', and assumptions that environmental education and/or professional development involve the simple transferral of context-less information into that void.

Studying the context of the LfS project left me with an overwhelming impression of the need to support South Africa's teachers as responsively as possible. Meeting them half-way on 'new ground' - for both parties - is the challenge of Learning for Sustainability.

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	Springs	Middelburg	Siyabuswa	KwaMhlanga	WhiteHazy	Insikazi	Nelspruit
<b>Subjects taught:</b>	<b>N=50 teachers</b>	<b>N=4</b>	<b>N=2</b>	<b>N=10</b>	<b>N=6</b>	<b>N=7</b>	<b>N=11</b>
Agriculture			1	4	3	2	4
Biology	27	1	1	3	2	1	8
Science	10			3	1	4	
Geography	18	1		2	1	2	
Life Science		1					
LifeSkills/Guidance	1	2					
Afrikaans	2	1		1		1	
English	5	1					4
Zulu/Tswana/Ndeb.	3	1		1			
Bus.Eco., Account.		1	1				
Mathematics	4	1		1		1	
Phys. Ed., Relig. Ed.	1			1			
Art, Handicraft	4			1			
History	5						
<b>Grades taught:</b>	<b>Springs</b>	<b>Middelburg</b>	<b>Siyabuswa</b>	<b>KwaMhlanga</b>	<b>WhiteHazy</b>	<b>Insikazi</b>	<b>Nelspruit</b>
Lower than 7	5	3		3			
Grade 7	5	1		2			
Grade 8	26	2	1	6	2	4	2
Grade 9	28	2	2	6	3	5	4
Grade 10	29	2			4	9	5
Grade 11	27	1		1		1	7
Grade 12	25	2		1	3	2	8
<b>Experience</b>							
0-2 years	8					1	
3-4	6		1		3		
5-6	7	1		2	2	4	2
7-8	2		1	3		1	1
9-10	6	2		3	1	1	3
11-12	9			2			2
More than 12	12	1					3