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To act as a responsible body for the purpose of consultation and co-ordination on matters of public and professional interest concerning environmental education in southern Africa.

- To promote interdisciplinary as well as multi-disciplinary environmental education.
- To promote, organise and sponsor activities associated with, and research in, environmental education.
- To disseminate information on environmental education.
- To provide opportunities for the exchange of ideas and opinion, *inter alia* by means of the publication of a journal, bulletin, newsletter and occasional monographs.

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Happy Khumalo

Editorial

E E

With another year almost behind us, and the start of the United Nations Decade of Education for Sustainable Development (UNDESD) almost upon us, we can reflect on the opportunities and achievements encountered during 2004 as well as look forward to the challenges the Decade poses.

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2004 certainly has been a year filled with many happenings in the environmental field. These are some of the global events that have taken place. In January a Consultative Workshop for the Development of a National EE Strategy (NEES) in Tanzania was hosted; February saw the gathering of a variety of course developers from the SADC region attend a Course Materials Development workshop; in March the BirdLife World Conservation Conference focused on the challenges and opportunities facing the world in conserving nature and sustaining people's livelihoods; March also saw, the 22 annual EEASA conference held at Treverton Schools, looking at ways of addressing the UNDESD; the International Consultation on Education for Sustainable Development held in Göteborg, Sweden during May; the Sub-regional Editorial Workshop of the African Environment Outlook for Youth in southern Africa was held in June; during September, the World Congress of Environmental Education, was held in Rio de Janeiro; and in November the 3rd IUCN World Conservation Congress, took place in Bangkok, Thailand. Many other events on local and regional levels have also taken place in southern Africa and are shared in publications such as the EEASA Bulletin.

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The first article takes a look at the St²eep, a partnership between the Zimbabwe Ministry of Higher and Tertiary Education and a Belgian semi-governmental organisation. Jan van Ongevalle writes about how the St²eep is working in three teacher training colleges in Zimbabwe to integrate EE into the curriculum.

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Selwyn Jacobs looks at the 'picture-framing' tool to assist teachers with environmentally focused lesson plans. The use of newspaper articles and photographs are used as examples of how this method can support teachers with a seemingly daunting task of integrating environment into all learning areas. Also making use of tools to enhance environmental learning and action taking are micro-science kits which Charles Chikunda motivates the use of in his article '*Micro-Science Kits: A Step Towards Sustainable Development*'.

Proverbial expressions are discussed in Caleb Mandikonza's article. Caleb pays particular notice of the ambivalence among the Shona people of Zimbabwe and the important part proverbial expressions play in language.

A workshop of information on EE processes for Nursery and Primary School Teachers was organised by the Democratic Republic of Congo National Network for EE. The aim of the workshop was to build capacity in EE processes among the teachers' and other stakeholders involved in the environmental teaching and curriculum development fields. Marc-Robert Midi shares the outcomes of this workshop in his report.

Thabo Sibeko speaks about the need for more realistic learning support materials that encourage people to think, plan and take action when responding to environmental challenges. Materials should be developed in the context of the community who will be using them. Saasa Mufalali is working on a project in Zambia for the creation of a cultural database in support of EE processes. Saasa shares the ideas of this project.

A case study of a community affected by a Cholera crisis is shared in Jim Taylor's article. Jim looks at how the crisis was initially attended to and how meaningful learning came out of this example.

In the final article, Clayton Zazu gives his view of the 'Learning Through Doing' workshop and how participants responded to a workshop that required much 'doing' in order to share knowledge. One of the activities was the making of bread from an indigenous perspective and the recipe is shared with you.

Enjoy the baking and reading!

Elizabeth Martens



CONTENTS

ARTICLES

The St²eep Rise of EE in Secondary Teacher
Training in Zimbabwe

Jan van Ongevalle..... 3

Framing Ideas Towards Locally Relevant
Environmental Learning

Selwyn Jacobs..... 7

Copying With Ambivalence Among the Shona
People of Zimbabwe: A case of Shona proverbial
expressions

Caleb Mandikonza..... 12

Workshop of Information on EE Processes for
Nursery and Primary School Teachers..... 16

Micro-Science Kits: A Step Towards Sustainable
Development

Charles Chikunda..... 18

A Development of Learning Support Materials for
Environmental Education in Schools

Thabo Sibeko..... 21

The Creation of a Cultural Database in Support of
EE Processes in Zambia

Saasa Mufalali..... 22

Meaningful Learning and Social Change: The Case
of the Eshowe Cholera Crisis in South Africa

Jim Taylor..... 27

Learning Through Doing Workshop: An overview
of the workshop with a critical perspective

Clayton Zazu..... 31

Indigenous Ways of Knowing..... 34

RESOURCES

Poisonous Plants of Zimbabwe..... 35

EE EVENTS IN THE
REGION 36



ARTICLES

The St²eep Rise of EE in Secondary Teacher Training in Zimbabwe

Jan Van Ongevalle



St²eep stands for Secondary Teacher Training Environmental Education Programme. It is a partnership between the Zimbabwe Ministry of Higher and Tertiary Education and VVOB (a Belgian semi-governmental organisation). The project started in January 2003 and runs in Harare, Mutare and Bulawayo secondary teachers colleges where it aims at integrating EE into the curricula and to support EE initiatives in the colleges and pilot schools in order to enhance sustainable utilisation of natural resources and lifeskills.

Already existing Environmental Education processes and initiatives in Zimbabwe form the basis of this programme. Important milestones in this regard are the recommendations on EE from the Presidential Commission of Inquiry into Education and Training (1999) and the development of a National Environmental

Education Policy for Zimbabwe in 2001 by the Zimbabwe Environmental Education Consultative Forum (ZWEECF) under the Ministry of Environment and Tourism. The St²eep programme aims at supporting and implementing some of the suggested strategies and action plans from the formal education sub-sector within this National EE policy.



Celebrating tree planting day

As the St²eep programme is entering its second year, it is interesting to note that its focus of action is widening. 2003 was characterised by a variety of activities that aimed at making the project structures operational, raising awareness on EE, supporting national and college based EE activities, building EE capacity of lecturers and the development of infrastructure such as functional resource centres with educational materials, computers, telephone

and internet connection. These activities have proven to be essential in establishing a sound base from which the EE integration and implementation in the curriculum could be further prepared and kick started in 2004.



Producing coffee from the baobab fruit

Since the start of 2004, St²eep has focused more and more on the institutional environment in which the EE integration process will have to function. By involving college administrations and academic boards; the Department of Teacher Education from the accrediting university; the two Ministries of Education and the Ministry of Environment and Tourism and; administrations of pilot schools, St²eep is working more towards EE implementation as an institutional requirement and less as a voluntary initiative.



Curriculum innovation initiatives however are not realised overnight, especially when a strong participatory approach is used as is the case within St²eep. In line with this approach, by consensus among all stakeholders, St²eep has kept the use of external experts to a minimum and has opted instead to draw from local expertise within the colleges and local partner organisations. This strong participatory approach has proven to have several advantages. Firstly, it involves the actual curriculum implementers in the review of their own curriculum and therefore strongly enhances the ownership of the whole review process and the resulting EE integrated curriculum which they themselves will have to implement. Secondly, it assures general agreement on the concept of EE with its priorities and actions locally defined and therefore relevant to the local context. Thirdly, it creates opportunities for lecturers and other project partners who are involved in St²eep to actually use or develop their expertise in different fields including educational practice, group facilitation, the use of computers, research, development of resource and course materials, etc. This unique opportunity for professional development might be a strong motivational factor that could help to explain why lecturers who are involved in St²eep activities are willing to invest so much time and sometimes their own financial

resources without any form of payment. Allowing lecturers to come together and participate in the review of their own syllabi has further enhanced the ownership of the curriculum development process and has broken certain forms of resistance that were quite strong with previous curriculum innovation programmes. Through capacity development at different levels, St²eep is trying to facilitate an enabling environment in which a home grown curriculum innovation process in terms of EE, developed by its own implementers, can be effective and sustainable.



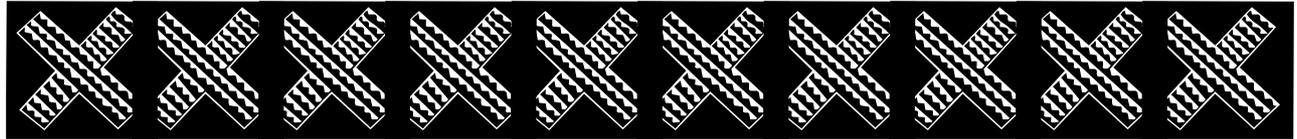
Training of trainers

To date, some major achievements within the St²eep programme can be noted. After a three year long participatory policy development process that has been supported by St²eep, the Minister of Environment and Tourism has finally signed the National EE Policy in July this year. The Training Task Team managed to finalise the Environmental Education training programme for college lecturers and a training of trainers workshop was successfully organised to train a number of

trainers who will be able to facilitate future EE training workshops. St²eep also embarked on the actual curriculum review process starting with a five-day EE orientation programme for lecturers from Professional Studies, Geography and Teaching Practice from the three colleges. This was followed by a number of consultative follow-up meetings and several section meetings. The syllabi under review are currently at an advanced stage and hopefully will be presented to the Department of Teacher Education (DTE) from the University of Zimbabwe (UZ) by the end of this year. This will allow implementation of the new syllabi by the beginning of 2005. All other subject areas will be reviewed during the course of 2005 and 2006. To date there is great commitment from the lecturers towards the integration of EE into their syllabi, indicating that St²eep is on the right track.

St²eep has also started to focus more on sustainability issues and has come up with a discussion document on future sustainability through which stakeholders can make suggestions and which will help the St²eep Operational Management Team to come up with concrete proposals towards sustainability. Other steps towards future sustainability include active local and regional networking which has already resulted in co-funding of several St²eep activities and increased cooperation with pilot schools





and the Ministry of Education, Sport and Culture in order to start thinking about the widening of EE implementation from the teacher training colleges into the secondary schools. The main challenge that St²eep is currently facing is probably the enormous work load of the National Coordinator and the Steering Team Coordinators. They have to do all St²eep activities on top of their normal lecturing duties and other college tasks. So far they have coped with this heavy workload because they are assisted strongly by the VVOB facilitators. However, this is not a sustainable situation and will be the task of the entire St²eep team to work out some concrete modalities that may address the situation.



Broad participation from ALL stakeholders during EE orientation workshop

Although everyone in St²eep is very busy with day to day activities, it remains very important to continue reflecting critically on the aims and objectives of the St²eep programme in view of a broader regional and global context.



Why work towards the achievement of sustainable utilisation of natural resources?

As in the rest of southern Africa, the majority of people in Zimbabwe (about 65%) live in rural areas where they rely on natural resources for their livelihoods (*State of Zimbabwe's Environment*, 1998). Key natural resources include fuel wood, water, healthy ecosystems and fertile land for agriculture and grazing. These natural resources and access to them is however threatened by increasing population levels, poverty, over-consumption, limited access to education and health services and limited livelihood options (Lotz, 2004). These threats and underlying causes of environmental degradation therefore undermine the livelihoods of people and can contribute to increased poverty and further degrading of the environment. It's in this context that we have to look at the role of environmental education and education in general as tools towards the sustainable use of natural resources, alleviation of poverty and sustainable development.

