Environmental Education in Action in Secondary Teacher Training in Zimbabwe

Iris Chimbodza
Jan van Ongevalle
St^{2}eep project, Zimbabwe

Manasa Madondo
University of Zimbabwe, Zimbabwe

Abstract

This paper describes a story-in-action of the Secondary Teacher Training Environmental Education Programme (St^{2}eep) in Zimbabwe. The programme seeks to integrate environmental education into the secondary teacher training curriculum. This paper critically reviews the meaning of stakeholder involvement and participatory action research which are believed by the authors to guide the programme. This is done through narrating some important processes within St^{2}eep. These include the project formulation, college-based sensitisation workshops, establishment of environmental education parameters, development of environmental education resource materials and an orientation programme for college lecturers. The paper shows that the involvement of stakeholders and participatory action research has enhanced critical reflection within St^{2}eep. The authors also argue that participation diffuses in a multitude of ways throughout our journey of engagement with our work, lifestyle and environment.

Introduction

Zimbabwe developed its environmental education policy through a multi–stakeholder consultative approach in 2000 and 2001. Background research during this process by representatives of the formal education sector revealed that this sector was very subject–discipline oriented. In secondary and tertiary education, most environmental education is undertaken in the context of carrier subjects such as the natural sciences where there is a focus on the biophysical aspect of the environment (Shava, 2003).

Teacher educators were very supportive of the policy development process because they believed it could strengthen environmental education initiatives that were already in process (Heberden *et al.*, 2001). They were, however, concerned that the policy document would remain a paper policy. As highlighted in the Gaborone Declaration (EEASA, 2002: 11–12): 'Paper Policies alone may be of little value. Without action plans that are actually put into effect, paper policies can be meaningless.'

Recognising that adoption and implementation of the formulated environmental education policy is a lengthy process, it was agreed that action had to start on the ground to establish environmental education initiatives, even before the policy was officially launched by the Ministry of Environment and Tourism. This marked the beginning of St^{2}eep. St^{2}eep was

formulated through strong involvement and consultation of stakeholders under the guidance of the then proposed environmental education policy. St^{2}eep focusses on the integration of environmental education into the secondary teacher training curriculum. Programme activities started immediately after the programme planning phase. St^{2}eep activities are characterised by involvement of stakeholders and participatory action research cycles. This paper documents activities and processes spanning the first two years of the programme. It also seeks to open up a critical discussion on the meaning and role of stakeholder involvement and participatory action research within the St^{2}eep programme.

Participatory Planning of the St^{2}eep Programme

The draft of the national environmental education policy document was worked out in 2001. Soon after, a planning workshop on the integration of environmental education into the Secondary Teacher Training Curriculum was organised (MoHTE & VVOB workshop report, 2001). Participants included representatives from the Ministry of Higher Education, the Ministry of Education, Sport and Culture, the Ministry of Environment and Tourism, teacher training colleges, schools, NGOs, universities, a Belgian donor organisation (VVOB) and other stakeholders, notably some International Union for the Conservation of Nature (IUCN) Commission of Education and Communication representatives. This marked the beginning of a process aimed at practical implementation of national environmental education policy recommendations for secondary teacher training in Zimbabwe.

The planning workshop benefited from multi-stakeholder participation during the preparation and implementation of the workshop. This approach enabled broad consultation in the development of the programme, based on existing environmental education processes, needs, opportunities and experiences. Focus group discussions and brainstorming sessions were the main instruments used during the workshop. Focus groups identified strategies, objectives, expected outcomes and specified activities to realise objectives. Indicators, means of verification, timeframe, responsible organisations and the budget were also suggested. Table 1 shows a summary of the results of the focus group discussions.
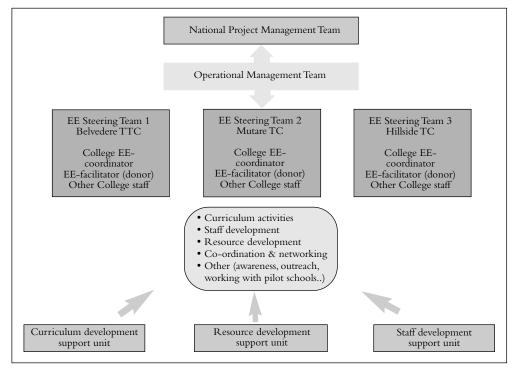
During plenary brainstorming, participants agreed that environmental education should be included in all main subjects to fulfil the cross-curricular approach. Figure 1 shows the organogram of the St^{2}eep project structure as it was developed during the brainstorming activity. It was later approved by the Ministry of Higher and Tertiary Education with minor adjustments. To date, the supporting structures have been successfully established in the three participating colleges and at national level.

Table 1. Summary of focus group discussions on project strategies

Strategies	Objectives	Outcomes and Activities
1. Curriculum development	• To develop a curriculum which incorporates and integrates environmental education at secondary teachers' colleges.	• Workshops to develop parameters of environmental education for secondary teacher colleges. • Environmental education curriculum audit carried out for secondary teacher colleges. • Syllabi revised at secondary teacher colleges to incorporate and integrate environmental education. • Revised syllabi produced for use at secondary teacher colleges. • Integration of environmental education reflected in student teacher schemes, plans and teaching during teaching practice. • Consultations with Ministry of Education.
2. Staff development	• To equip educators and students with appropriate knowledge and skills for effective environmental education and positively change their attitudes towards environmental issues.	• Environmental education orientation workshops for lecturers. • Follow-up activities to monitor implementation of workshop results (observations, visits, etc.) • Support student environmental education initiatives, e.g. field trips, Environment Club activities, etc.
3. Resource development	• To evaluate the suitability of existing material in view of the environmental education curriculum and to develop new material to supplement existing material.	• Workshops to valuate and identify existing material suitable for the environmental education curriculum. • Writers workshops to produce new environmental education materials and to build capacity in resource development.
4. Cooordi-nation among environ-mental education stakeholders	• To coordinate, network and promote critical awareness between and among all stakeholders at local, national, regional and global levels.	• Functioning networking, coordination and collaboration among stake holders. • Establishment of inventory of stakeholders • Establishment of resource centres and training of lecturers and students on use internet and email services. • Exchange visits and community environmental education projects.