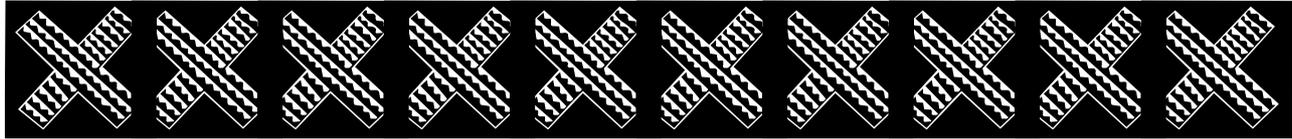
Is education recognised as a tool towards sustainable use of natural resources, alleviation of poverty and sustainable development?

The role of education in the above mentioned context has been widely recognised. The Rio Earth Summit in 1992 deliberated on the relationship between the environment and humans and, a global plan of action for sustainable development was developed in 'Agenda 21'. The 1996 SADC Policy and Strategy for Environment and Sustainable Development identifies EE as one of the major strategic activities for the region's environment and sustainable development programme.

The UN sponsored Millennium Summit in September 2000, saw 147 world leaders agree to the Millennium Development Goals as a response to issues of poverty, environmental degradation and health. Millennium Goals relevant to environmental education include: Eradicate extreme poverty and hunger, achieve universal primary education, promote gender equality and empower women, combat HIV/AIDS, malaria and other diseases and ensure environmental sustainability (Lotz, 2004).



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Does St²eep fit in with current global initiatives towards the sustainable use of natural resources?

Education as the foundation of sustainable development was reaffirmed at the Johannesburg Summit in 2002. At this summit, the United Nations mandated UNESCO to spearhead the Decade of Education for Sustainable Development (2005 – 2014) which aims to promote education as a basis for a more sustainable human society and to integrate sustainable development into education systems at all levels.



Active involvement during EE orientation

The UN recognises that there is no universal model of education for sustainable

development. While there will be overall agreement on the concept, there will be nuanced differences according to local contexts, priorities and approaches. Each country therefore has to define its own priorities and actions (UNESCO Website).

When I look at what St²eep is doing, it seems that we are actually preparing secondary teacher education in Zimbabwe for the Decade of Education for Sustainable Development. Through our broad based participatory approach towards the integration of EE in the curriculum, we make sure that there is general agreement on the concept of sustainable development and that the priorities and actions are locally defined. The main challenge however will be to continue critical reflection on the impact of EE integration towards the sustainable use of natural resources, poverty alleviation and sustainable development.

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Framing Ideas Towards Locally Relevant Environmental Learning

Selwyn Jacobs

Abstract

Photographs and newspaper articles were used to develop lesson plans, as well as Learner and Teacher support materials (LTSM) for curriculum implementation in the General Education and Training (GET) band. The research process took an issue-based, rather than a thematic approach to curriculum development. This paper describes the research process that was followed, which led to an open-ended framework to support teachers in designing locally relevant, environmentally focused lesson plans. The framework draws on the active learning framework, developed during the NEEP pilot project by O’Donoghue in 2001.

access to local environmental issues through newspaper articles. There is potential for its use in planning learner-driven project work, tracking learning outcomes and assessment standards and in designing contextually responsive curricula which develop learners’ action competence in dealing with contemporary sustainability issues.

through an ongoing process of professional development and action reflection. Initial explorations of the concepts environment and environmental issues showed that most subject advisors viewed environment as a physical “entity” out there that one could study, conserve and look after. Environmental issues mentioned were of a global nature, such as global warming,



Teachers in the Eastern Cape using the “picture-framing” tool to plan lessons

The simple nature, adaptability and open-endedness of this design tool proved useful in supporting curriculum implementers in designing action-oriented, socially critical learning experiences and activities around local environmental and sustainability issues. It helps teachers to make the link between environmental issues and risks, and learning area outcomes and assessment standards in a practical way.

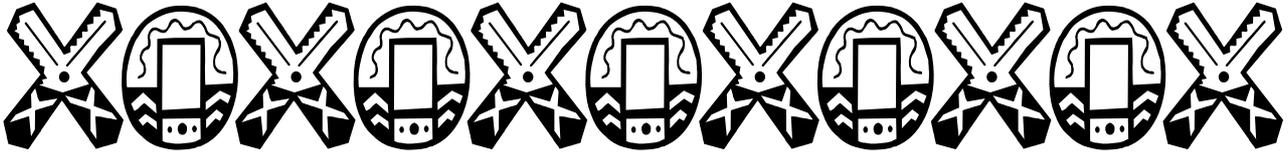
The potential of this approach to curriculum design and delivery, lies in its simplicity and the easy

Background

Our task as NEEP-GET(National Environmental education Project for General Education and Training) was to support curriculum developers and implementers in making the link between the two concepts environment and curriculum

the ozone layer problem and deforestation in Brazil in spite of the fact that some members were living next to the Durban South Basin!(a highly polluted area)

Subject advisors could see how environmental learning can be infused or part of Social



Sciences, Natural Sciences and Languages by focusing on topics such as water conservation, pollution, ecology and waste management. They however found it difficult to see it being an integral part of all the other Learning areas. Even after being introduced to the more holistic understanding of environment, with its associated economic, social, political and ecological dimensions, one Mathematics advisor constantly reminded us that “Maths is Maths!... you can’t infuse environment into Mathematics concepts!

Starting with Photographs

In order to explore and focus on local environmental issues, subject advisors were issued with disposable cameras and asked to take photographs showing their local environment.



Subject advisors analyzing their photos and viewing them different perspectives...



Making links between environment, Learning Areas and Learning Outcomes

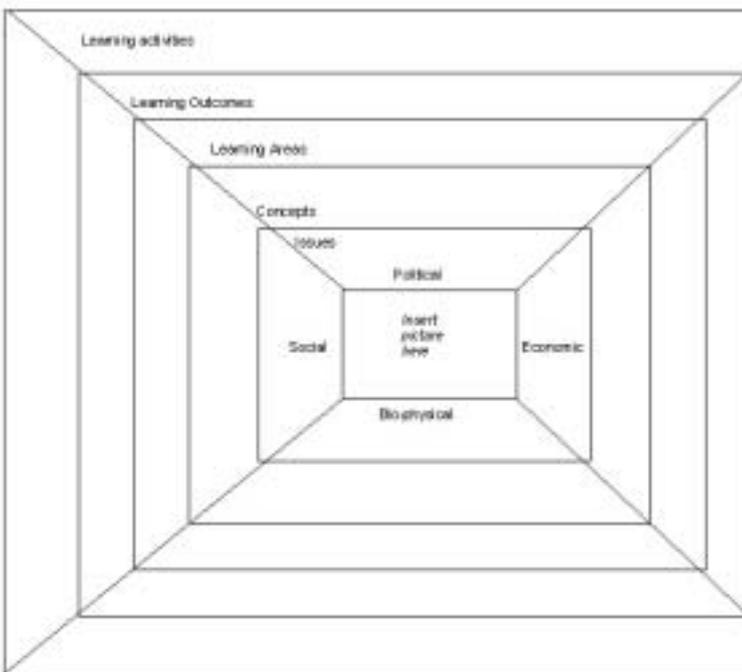
The photographs were analyzed in order to highlight social, political, economic and ecological issues. Various issues were identified, as well as possible topics to be covered in particular Learning Areas.

On reflection however, the chosen topics were divergent, scattered and did not show the interrelatedness between the various political, economic, social and ecological issues. Something was missing...

Using Newspaper Articles

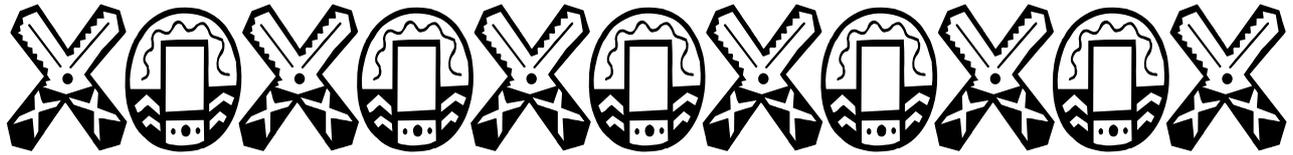
We also used newspaper articles to get people to identify and extract the various aspects of ‘environment’ within the stories. At this stage we were simply trying to make sense of the holistic interpretation of environment and gain deeper insight into how this model manifests in reality.

Framing Ideas



During the C2005 teacher training workshops for Grade 6 (June 20020, I was challenged to support teachers in integrating environment into all Learning Areas, within a one-hour session! This was attempted by drawing a series of frames around a central photograph depicting a local environmental issue. The frames followed a sequence, in line with C2005 curriculum design features namely:

- Identify the issue/concern to be studied
- Concepts to be explored in order to understand the issue
- Learning areas in which the concepts can be explored
- Outcomes to be developed in the Learning Area
- Tasks and activities learners will engage in
- Learning Support Material to be used



On reflection, this framing technique was:

- Simple to use
- Open-ended enough to be non-prescriptive
- Contextually responsive to local issues
- Helped curriculum developers and implementers to re-orientate their practice from focusing on topics such as water, pollution and waste towards a more integrated, issue-based approach.

The photographs however, were open to diverse interpretations since we did not know the story behind it.

Photograph with an Article

The problem with using photographs only was that we did not really know the story behind the pictures, and often the topics chosen for investigation were diverse and covered many unrelated issues. Using newspaper articles with pictures, gave us an understanding of the story behind the picture. Knowing the stories behind the pictures helped teachers and subject advisors to identify more relevant topics/issues to be



Developing lesson plans using an article

“taught” in different Learning Areas.

Learning activities which teachers and subject advisors came up with were not designed to allow learners to be critical of the status quo, nor did it allow for investigating the underlying causes of the current environmental issues.

How could we encourage critical thinking?.....

Sustainable Development as an Enabling Concept...

It was decided to critically explore the concept 'sustainable development', since it was the focus of all media at the time (*WSSD, Johannesburg, September 2002*). A satellite photograph showing the earth at night (*Time Magazine*) was used, together with critical questions to initiate discussion around the concepts “development” and “sustainable”.



The earth at night

Some of the critical questions used were:

- What does it mean to be a developed/ developing or underdeveloped country?
- If we are developing, what are we developing towards?

- What criteria are used to determine whether a country is developed or not?
- Who decides on these criteria?

Heated debates took place around social injustice, human rights abuses and access to natural resources globally. By refocusing this debate back to our local newspaper articles, subject advisors come up with the slogan:

“GLOBAL ISSUES AT LOCAL LEVEL”

By analyzing a number of newspaper articles published at the time, we were now critically looking at the causes of environmental issues, as well as finding the interrelatedness of political, economic, social and ecological aspects of the environment. The article analysis also shows the relationship between social justice, human rights a healthy environment and inclusivity. This relationship, which is a central principle of the Revised National Curriculum Statement (RNCS), was clearly understood and revealed by the picture framing activity which subject advisors were engaged in. We had made a breakthrough!...

Unpacking the Issue Using Focus Groups

In order to encourage a deeper understanding of the environmental and sustainability

issues within the stories, the cluster group was asked to form different focus groups namely economists, conservationists, social workers and politicians. The various focus groups were asked to read the same newspaper article, but highlight only their aspect of the story (*using a highlight Koki pen*).

This activity gives individuals the opportunity to “see the story” from another perspective.

A public meeting or a mock parliamentary session is then role played between the economists, social workers, conservationists and politicians, where the issues within the story are delved into deeper, showing how the different perspectives are interrelated.

Individual issues and parts of the story are then cut out and pasted around the central picture, using the picture-framing tool.

The various issues/risks/topics identified can be turned into focus questions for further investigation through the use of the Active Learning Framework, an open-ended teacher-planning tool developed by Rob O’Donoghue during the NEEP pilot project in 2001.

A number of lesson plans aligned to the RNCS were developed using various newspaper articles. It was found that the planning method allows for the delivery of the RNCS outcomes and

assessment standards whilst at the same time addressing current environmental and sustainability issues.

Potential for this Planning Method

This emerging curriculum design tool responds to many of the recommendations of Agenda21, Chapter 36 (*Earth summit, Rio 1992*) as well as the *Gabarone Declaration (EEASA conference, Botswana 2002)* in support of a re-orientation of curriculum development policies and practices towards education for sustainable development:

Curriculum development:

1. The technique is a new creative way of dealing with local environmental/sustainability issues where action can be taken
2. It emphasizes the relationship between human rights, social justice and a healthy environment
3. It fosters action competence through contextual, open-ended inquiry and takes an issues-based approach to learning

Learning support material:

1. It opens new possibilities for developing learning support materials that reflect action-orientated and contextual approaches to learning.
2. It allows teachers to interpret global issues critically in local contexts, in order to build critical perspectives in environmental education.

Media and communication:

The most useful newspaper articles have been those from critical, investigative journalists taking a broader focus on environment rather than only reporting on biophysical issues.

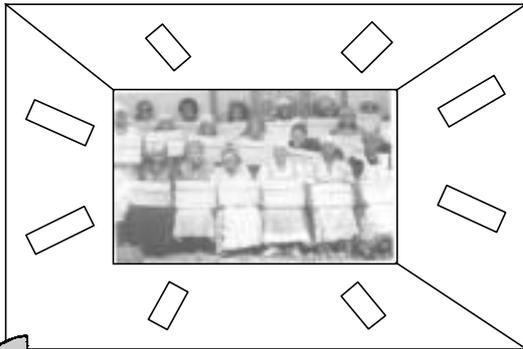
Conclusion

This curriculum design approach is emerging within a context of constantly changing education policy and practice and with environmental educators eagerly anticipating the Decade of Education for Sustainable Development (ESD). Various regional and international declarations have highlighted the need to re-orientate education, as well as the role of education in promoting sustainability.

It is hoped that this design tool will contribute positively towards this ideal.

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2. *Gabarone Declaration, EEASA conference 2002*
3. O’Donoghue, R. 2001. *Active Learning in OBE, NEEP pilot project*
4. Photographs from NEEP cluster meetings 2001-2002
5. Basket weaving photograph by Annetjie Theron, subject advisor Ladysmith



	Sharing info	Enquiry	Reporting	Action
Languages				
Mathematics				
Life Orientation				
Technology				

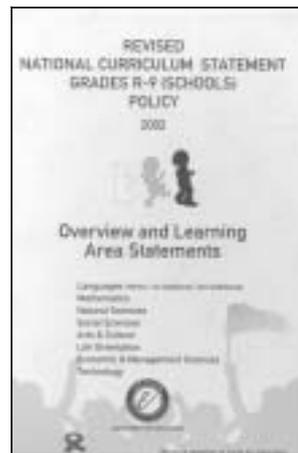
Learning Programme : *Social Sciences (Geography)*

Lesson plans : *We are weaving their way to success*

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Duration : *2 weeks*

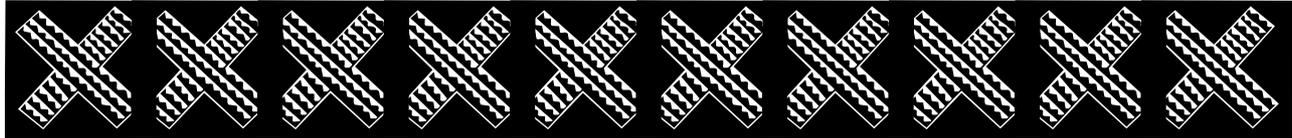
Learning outcomes	Assessment standards	Active learning activities			
		Information	Enquiry	Reporting	Action
<i>Integration</i>	<i>Integration</i>				
		Expanded opportunities: <i>Fast learners:</i> <i>Learners with learning barriers:</i>			
Looking back:		Looking forward:		Recording	



A summary of the process of developing lesson plans using newspaper articles and "picture-framing"

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Copying With Ambivalence Among the Shona People of Zimbabwe: A case of Shona proverbial expressions

Caleb Mandikonza

Proverbial expressions are an important part of language. Characteristics of components of the biophysical environment are used to describe and explain events and processes in the society. The components of this environment include animals, human beings and plants. As such proverbs portray how people have, since time immemorial, made careful observations of those natural things around them and used these observations to build and enrich their language. These observations constitute symbols of communication and making meaning within language, which is also a symbol in the meaning making process. Human experience is an immense and major contributor of learning in one's culture. This experience is discernible in the language.

O'Donnell (1997) says that people create the society they live in. Language is the most significant means of communication as it constrains and shapes people during the formation of a society. Therefore language is important for members of a society as they build meaning amongst themselves. Lindesmith and Strauss (1968) contest that norms, values and goals are a product of intercommunications between individuals in the community. They also argue that

language is not only made of symbols but is an activity of using and deriving meaning from symbols. In other words, language is a form of behaviour in itself. Therefore, words influence the way we think as well as the way we do things.

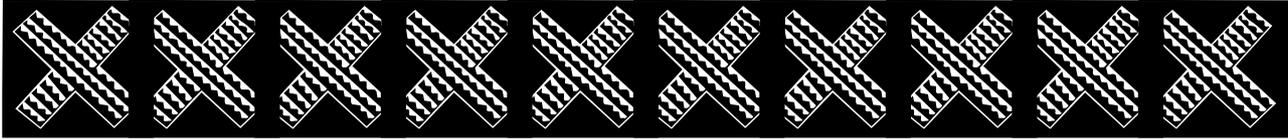
Words, which are an important component of language, give meaning by expressing what we see, think and do and as such this includes how we interact with other members of our society. Language is used to pass knowledge in our cultural settings, even without formal education (Mabitle, 2003). It follows then that the words we use in our everyday interactions determine the lenses through which we see the world around us. The term "ambivalence" denotes the existence of "opposing attitudes or feelings..." Language is one source of ambivalence.

The Shona people of Zimbabwe speak the Shona language. These people have, through the ages, respected the existence of nature and especially both its human and non-human components. In their metaphors and expressions, they are cognisant of gender and they mainly use animals and plants that are found in their immediate environment. The Shona language has sayings which

contradict and at times have opposite meanings showing that ambivalence is a part and parcel of the Shona culture. These Shona people recognise that life experiences are varied and that life experiences are contextual. Each life experience is interpreted in terms of the context of that experience. Determinants of the context also vary with time and space.

Language is used to interpret events that are happening within some time and space and it includes what people think and how they interpret an event or process. Consequently, a happening may or may not be interpreted as positive to the person experiencing it. This person or the observers may interpret the same happening differently depending on the observation "lens" they are wearing at that time and place. In so doing, the code of the person experiencing an event changes to reflect the new thinking and new response. The code of the observer also changes in response to the new code of the experiencing individual.

Similar ambivalences are located in the Shona language. The Shona people use proverbial expressions to describe and explain life experiences. Usually when one proverb means one



thing, there is another which means the opposite. The existence of opposing views in one language may have originated from different and, at times, opposing experiences that the people went through over the generations. I have raised very few of the Shona expressions and given them a literary translation into English. At the same time I have tried to explain the circumstances over which these proverbs are used whilst providing a contrasting expression with its explanation.

The examples follow;

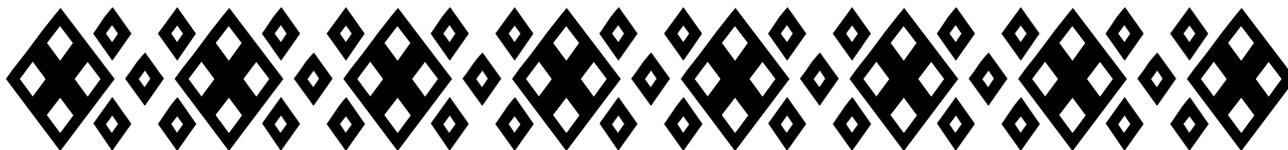
Kutsva kwendebvu varume vanodzimurana. (Men are prepared to abate the fire when one man's beard catches fire). This means in times of trouble people should be ready to help each other. The help should be given to anyone who needs it. It then follows that any person in trouble always expects help from the people around and any observers should have a moral obligation to help one of their own in response to this proverb. The proverb brings together people of different origin when one is faced with a problem. The proverb reduced the postmodernist view of and what calls "distantiation". In fact, the Shona people always created through language the need to do and feel "for the other". Such a saying is similar to the Biblical teaching of the Good Samaritan, which calls for non-selective assistance of those in need. On the other hand, some people can say, ***Nhamo yemumwe***

hairegererwi sadza. (You may not fail to eat food (maize porridge) because someone else is in trouble). This statement is similar to saying, *one man for himself and God for us all.* The statement is said when people do not want to help. It is usually used when the person inflicted is not welcome to the society or when people feel overwhelmed by the nature of the problem to be solved. Observers have nothing to do with the inflicted; hence relationships between the two parties will never be close.

The proverb serves to inform people that you do not always receive sympathy and help when you need it. There are times when you have to solve your problems on your own. It encourages individuality, which is a feature of post-modernist ethics.

Another saying is ***Chara chimwe hachitswanyi inda.*** (One finger cannot crush lice). People are encouraged to work together for the benefit of all. The proverb discourages individualism. In many communities, work such as weeding and harvesting crops or building houses was done in groups and in each family turn. Depending on the level of cooperation, members got to

know and understand each other, whilst participating and sharing responsibilities and roles. In another way the same meaning is given in, ***Rume rimwe hari kombi churu,*** (One man cannot cordon off a bush). Usually people surrounded a bush when there was an animal hiding in there. It would require many people to surround the bush in order to kill the animal. You have to cooperate with other members of your society for your own good and for the good of that society. A similar proverb says "***Zano ndega wakasiya jira mumasese***", (A loner can leave his blanket to get wet unintentionally) because he has no advice. There have to be other people to care for you and advise you all the time. In one situation cooperation is paramount, but in another, ***mbeva zhinji hadzina matsari,*** (Most mice do not prepare their sleeping places). Even though all are mice, they do not all equally contribute to their well being. This one goes along with most critics of participation. It means that we are not equal and when we are doing the same job, some are just figureheads. The saying encourages individualism as it is similar to the English proverb which says *too many cooks spoil the broth.* The statement is given when individuals prefer to work alone and are prepared to take the blame. One proverb says, "***Chirema chine mazano, chinotamba chakazendama nemadziro***", (A lame is innovative enough to dance whilst leaning to a wall).



The proverb encourages those who are alone to be innovative and resolve their problems without waiting for other people.

When things are not expected to change one can say *gunguwo nyangoshamba seyi idema chete* (The crow will ever be black despite thorough washing.)

The people have seen that all crows are black and have been black over the many generations. The expression describes people who do not change in behaviour or in the way they think. It also encourages those who want to remain conservative over what they think and what they do.

A proverb which encourages people to keep trying goes by *imwe chembere yekwaChivi yakabika mabwe ikanwa muto*. (There is a tale of an old woman from Chivi area in Zimbabwe who boiled stones until they softened and she drank the gravy). When a person is disheartened and hopeless the Shona people say this proverb. They mean that the impossible can happen and one has to keep on trying. This is also on the observation that the main rock in the Chivi area is granite. The stone is very hard and would seem impossible to boil until it gave in and produced gravy.

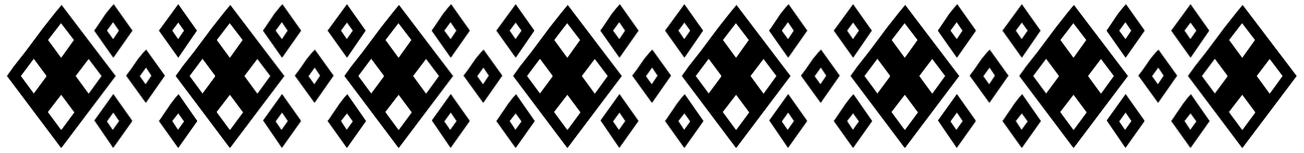
In lighter times and when men want to be naughty they say *mukadzi wemumwe ndiye munaku*. (Another man's wife is beautiful, as compared to yours). This happens after eyeing another man's wife and

trying to justify this socially indecorous behaviour. But it is known that another man's wife is taboo and must never be proposed love to, let alone thought of. As such the saying that *mukadzi wemumwe ndiambuya* (Another man's wife is always your brother-in-law's wife or your mother-in-law) is used. Culturally, this in-law and the relationship with her is revered. You are never supposed to come too close to this in-law. Getting close to her is taboo and you will pay dearly once it is discovered by the society. The proverb encourages respect for other people's wives. Those who perpetrate against it will be punished severely by the traditional society in its court. This proverb also encourages people to respect private property.

When the Shona encourage independence of their children they say *chave chigondora chave chimombe, kusatunga hurema hwacho*. (A bullock is already an adult; it must never blame anybody for its failure to gore). Adults or institutions will wean their children and will encourage them to stand on their own. The Legal Age of Majority is not a new phenomenon in the Shona culture. In this culture children grew up and reached adulthood, at which stage they were to become independent. A person does not always have to

look to those around him in order to survive. They are supposed to generate solutions to their problems, as adult individuals. Similar proverbs are *katsotsonywa kozvitsvagirawo* (Once hatched, a chick has to look for its food) and *Asamba maoko ozvitimbira* (Once you have washed your hands you must eat for yourself). On the other hand when people feel that the dependent are out-growing their care they say *kurembera kwedamba hakuzi iko kuwa*. (If the fruit of *Strychnos* sp. hangs downwards from the branch, it doesn't mean it is ripe). Here the parent or institution feels its dependence is not yet ready for an independent life. The proverb touches on those who feel that the Legal Age of Majority makes them adults and independent of parental guidance. In the first case the young is weaned and has to stand alone whilst in the later case the parent or institution feels it still has more to give to its dependents before they can be set free into the larger society.

In order to justify one's travelling and in search of personal wealth or satisfaction, a person would say *chitsva chiri murutsoka, garo harina* (You can only gain new things if you travel, not just sit). Put in another way, the proverb will be *nzvimbo imwe haina chigo*. Discovery is encouraged through learning from other people and activities away from one's usual ways of life. Today we say travelling exposes you to the wider world

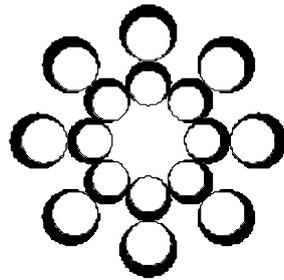


and increases your network of friends and colleagues. But when you move from one place to another you increase the chances of meeting problems. In this case the Shona will give a precautionary statement that *mapako maviri anonayisa* (You are likely to meet rain when travelling between two caves). This proverb is similar to the English saying which says that “you can’t kill two birds with one stone”. It encourages people to concentrate on one issue at a time, not to do everything at one time.

These proverbs illustrate the wealth of experience the Shona people have had in the environment. These people made observations of the happenings around them and used these as symbols to pass knowledge onto other generations. They have seen animals behave in certain ways and have used this knowledge to enhance communication amongst themselves. Animal behaviour is a symbol in the language of the Shona people. Recognising that life is full of ambiguities is a part of Shona culture. Accepting and living with ambiguities is a visible characteristic of the Shona people that is reminiscent of numerous generations of experientially developed knowledge. This knowledge has been passed down generations through language symbols.

Jickling in Lotz-Sisitka (2004), noted that the role of mother

language in shaping human behaviour is often overlooked by many environmental educators. It is requisite to consider the knowledge of the people and how they use their language to communicate that knowledge when devising programmes in environmental education. Lindsmith and Strauss (1968) say that language, like all symbols, is built from collective experience of the speakers. This consideration of prior experience in learning is one basis of Bruner’s learning theory. Vygotsky’s learning theory promotes the use of cultural tools in the heuristics of teaching and learning. These tools include language and experience. The Shona people have a rich capital for spontaneous learning in environmental education as can be deduced from their language.



According to Smyth in Jickling and Wals (2003), it is necessary to find language that cuts across “conceptual divides” in order to enable “environmental thought”, in educational heuristics. The Shona people display linguistic ambivalence reminiscent of a culture that lived closer to nature, in nature and with nature. This closeness to nature can be used as a toll to develop positive attitudes towards those aspects

of our environment that are projected by the language.

Environmental educators usually develop programmes based on what others have already done. As such the Shona people will say *kugara nhaka kuona dzevamwe* (the process of inheritance is copying from others). A starting point in life is looking at what others have done and how they have done it. A proverb says, *usafananidze nguwo nedzaTarubva*, (do not wish to be the other person). The first proverb shows the willingness of the Shona to learn from each other and yet at the same time advising people to be cautious on what to copy. We say that we cannot re-invent the wheel but have to modify what is already available for our purposes. The sayings encourage us to learn from each other and also to learn what is relevant for each one’s context as we can never be the same individually and contextually.

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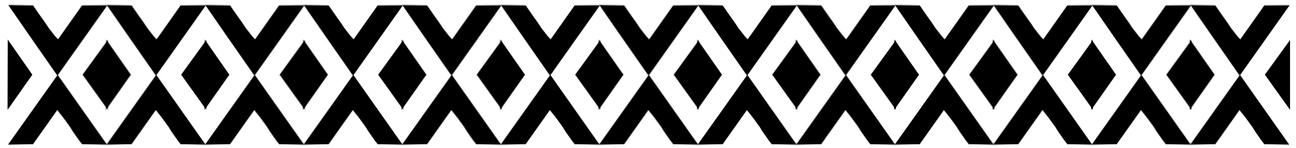
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Workshop of Information on EE processes for Nursery and Primary School Teachers

Marc-Robert Midi

The Workshop of Information on Environmental Education Processes for Nursery and Primary School Teachers was planned by the Democratic Republic of Congo National Network for Environmental Education (RNEE-RDC) and held from 28–29 October 2004.



Workshop participants

- *To share experiences with curriculum developers and practitioners with no training in EE processes;
- * To explore the potential of EE processes within and outside the country to cope with environmental and sustainability education.

The two-day long workshop which gathered participants from Teacher Training Colleges, Universities, NGOs, Governmental Institutions, the Media, and the Ministries, proved to be an excellent forum for exchanging information and sharing experience on existing environmental education processes in the formal sector of education.

This workshop is one of a number of other workshops on EE processes leading to the development of a national strategy for educational responses in our local environment.

The overall aim of the workshop was to build capacity in EE processes among nursery and

primary school teachers as well as among the other stakeholders from various backgrounds involved in the field of environmental teaching and curriculum development.

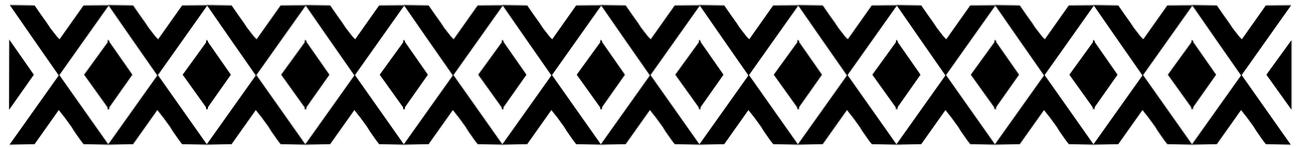
The aim of the project was :

- * To facilitate the introduction of EE processes in nursery and primary schools;
- * To promote the implementation of EE processes in the formal curriculum;
- * To facilitate the improvement of the quality of environmental teaching in nursery and primary schools;
- * To facilitate the introduction and implementation of school environmental policies and projects involving the surrounding communities;

Participants were divided into two groups, the Nursery Schoolgroup and the Primary School group. Both groups followed keynote addresses which helped to:

- a. provide a global view of the concept environment (conceptual issue) in order to make the difference between the natural environment and the built or man-made environment
- b. develop an understanding of EE processes
- c. get information on the SADC REEP
- d. present and discuss the current national EE component of the curriculum at Nursery and Primary School levels of formal education in the Democratic Republic of Congo.





Reporting, collecting of information, exchanging of knowledge, sharing of experience and of the existing curricula helped to explore and understand the issues in enriching and meaningful ways. As a result, participants had come to the conclusion that the concept environment is not treated holistically.

There is a need for reorientation of the existing curriculum in order to clarify understanding of education, environment,

development and environmental issues within context-specific, need-oriented, and practical curricula.

EE should be based upon specific training modules to enhance the capacity of curriculum developers, course designers, and users. Also considered as urgent is the training of peer educators in EE in the non-formal sector.

This workshop was the harbinger of a close partnership

between the RNEE-RDC, the Ministry of Education/Curriculum Development Office, NGOs and other stakeholders involved in formal environmental education.

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Environmental Education Association of Southern Africa 2005 Conference, Lusaka, Zambia



16 - 20 May 2005

"New perspectives in environmental education at the dawn of the UN Decade of Education for Sustainable Development"

The 2005 EEASA conference will be organised by the Zambia Network for Environmental Educators and Practitioners (ZANEPP) in collaboration with the Environmental Council of Zambia. During its 57th session, the UN General Assembly proclaimed the Decade of Education for Sustainable Development (ESD) in the follow-up to the recommendation made by the World Summit on Sustainable Development held in Johannesburg in 2002.

The UN Director-General stressed, "the 'education' in ESD is not just formal schooling but embraces a wide range of learning experiences and programmes". In the light of the above, EEASA 2005 presentations will be structured around the following sub-themes:

- | | |
|-------------------------------|----------------------|
| * Governance | * Civic Education |
| * Advocacy and lobbying | * HIV/AIDS & Poverty |
| * Innovations in EE financing | * Networking |

For further information contact:

Leah Mitaba Moonga, EEASA 2005 Conference Secretary, P. O. Box 50551, RW, Lusaka, 10101, Zambia
 wwf-zeep@zamnet.zm or jmukosa@necz.org.zm



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Micro-Science Kits: A Step Towards Sustainable Development

Charles Chikunda

What are Micro-Science Kits?

Micro-Science kits are small-scale, low-cost equipment based on the use of plastic microwell plates called compo plates. A basic student chemistry kit for example is packed into a small plastic lunch-box. The kit contains 48 test tubes and twelve beakers in the form of wells in the plastic compo plate. Micro-spatulas, propels (Beral pipettes), syringes, gas collecting tubes, specially designed well lids, pieces of silicone and glass tubing, a glass rod and a microburner. A wide range of basic chemistry experiments can be carried out with this kit. With the addition of a few more items, numerous experiments can be done in other branches of chemistry. For example; electrochemistry, organic chemistry and volumetric analysis.



Micro-Science Kit

Micro-Science Kits and Sustainable Development: Possibilities for Developing Countries

The concept of sustainable development emerged towards the end of the last century. This was a response to a growing realisation of the need to balance social-economic progress with a concern for the environment.

The 1992 Rio de Janeiro Earth Summit and the recent 2002 World Summit on Sustainable Development (WSSD) in Johannesburg adopted the paradigm that recognises the complexity and inter-relationships of issues such as poverty, wasteful consumption, environmental degradation, urban decay, population growth, conflict, equality and human rights.

The WSSD recognises education as a vehicle to achieve sustainable development. In support of the need for an educational response to achieve sustainable development, the United Nations have proposed for a decade of Education for Sustainable Development (ESD) (2005-2014). The decade aims to encourage countries around the world to develop national ESD strategies that emphasised

on broad-based notion of life-long learning and involving all sectors of society in activating society to find paths, to sustainable development (Lotz-Sisitka 2003).

The WSSD plan of implementation recognises two key aspects of education in relation to sustainable development as pointed out by Pigozzi (2003). Firstly, education is the foundation for sustainable development (SD) and much of the work on ESD must be closely linked to the pursuit of education for all. Secondly, education as a key instrument for bringing about changes in values and attitudes, skills, behaviours and lifestyles consistent with sustainable development (ibid).

It is within the context of these key aspects that this paper reviews the part that could be played by micro-science learning (MSL) in achieving SD. In other words MSL could be one of the strategies countries, especially developing ones, could adopt as a policy in their bid to re-orient curricula in ways that articulate goals of SD in line with initiatives of global bodies such as UNESCO, WSSD, IUCN and



the regional EEASA.

A thrust of the ESD is promotion and improvement of basic education. MSL assists in achieving this goal in different ways. First and foremost it is by far a cheaper option to develop concepts in science as well as psychomotor skills in learners. MSL makes use of small equipment which consumes far less chemicals as compared to conventional laboratory equipment. It is estimated that a micro-science experiment consumes chemicals in the range of 1-10% of a traditional one.

If this translated into a monetary budget, it means that communities that adopt the use of micro-science kits would remain with large sums of money that could be channelled to other sections of education such as acquiring reading and writing materials or improving the conditions of services of education workers as well as expanding basic education to underprivileged sections of societies.

All this will be a giant step towards education for all as well as an improvement of basic education as called for by the 1990 Jomtien Conference.

In science learning, it could mean schools could acquire more micro-science kits to encourage pupil-centred methods such as individual or small group practical activities instead of demonstrations or paper and

pencil activities. This, in my view, makes science learning more relevant not simply because science is a practical subject but also the quality of the product of science learning. The New Partnership for Africa's Development (NEPAD) Action Plan notes that the overall quality of education in Africa has deteriorated over the past two decades and that graduates at all levels are unemployable because of the poor quality of education they have received. This further aggravates the problem of unemployment and poverty.

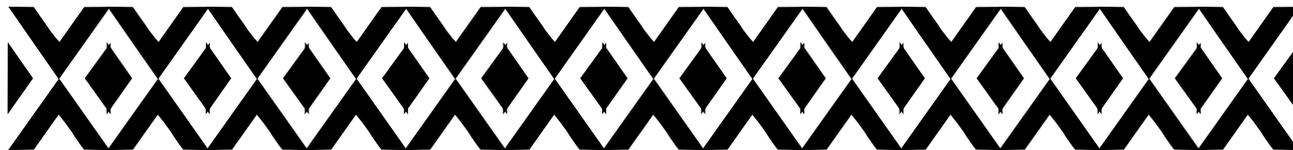
This observation is very accurate in our poor communities where science learning is limited to blackboard descriptions because laboratory equipment is inaccessible because of the cost. The cheaper micro-science kits could close the gap and equip most of the graduates with basic skills that might attract the employers.

Chemicals used in science learning are reduced by about 90% and this means there are fewer chemicals which go down the drain and gases released into the atmosphere during science experiments. This implies that MSL reduces both ground and air pollution by about 90% and the adoption of micro-science by communities would be a step towards reorienting existing education in order to live sustainably. The use of micro-science kits will hopefully inculcate in youngsters values, attitudes, skills, behavioural

patterns and lifestyles which are against wasteful consumption as they are taught only to use what is necessary. These attributes, if extended to the larger community, would reduce poverty, greediness, conflict and environmental degradation. This is in line with one of the Tbilisi principles that of emphasising environmental sensitivity to the learner's own community in early years.

Micro-science kits are made up of plastic materials and in most cases plastic is more 'user' friendly as it is not fragile. This makes micro-science kits more 'learner' friendly and learners can use them and develop required skills without fear of breaking them. This demystifies the learning of science. Traditional glass equipment alienates both the learner and the teacher. In most cases teachers keep the equipment under lock and key and they only use them in teacher-led demonstrations because of the fear of the cost of replacing them in the event of breakage.

With micro-science kits, science could be taught effectively with practical activities even where there is no conventional laboratory. This is an advantage especially for poor societies where science is normally abandoned or half done because there is no laboratory and apparatus. Again this demystifies the learning of science which is usually associated with a special room.



Micro-Science Kits: The Way Forward

The United Nations Educational, Scientific and Cultural Organisation (UNESCO) and the International Union of Pure and Applied Chemistry (IUPAC) have both known about low-cost equipment for decades (Bradley, 2004). The kits described above are being developed in South Africa and personally, I would want to applaud this as a rare example of a home-grown solution to a specific problem. During the past five years, UNESCO has been spearheading the dissemination of awareness of the benefits of small scale, low cost science equipment. This is being done in a participatory approach using two-day workshops with

stakeholders.

The purpose of these workshops is to raise an awareness of the benefits of small-scale, low-cost science equipment as well as discussing possibilities of initiating pilot projects that permits classroom based assessments of the applicability of MSL to the requirements of the curriculum of different countries. The way forward, in my view, would be for governments to adopt the use of Micro-science kits as a policy in support of ESD.

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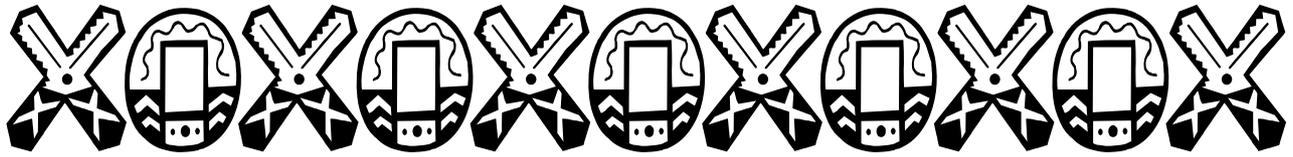
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Closing date for applications: 30 March 2005





A Development of Learning Support Materials for Environmental Education in Schools

Thabo Sibeko

Development of Learning Support Materials (LSM) for environmental education has caught learners and educators on fire, in Ekurhuleni (Daveyton).

An intensive five-day training programme took place to engage local schools on the field of developing LSM for environmental education in their schools.



Using "Puppet, Poetry, Puzzles & Invention" booklet

Environmental issues, crises and risks have been transformed in a different angle and therefore environmental activities should also be realistic and justifiable.

The essence of designing training that entails realistic resource materials to foster environmental learning has been shaped by the

way environmental degradation activities have transformed.

In our frenetic and utilitarian beliefs, environmental awareness may be antiquated or inadequate as a response to human degradation of the environment; this means that environmental activities may not have realistic and precise outcomes on that notion. Adaptation of methods and strategies to suit the current situation and times is the gentle path to take towards real environmental learning because the way people think and behave in this new millennium is totally different from the way people behaved in the 1980's.

Participants in the training identified that Environmental Education (EE) swallows Environmental Awareness (EA) because in EE there is adequate time, space for exploring, active engagement on issues, planning in action taking and reflection on activities.

The current environmental status needs realistic resource materials that will help people to think, plan and take action in responding to social, economical and environmental challenges. Action is useful only if we have thought about it and it

leads us to correct directions. However, it can also mislead us if there is noadequate and realistic thinking done on it.

Real environmental learning begins through active engagement using Learning Support Materials developed in the context of communities, to get useful feedback in shaping methods and strategies on environmental activities.

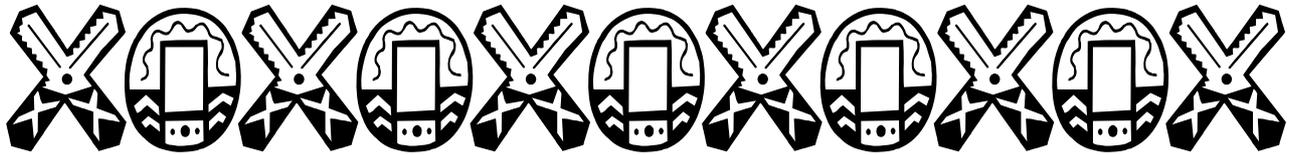


Using "Making Art out of Waste" booklet

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The Creation of a Cultural Database in Support of EE Processes in Zambia

Saasa Mufalali

For many years Sefula Basic School, like most other schools in Zambia, has been teaching a subject area called Environmental Science. In this regard, most school teachers have been familiar with Environmental Science. Recently, however, environmental education (EE) has been introduced into Zambian schools not as a separate subject but rather as a theme infused within the different subjects and activities.

A staff member from the School of Education, University of Zambia (UNZA), visited Sefula school, and after much deliberation, suggested that the School might consider establishing the following three EE activities at the school:

- a. The formation of an EE school committee, whose members would be drawn from the teachers, pupils and the community.
- b. The undertaking of an annual intra-school EE essay writing competition for pupils.
- c. The establishment of an EE centre to be a focal point for all EE activities.

The Sefula Basic School EE

Committee decided to implement all the above three activities. This report, however, focuses on the establishment of the EE Centre and the initiation of activities therein.

After funding was secured, the Sefula EE centre was constructed in February 2003. A period of uncertainty followed the construction of the centre concerning what type of EE activities needed to be instituted. Few people had concrete ideas about this, since EE as a field of study was new in the country. However, funding was then secured through the SADC Regional Environmental Education Programme (REEP) to initiate EE activities by way of undertaking a project to create an environmental education / 'cultural' database whose main features are described below.

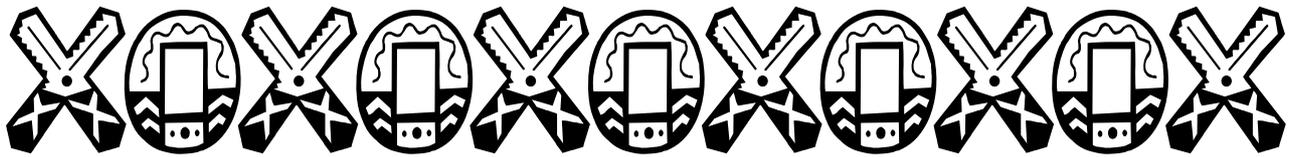
The Database Project

A major challenge for the above EE centre was to plan how it would mount EE activities for the formal, informal and non-formal educational sectors. Although different people have understood EE in various ways, in western Zambia, EE can be operationalised as a frontier

educational activity which, for many educational partners, lies between opportunity and risk. EE is a risk activity in western Zambia (Barotseland), mainly because many of the educational artifacts (e.g. carvings, artworks, tapes) documents (e.g. textbooks, letters, manuscripts, reports) and other paraphernalia (e.g. archaeological items) containing vital environmental information about Western Zambia, from the past, present and the future, are in danger of being lost to future generations.

It is acknowledged that many local inhabitants of Western Zambia have such valuable educational resources about which they have little or no idea with regard to their functions or purposes. This is especially the case after the death or aging of a family member who may have usefully kept such objects. When such family members die or change lifestyles, little thought is usually given by surviving family members as to how best to make use of such objects. This situation is a danger to the sustainability of society, in general, and in attempts to meaningfully make such "endangered" objects the foundation of contextually-





relevant EE in western Zambia through the Sefula EE Centre, in particular.

Project Aim

The database project was undertaken to collect many of the currently scattered and unused environmental objects specific to Barotseland (western Zambia) so that they become the contextual bedrock of most of the EE activities planned for the Sefula Centre.

Two different types of public media were used to advertise the request for members of the public to bring relevant items to the EE Centre. The local community radio broadcasting facility advertised the message for two weeks in both English and the local (Lozi) languages. The other advertisement was placed once in *The Post* Newspaper (which was, at that time, Zambia’s leading private media reaching all places of Zambia).

Unfortunately, very few people brought items to the EE Centre in response to the above advertisements. The reason for this situation still remains something of a mystery. The collection of the then scattered and unused environmental objects specific to Barotseland had to be achieved through another means. This involved an actual search - from place to place - conducted by the EE Centre staff, who engaged

selected members of the public in some preliminary rapport-building activities before requesting items to be donated. This method produced results; it yielded very interesting, fascinating and hitherto forgotten cultural objects which are described below.

Specific Project Objectives

Objective 1. To create a Provincial Database at Sefula EE Centre consisting of a collection of Environmental Artifacts, Documents and Paraphernalia indigenous to western Zambia.

One point that requires clarification from the outset, involves the belief entertained by many observers of the collected environmental objects, that the database project would best have suited some strictly historical, archival or heritage field of human endeavour such as a museum rather than an EE Centre. In this regard, the EE Centre welcomes such views

from the public as it represents the very beginning of educating such clientele about the nature of EE as a field of human activity. It will be pointed out, through a variety of EE activities, that all of the collected environmental objects represent a stage on which the drama of the Lozi culture takes place, that is, its natural environment. This natural environment presents to the people of western Zambia both opportunities to be maximized and limitations on what they may do. The diagram below illustrates this point.

Key to the diagram:

The EE Centre’s educational activities will equally tackle all of the three different levels, namely, the acquired item (Level 2) and its constituent cultural context (Level 1) as well as natural environments (Level 3).

Environmental Artifacts, Documents and Paraphernalia.

An array of different environmental artifacts were

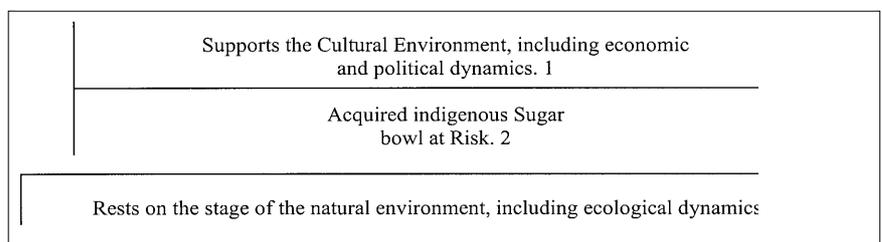


Figure 1. Illustration regarding the education dimension of the acquired Environmental Artifacts (as distinct from their purely aesthetic value, as in Museums.)



gathered from people. This category of items was the most successfully collected.

Environmental documents, on the other hand, were the least successfully collected. It was believed that there were still many more to be uncovered in the field and, as such, interested people were sent out into the field to create documents on rarely discussed but endangered environmental topics. This initiative was code –named “small-scale commissioned research projects” and thirteen such reports from various interested individuals were still expected at the time of this write up. The titles of the research projects are provided below:

1. Traditional curative medicines of western Zambia. (Miliiani ni mialafelo ya matuku)
2. Traditional Lozi plays and games
3. Cuisines and names of traditional beers
4. Traditional respect in Loziland
 - E.g. i. men/husband
 - ii. women/wife
 - iii. Children
 - iv. aged/elderly
 - v. tame animals
 - vi. wild animals
 - vii. God (Nyambe wa Ngula)
 - viii. During a discussion or argument
 - ix. During a dispute or quarrel
5. Traditional beliefs regarding God and Ancestors
 - E.g. i. ku pailela (prayer)
 - ii. ku yolisa (enthroning a king)

6. Special Days of Barotseland
7. Traditional Lozi Ceremonies, songs and dances
8. Non-curative Medicines of western Zambia (Mialafelo/ miliiani ya sizo e.g. ku ca pula, busitondo)
9. Taboos – (Mifuta ya miila)
10. Diseases found in cattle milk
11. Mission – the coming of the Missionaries
12. Informal Education for both boys and girls {e.g. initiation ceremony (girls), circumcision (boys)}
13. Wildlife of Western Zambia (Mifuta ya linyunyani, lifolofolo, litapi, ni likokwani ze fumanwa mwa bulozi).

It was hoped that environmental paraphernalia would include items which were neither documents nor artifacts, but rather discoveries (items found occurring naturally in Barotseland). Again the collection here proved to be minimal but, over time, it is hoped it will pick up.

Objective 2. To produce a Long Term EE Work plan Largely Based on the above stated objective and covering the Formal, Informal and Non-formal Educational Clients of Sefula Centre.

General Theoretical Framework for EE Centre Activities

The Sefula EE Centre has set itself the vision of combining a pioneering spirit in EE rooted in the interactions of innovation, progressiveness and tradition as reactions to risk and

opportunity. In support of this vision, it is contended that the EE activities planned for the EE Centre will need to be rooted in, and contextually supported by, a bedrock of various environmental artifacts, documents and paraphernalia focusing on western Zambia as a distinct region of Zambia. It is proposed that for countries like Zambia, which underwent colonisation of one form or the other, plan EE activities of their learning institutions – including School Environmental Policies (SEPs) that require as a matter of priority to be contextually rooted within a set of supportive frameworks of environmental objects specific to certain regional areas. The absence of such an arrangement creates EE activities which aimlessly hang in the air, or which could easily be blown off course by various forces of change. In other words, the Sefula EE Centre initially needs a bedrock formed by the collection of contextually–relevant environmental objects before it can develop meaningful and responsive EE activities for its various clients. It is this bedrock of environmental objects which will enable EE at the EE Centre to be diverse in nature as well as specific to its context of western Zambia. This is the educational essence and uniqueness of this proposed EE project to be undertaken at the EE Centre.

The Educational Approach of the EE Centre

The educational approach of the EE Centre involves the concept



of “Environmental Action Learning” as operationalised in the five steps described below. Essentially, this approach involves the educational use of the collected objects at risk, requiring that one deliberates the following questions:

1. How can the object be **described** in detail, including the process of making it?
2. (a) What is its value to various users in the **past**?
(b) What could be its **new** value for users today?
3. From the point of view of learners, what **questions** do they have about the object?
4. Based on its value to various users noted in item (2) above, what things may be **endangered** by the disappearance of the object today? Possible responses to this question are illustrated below using the example of an indigenous clay sugar bowl at risk.
5. What **action** should I take

individually or with a group in order to address the things which are endangered by the disappearance of the object today so that its value to various users is increased in the future? (refer to item 2 above)

Collaboration with **Zambian EE Practitioners**

In developing the project and collecting environmental objects for the EE Centre various Zambian EE practitioners were consulted. Key amongst these was an EE Specialist from the University of Zambia who stayed at the Centre for three days. During this period, extensive planning discussions were held with the Centre and School staff regarding the future plans of the programme. A workshop was also held for the teachers of Sefula and surrounding schools, regarding the EE opportunities embedded in the collected objects.

Planned Activities for the **EE Centre**

- a. The **official launch** of the Centre and its EE activities, tentatively planned, for January 2005.
- b. The **continuous collection on a sustained basis** of more environmental artifacts, documents and paraphernalia than those already collected.
- c. The conducting of **workshops** of various types for different clients.
- d. The conducting of field work activities
- e. The creation of **links between the centre and community**, such as through Association or Clubs already existing in communities.
- f. **Networking** with relevant institutions locally, nationally, regionally and internationally
- g. The formulation of **local special (open) days** appropriate to western Zambia and in tune with international occasions.
- h. The extensive **advertising** of centre activities.
- g. The undertaking of **research**, including small-scale commissioned research projects.
- i. The provision of **supportive teaching and learning resources**.
- j. The creation of a **mini documentation centre** for consultation purposes.
- k. The facilitation of the **publication of manuscripts**. (e.g. reports of small-scale, researches, Centre Guide of collected

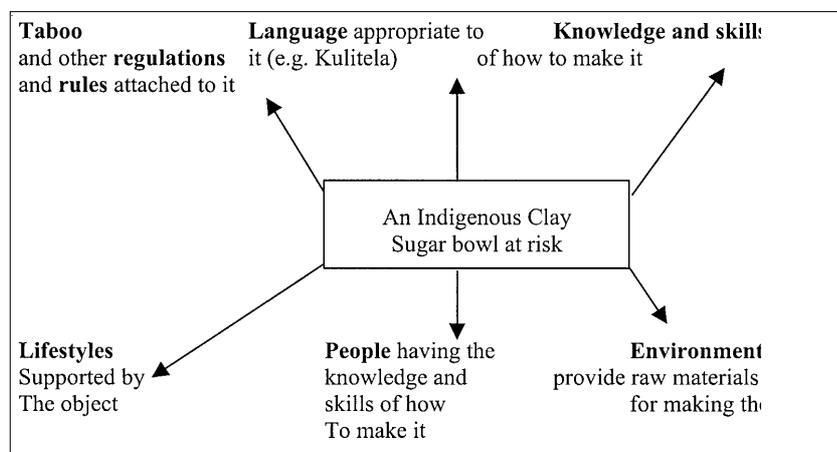


Figure 2. Illustrated example of possible responses to the past and present value of an object.



- items).
- l. The hosting of **training sessions** for various clients, for instance, in creative arts like pottery or craft making which aims at rejuvenating traditional heritage.
 - m. The **presentation of indigenous knowledge systems** in various ways, such as ancestral teachings, and
 - n. Other activities, which will be

discovered in the process of implementing the above.

Conclusion

Undoubtedly, the seed money provided by the SADC REEP has supported the initiation of a process of environmental education at the EE Centre whose trajectory and ethos promises to be unique not only to Zambia but to the entire world of EE as a whole.

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Global Higher Education for Sustainability Partnership Resource Project Consultation Meeting, Grahamstown, South Africa 10-11 March 2005

Rhodes University and the SADC Regional Environmental Education Programme, together with the Association of University Leaders for a Sustainable Future (ULSF) and Florida Gulf Coast University, will be hosting the southern and eastern Africa Resource Project Consultation.

The objectives of this Consultation are to explore the purposes, present content and dynamic evolution of the online **Global Higher Education for Sustainability Resource Project** that is being developed to assist personnel of higher educational institutions in integrating sustainability into their teaching, research, community outreach, and campus operations. (For information about the Global Higher Education for Sustainability Resource Project, please visit the website: www.ulsf.org/toolkit)

The Resource Project is being developed in the context of the United Nations Decade of Education for Sustainable Development (2005-2014).

For registration forms and/or further information about the Consultation, please contact:

Nikki Köhly, Course Development Assistant: SADC REES Course Development Network
Environmental Education & Sustainability Unit,
Rhodes University, P.O. Box 94, Grahamstown, 6140, South Africa.
Tel: +27-46- 603 8389; Fax: +27-46- 622 3432; Email: cdn@ru.ac.za or n.kohly@ru.ac.za

Closing date for registration: 10 February 2005





Meaningful Learning and Social Change: The Case of the Eshowe Cholera Crisis in South Africa

Jim Taylor

Abstract

In South Africa environmental issues and risks are often 'in your face' as people struggle with issues related to poverty, health, food and nutrition, unemployment and widespread environmental degradation. Much is done to respond to such problems but the overwhelming nature of the challenges can be daunting. In this article a case study of the Eshowe cholera crisis is shared and the underlying principles of the educational responses are explored. The article concludes that unless sound principles are applied, which involve the learners in active processes and lead to meaningful education and change, the issues and risks that humanity faces will simply get worse!

The Cholera Crisis in Eshowe

On 12 May 2001 the Johannesburg based *Sunday Times* reported that 94 799 cases of cholera had been contracted in the Eshowe region of South Africa in less than one year. Although cholera¹ is normally a fatal disease the rapid response by military helicopters and emergency re-hydration centres meant that only 197 people actually died from the cholera outbreak. The medical rescue operation was hailed by the World Health Organisation (WHO) as one of the best emergency operations ever undertaken yet people continued to contract the disease and the numbers of critically ill people

continued to grow. A comprehensive public awareness campaign using all available media including radio, print, television and extension staff also failed to stem the tide and the disease continued to spread. How is it that in a country as developed as South Africa nearly 100 000 people are able to contract a disease which can easily be avoided if basic hygiene practices are followed? Furthermore, why did the awareness campaign fail to have the desired outcome and curb the spread of the disease?

A developing country and a killer disease

As a developing country South Africa shows much promise. It's widespread network of good roads, airports, electricity supply and other modern commodities make it one of the more 'advanced' countries in Africa.

The recent shift to democratic processes and relative political stability also bode well for the future.

There was grave concern, therefore, when cholera 'broke-out' in Eshowe, a small town just north of Durban. Eshowe has a large rural population and although unemployment is high poverty is not as extreme as it is in other parts of Africa. Unless people who contract cholera are treated quickly they usually die, and death comes rapidly, not from the cause of the bacterial infection, but from the dehydration that is associated with it. Once the disease began to spread the response of the state, including the Ministries of Health, Water Affairs, and even the South African National Defence Force was rapid and effective but it usually relied on treating the symptoms rather than



addressing the causes.

Awareness raising:

prevention is better than cure

Awareness measures were also initiated and over a year long period thousands of posters were printed and disseminated, many radio broadcasts were made and a number of meetings were held in the focal areas of the disease where community workshops were held to explain the nature of the disease and the inherent risks. Unfortunately, the disease continued to spread and it became necessary to challenge the underlying assumptions that the awareness raising processes were making. Clearly the conveying of clear messages to people was not enough to bring about meaningful social change. Through the awareness campaign people were informed that the disease came from the river and one could avoid becoming ill if one drank safe water or treated the river water with a strong bleach (chlorine).

Although some people began to adopt this advice, the disease continued. The social context of living in poverty and patterns of rural life where drinking from streams and rivers are age-old habits did not shift easily. The source of the disease was also difficult to comprehend since the microscopic bacteria were invisible to the naked eye. Further research established that a contaminated person could be a 'carrier' of the disease for up to 30 days before the symptoms, chronic diarrhoea, developed. During this period personal hygiene is all important and in their efforts to save precious clean water, toilet and sanitary practices may well have been lacking. Food preparation therefore became a risky process and the disease soon spread to other family members.

Although people were intellectually aware of the cholera threat, they continued to engage in hygiene and water collection practices that put their lives at risk.

It became clear that although the people were learning theoretical concepts through the awareness processes, meaningful understanding and social change appeared to be lacking. An educational process was therefore needed that did more than simply make people aware.

Sharing the tools of science...



A learner experiments with the testing of water samples

A simple scientific tool was developed which enabled people to test for possible contamination (coliform bacteria) on their fingers. Participants were invited to rinse their fingers in a saucer of distilled water and a small sample of this water was added to bacteria growth medium, or bacteria food, so that the bacteria could be incubated, multiply and become visible to the naked eye. These samples were placed in small test tubes and these were placed in peoples' pockets so that their body warmth and the bacteria growth medium would





encourage the growth of the bacteria.

By the next day the bacteria test had proved conclusive and participants were amazed to find that if their sample was contaminated the clear water turned a putrid, urine-yellow colour - clearly our fingers were more contaminated than we had previously thought! The learning that these small tests supported is remarkable. Rather than simply listening to awareness messages we were now actively engaged in a scientific experiment that overturned previously held ideas about how clean our hands were. As an active process the learning was enhanced by 'learning through doing' rather than relying on learning through listening alone!

Responsibility: the ability to respond

In Eshowe the awareness campaign provided an important learning opportunity for people and certainly conveyed much important information about water borne diseases and personal hygiene which is at the root of such illnesses. In seeking to convey messages to others, however, the campaign failed to respond to the knowledge and understanding that already existed in the local communities. People have lived with the threat of diseases such as cholera for many centuries and often local customs have developed that help prevent people falling

victim of such risks. Indigenous knowledge practices such as the ceremonial washing of hands before shaking hands or embracing visitors may well have inhibited the spread of diseases through the ages. Similarly the collection of water where one can 'hear the water' as it bubbles through a small rapid helps ensure that the water one drinks is healthy and oxygenated and not stagnant and possibly full of harmful bacteria. The ability to respond to the local situation and understandings or even the misconceptions people have is important if meaningful learning is to occur.

Unfortunately indigenous knowledge is often romanticised and portrayed as a panacea to cure all ills. There are certainly times where indigenous ideas needed to be challenged, especially where the disease was ascribed to folklore or witch-craft (ubuthakathi) and people failed to understand the scientific explanations which in this case simply related to bacteria spreading the disease.

Knowledge springs from discontinuity...

This statement teaches us much about meaningful learning and change. People don't necessarily learn a great deal when they receive messages through an awareness campaign. If we are to learn in a meaningful way we have to be part of the

process of actively *seeking* the answers. Furthermore, meaningful learning may only come about when our existing understanding is challenged or 'troubled' through our experience.

In Eshowe both the authorities and recipients of the cholera campaign often assumed that if people stopped drinking contaminated water from the rivers and streams they would be safe from infection. Closer investigation revealed a different picture, however. Once a person contracts cholera he or she may be a carrier of the disease for up to 30 days. During this time if personal hygiene is not carefully observed and hands are not washed effectively after using the toilet, other members of the family may contract the disease from the infected persons hands. This knowledge, which only became evident through engaged experimentation and dialogue with significant others, overturned previous misconceptions and enabled a far more meaningful engagement with the issues and risks.

The principle of working with the best expertise and scientific knowledge available as well as with specialists in the field of science, sanitation and education were a further principle that was followed during the cholera crisis. The complimentary knowledge that different specialists were able to bring



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became effective through the enquiry processes that the simple sanitation testing activities supported.

Working with a team of co-workers, Rob O'Donoghue from Rhodes University developed a pack "*Learning Support Materials for Rural Health and Sanitation*" for educational purposes. This pack is available through Share-Net at a cost of ZAR35.00 (purchased in South Africa) and ZAR65.00 (purchased from southern African countries-costs vary due to postage) and it provides many useful activities that teachers and learners can do to engage with the issues and risks that many people face in local community contexts.

Concluding comments

In many 'development' contexts, as was the case in Eshowe, learning is perceived to be a simple process of conveying knowledge to others. By taking a broader view, however, and being conscious of a sense of humanity where peoples feelings, anxieties, strengths, weaknesses, local knowledge and inherent human potential supported a different process of social change. It was important that all participants in the enquiry processes recognised each other as fellow human beings each with something to learn and share rather than the experts perceiving the people of Eshowe as rural folk who



Learners' use the "Learning Support Materials for Rural Health and Sanitation" pack during a lesson.

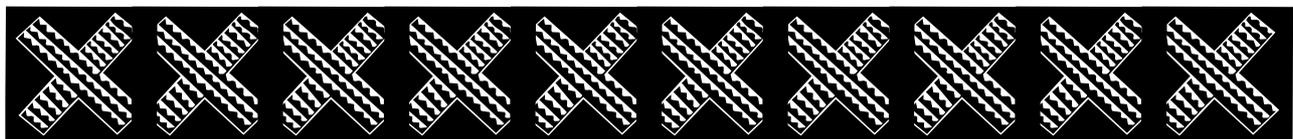
needed to become the recipients of informed messages. As a sense of humanity developed participants learnt to 'put others first' and work with understanding when dealing with problems and health risk issues.

A final message from the Eshowe cholera crisis was the importance of living with optimism and enthusiasm. In many situations the hopelessness of dealing with a disease on such a massive scale lead to despair and people became overwhelmed with the enormity of the challenge. Thankfully the response of the authorities, their readiness to question and to attempt innovative approaches enabled a more meaningful solution to difficult circumstances. Today Eshowe is thankfully free from cholera and no cases have been

reported for many months. The learning we all shared through the crisis may have done a great deal in helping build a new South Africa where the knowledge of others is respected and all people have a contribution to make despite their upbringing and rural circumstances.

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Learning Through Doing Workshop: An overview of the workshop with a critical perspective

Clayton Zazu

Tired of talk shows that most environmental education learning processes, workshops, seminars and conferences have become, and influenced by experiences from his visit to Sweden, Professor Rob O’Donoghue, of Rhodes University decided to change the status quo, and challenge the talk show approach. How he attempted to do that is what popularly became known in southern Africa (especially in South Africa EE circles) as the “Learning Through Doing” approach.

Interestingly I must also mention that the Professor, or at least I am reliably informed that the Professor had at one point of time called his idea or approach to EE “Learning By Doing” instead of “Learning Through Doing” . This to me is not amusing because I have known the Professor to be a man who plays around with small words to make big changes. So in order to demonstrate his approach to EE, where learners learn through doing, a three-day workshop was conducted at Umgeni Valley, South Africa, in October 2004.

The 'Learning Through Doing' workshop was attended by a

wide range of EE practitioners from as far away as Norway. The workshop also coincided with the Rhodes University/ SADC International Certificate in EE. All the participants of the Rhodes/ SADC EE course attended the workshop, and this then gave the three-day 'Learning Through Doing' workshop, strength and a regional and international status in which so many people with diverse EE backgrounds and experiences meet and learnt through doing. However, some of the critical questions that need to be probed further are: “Did the workshop participants learn anything through doing? What did they learn? and, How can learning through doing be

promoted in EE processes?

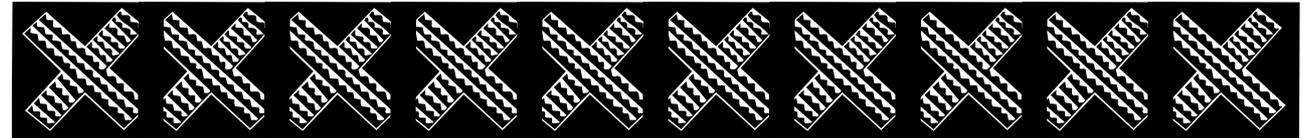
What was done and learnt during the workshop?

Participants attending the three-day learning through doing workshop were engaged in a number of activities or let call them “doings” The participants were grouped each day according to their areas of interest, and in each group there were set tasks to do. For instance one of the groups constructed a urine diversion toilet, which attracted a lot of attention throughout the whole workshop period, the other groups built a grain pit, demonstrated the construction of a Nguni hut, discussed the Eziko concept, weaved mats using



Participants gather under a tree to discuss 'grasslands' as the theme of their session





grass, conducted bacteria tests and put together a system of washing hands after visiting the toilet. Surely every other person who attended the learning through doing workshop can bear me testimony that people did a lot of these doings or activities. At the end of each day groups were made to give reports of what they did, how they did that, what they learnt and their recommendations for the UN Decade for Education for Sustainable Development.

The reports were made although one thing that came out clearly was that most of the participants found it difficult to outline what they had learnt, instead most of the feedback reports emphasized what were done. Could this mean that people did not learn anything? I am not very sure but I strongly think that it means something, something critical to the whole idea of learning through doing.

I am tempted to think that people who participated in this workshop failed to balance between “doing” in order to learn with “talking” in order to shape and share new ideas. Learning therefore requires that learners discuss, through talking, what they are doing so that they can make sense of the things they are doing, thereby learning new skills and developing new ideas, and ways of doing things. It must be borne in mind that talking is

an important aspect of the learning process, and learning through doing is much successful if supported by dialogue, discussion and debate. Through talking, learners can explore ideas and theories that support doing. Learning through doing does not imply digging a grain pit without talking in order to share the processes involved in the digging and the functioning of the pit. Learning can best be enhanced through doing and talking, this is my opinion and opinions are open to debate.



Preparation of a grain storage pit

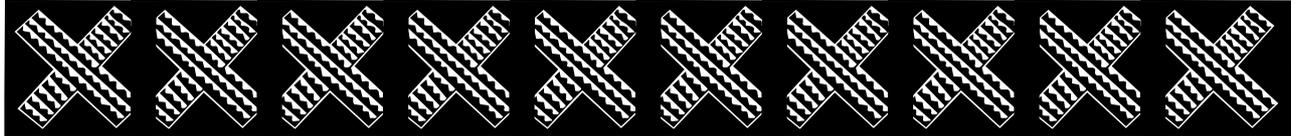
Learning through doing in EE
I must admit that the Learning Through Doing workshop was a noble idea, and it opened a lot of space for discussion among EE practitioners, on matters affecting EE processes. One thing that the workshop managed to do, was to demonstrate that learning processes can be

planned to take place through hands-on and activity-based approaches. There was very little talking, group discussions, debates and dialogue throughout the workshop, but people worked in their small groups, and managed to do what was asked of them. Most groups successfully completed their tasks. The group that was making paper from waste managed to make the paper, those constructing the toilet finished the toilet and the toilet was used, the group doing water test completed the tests and results were shown to every one. Field trips which were planned were all done according to the schedule.

But all the same my question is “what role did talking play in the whole process? To what extent did talking during the different group tasks influence the learning processes? Did the workshop participants learn through doing or through talking or did they learn through both doing and talking?”

In order to explore these questions further, it might be worthwhile for me to refer you to Professor Rob O’Donoghue’s “*Active Learning Framework*” which according to my own interpretation, acknowledges the importance of both talking and doing in the learning processes.





Allow me to conclude this article by saying that the title of the three-day workshop “Learning Through Doing” might have caused many of the participants and even you the person reading this article, to think that what the brains behind the workshop wanted to prove is that learning ONLY takes place through doing . However, what I discovered as one of the workshop participants was that the idea of emphasizing the “doing” in learning processes is key and helps to increase learners active and hands on participation, therefore making learning easier compared to using word of mouth only, to make learners learn. In education

especially at lower ages giving learners the opportunity to touch, and manipulate concrete objects (which is the doing) is critical. However as they develop the ability to speak, to talk, to debate and discuss issues there is need for them to have both opportunities to engage in both the doing and the talking. Too much talking at the expense of doing is no good way to make learners learn, neither is too much doing at the expense of talking a good way of making learning take place.

Thanks to Professor Rob for thinking of putting together this exciting and thought provoking workshop. It challenged my

mind and it opened a lot of space for me to explore further, and I think the workshop will remain vivid in the minds of most of the people who attended. Already some of the concepts and activities done during the workshop are going to be taken to the 2005 EEASA conference in Zambia (The Eziko-Indigenous Knowledge processes). Isn't that great!!!

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2005 Children's World Summit for the Environment 26-29 July 2005

The United Nations Environment Programme (UNEP) and the Japanese Government are hosting the 2005 Children's World Summit for the Environment in Aichi City, Japan.

The Summit will bring together children from all over the world to discuss important environmental issues and air their own concerns on the state of the environment at both local and global

levels. Please look now at your experienced children in environmental issues at their communities or school projects. The Goals of the Summit are:

- to increase childrens understanding of environmental issues through the sharing of experiences and opinions;
- to improve the global environment by sharing best practices and encouraging new initiatives;
- to give the children of the world a chance to forge lifelong friendships;
- to provide opportunities for children to collectively voice their concerns for the environment, and;
- to inspire children to think globally and act locally.

Contact: The Children and Youth Unit, Division of Communications and Public Information, United Nations Environment Programme, P.O Box 30552, Nairobi, Kenya. Tel: 254 -20-623937; Fax: 254 -20-623927/4350 Email: childrens.summit@unep.org Website: <http://www.children-summit.jp>





INDIGENOUS WAYS OF KNOWING



During the Learning Through Doing workshop, held at Umgeni Valley, in Howick South Africa from 26-28 October 2004, participants shared knowledge of the ways they do things. Part of this sharing involved the making of bread - the indigenous way.

Bread making from an indigenous perspective (for about 40 people)

Ingredients

2.5kg of whole wheat flour
1 kg of white bread flour
1 packet of yeast
1 tablespoon of salt
2 cups of warm water
2 cups of brown sugar

The process of kneading

After mixing all the dry ingredients in a bowl, add the warm water and begin kneading. Continue kneading until the dough does not stick to your hands.

Baking or steaming

Place the kneaded dough into two baking pans/trays (about 10cm by 20cm). Put the pan in a warm room and leave to rise for 2 hours (you will know it is ready when the pan is almost 'full of dough').

Bake for 1-2 hours for 180 degrees C (temperatures vary so you need to check regularly. It will be ready when it is golden brown in colour. You could also pierce it with a knife to ensure the dough is cooked).

Steam bread/dumplings (*ujeqe*)

Place dough in round mid-size steel bowl. Let it stand for 2 hours until the dough has risen to the top of the bowl.

Boil a quarter of a pot size of water. Place the bowl with risen dough in the water (make sure the water does not boil over into the bread – ie it must not be too full). The lid of the pot must be airtight.

Steam the dough for 1 & 1/2 hours. Check with a knife to see if the bread is cooked.

Keep checking there is always water.

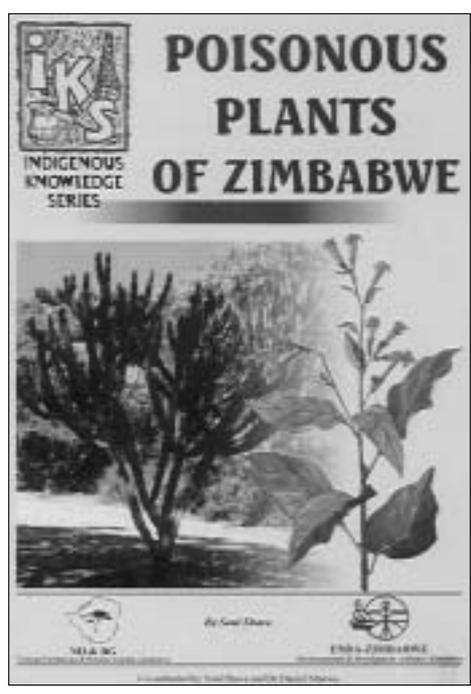


RESOURCES

Poisonous Plants of Zimbabwe Indigenous Knowledge Series

This booklet is the third in the series 'Know Your Indigenous Plants' for Zimbabwe, developed by Soul Shava in collaboration with the National Herbarium and Botanic Garden and Environment and Development Activities-Zimbabwe.

"The publication is on poisonous plants occurring around homes, in fields and in the wild. Both indigenous and exotic poisonous plants occurring in Zimbabwe are covered. More than 80 poisonous plant species are mentioned here, making it a comprehensive study. Included in this publication are plants



which have an external effect (usually on the skin) on humans and their livestock.

The aim of this publication is to raise awareness and recognition of poisonous plants around us, so as to reduce the risk of poisoning by them. Focus is placed on both human and livestock poisoning."

For more information about the series, contact: *Soul Shava National Herbarium and Botanic Garden, PO Box A889 Avondale, Harare, Zimbabwe*
Tel: +263-4-744 170
Fax: +263-4-708 938
srg@mwweb.co.zw

Education Women and Adolescent Development 13th-19th March 2005

Forum for African Women Educationalist (FAWEN) will be holding an International Regional Workshop Conference on Education Women and Adolescent Development in Awka, Anambra state, Nigeria. Issues to be discussed are related to environmental education, challenges for Education of the disadvantaged group women and children.

For more information
Contact: Dr (Mrs) M.A Anagbogu, LOC chairman.
E-mail: fawenaanambra@yahoo.com





EE EVENTS

ATTACHMENT PROGRAMME 2005

22-31 March, 12-21 July, 27 Sep-06 Oct
KwaZulu-Natal, South Africa

This programme consists of an environmental educators course with opportunities to work with a number of fieldwork techniques and the theory behind their use as well as a wide variety of education learning support materials. It also focuses on the development and adaptation of learning support materials, curricula and projects.

Contact: Shepherd Urenje

Tel: +27 33 330 3931;

Fax: +27 33 330 4576

E-mail: shepherd@futerenet.co.za

EDUCATION FOR ENVIRONMENT AND SUSTAINABILITY - ADVANCED INTERNATIONAL TRAINING PROGRAMME

04-22 April 2005 - Sweden

June/July 2005 - South Africa (African participants) and India (Asian participants)

The main objective of the programme is to provide an opportunity to exchange knowledge and experiences in environmental education and education for sustainable development and how to support those processes within the formal education.

Contact: Ramboll Natura AB, Sweden

Tel: +46-8-615 6000

Email: natura@ramboll.se

Website: www.rambollnatura.se

2005 EEASA CONFERENCE

16-20 May 2005, Lusaka, Zambia

Annual Conference of the Environmental Education Association of Southern Africa

Theme: New Perspectives in Environmental

Education at the Dawn of the UN Decade of Education for Sustainable Development.

Contact: Leah Mitaba Moonga, Conference Secretary

Tel: +260 1 253 749; Fax: +260 1 250 404

*E-mail: wwaf-zeep@zamnet.zm or
jmukosa@necz.org.zm*

2005 CHILDREN'S WORLD SUMMIT FOR THE ENVIRONMENT

26-29 July 2005, Aichi City, Japan

The United Nations Environment Programme (UNEP) and the Japanese Government are hosting the 2005 Children's World Summit for the Environment.

Contact: The Children and Youth Unit, UNEP, P.O Box 30552, Nairobi, Kenya.

Tel: 254-20-623937;

Fax: 254-20-623927/4350

Email: childrens.summit@unep.org

Website: http://www.children-summit.jp

RHODES UNIVERSITY / SADC INTERNATIONAL CERTIFICATE IN EE

12 September - 04 November 2005

Rhodes University & SADC Regional EE Centre

The course is for professional development in environmental education. It provides a structured framework and resources around which participants can enhance their skills to support, initiate and improve environmental education in their own contexts.

Closing date for applications: 30 March 2005

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GUIDELINES FOR CONTRIBUTORS

- ✿ Any contributions relating to environmental education are welcome. These may include articles, reports from EE projects, working groups or local networks, activity ideas, resource reviews, letters, requests, comments, drawings, photographs or creative writing.
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