Strategies	Objectives	Outcomes and Activities
5. Evaluation/ assessment	• Evaluation of skills, knowledge and attitudes in view of environmental education within teacher education programmes and to link with primary and secondary education.	• Evaluation of environmental education within teacher education programmes is on skills, knowledge and attitudes. • Assessment criteria for environmental education are set through consultation and collaboration between higher education, Zimsec (exam branch), teacher colleges, and other stakeholders.

Figure 1. Organogram of the St^{2}eep programme structure

On the issue of sustainability it was suggested that the project would be conducted over a four-year period, starting in January 2003 to 2006. During this period, donor funding would facilitate capacity building in environmental education through training workshops, the provision of information technology equipment and the integration of environmental education in the secondary teacher training curriculum. Participants agreed that colleges could sustain the programme, provided they had the initial supporting equipment, programme structures and enhanced capacity. Being part of the programme planning task team we assumed that the participatory approach used during the workshop enabled stakeholders to design their

own programme that would facilitate the integration of environmental education in secondary teacher training. As a result, we believed that the programme responds to priorities and needs of its implementers and therefore enhances ownership of the programme. However, O'Donoghue (1999: 21) warns us of 'participatory imperatives as techniques applied in sequential facilitative faith within a sustainable development economy that is seemingly stacked in the favour of a new cohort of development professionals'. With this in mind, there is need for some critical reflection on the structure of the St^{2}eep programme.

There is one national project coordinator who is a college lecturer with a full teaching load. All the work that is done for St^{2}eep is therefore additional to a full workload without any extra financial remuneration. The same applies for the three steering team coordinators, based in the three teacher training colleges. Three Belgian facilitators, employed by the donor organisation VVOB, are working full-time in the St^{2}eep programme. Currently, the national coordinator and environmental education steering team coordinators would struggle to cope without the support from the VVOB facilitators. The extensive operational role that VVOB staff is currently playing in the St^{2}eep programme is not sustainable in the long run and raises questions about the meaning of participation at this operational level. Critical reflection on the operational structure has led to a process of extensive debate within St^{2}eep on the issue of sustainability and the role of the donor.

Stakeholder participation in implementation of St^{2}eep activities

The consultative workshop approach in many St^{2}eep activities takes cognisance of the fact that several authors underscore the need to take on board the implementers of curriculum change from conceptualisation to implementation (Stenhouse, 1981; Carl, 1997; Bishop, 1986). The pre-requisite for a democratic framework in environmental education curriculum processes has been sounded in many environmental education international conferences (for example, UNCED, 1992; EEASA Gaborone Declaration, 2002). Information on existing and potential environmental education activities is meant to provide context-rich environmental education knowledge and practices essential in guiding environmental education integration (Mokuku, 2001; Lotz-Sisitka, 2002). Put differently the understandings, competencies and values articulated in the different subject areas can be effectively harnessed to resolve environmental risks (UNESCO/DEAT, 2000). The recommendations from curriculum theory and an environmental education imperative to enable contextualised praxis and participatory action research in informing practice thus justified the consultative workshop strategy.

Sensitisation workshops

A sensitisation and consultative workshop was organised in February 2003 to introduce the St^{2}eep project to Belvedere Technical Teachers' College (BTTC) staff members, determine what was already happening within the college in terms of environmental education and identify potential subject areas for environmental education integration. A focus group discussion strategy was used to gather information on current implementation of environmental education in the subject areas and opportunities for integration into the different subjects. From the focus group discussions it was observed that technical subjects see environmental health and safety as

relevant environmental education issues, while the same subjects, together with Business Studies, Geography and Natural Sciences, indicated that they already cover, in one way or another, issues related to waste management, conservation and recycling.

The use of the environment as a teaching/learning resource was highlighted in Agriculture, Clothing and Textiles, English, Geography and Environmental Science, Professional Studies and Science and Mathematics. Agriculture made explicit reference to the importance of indigenous knowledge systems and health education. Agriculture, Natural Sciences, Geography and Environmental Science and Hotel and Catering educators indicated that there was potential for including numerous environmental issues in their subject areas. A biophysical understanding of environmental issues was evident in most subject areas while suggested opportunities for integration stressed the need to deepen and extend the environmental issues that are already covered. Through participant group interaction, the workshop provided some insights into what is being done in different subject areas and their potential in view of environmental education integration.

Similar sensitisation workshops were held in the other two colleges during the course of 2003. Subsequently the workshop findings helped to inform the setting of parameters for environmental education integration which were developed through several other consultative workshops in 2003. These environmental education parameters are guidelines on the learning-teaching content and processes and the requisite resource and staff development. The sensitisation and parameter development workshops have helped to make the subsequent integration process contextual to the teaching and learning processes in the college settings. The workshops also created a milieu for meaning-making and generated interest in mainstreaming environment into the teacher education curriculum. This process of making 'curriculum... a contextualised social process' (Cornbleth, 1991, cited in Lotz-Sisitka, 2002) has been a strong basis for intensifying other phases of St^{2}eep implementation. However, despite the interest and active involvement of educators in the setting of parameters for environmental education integration as an integral part of action research, questions on how the project objectives were to be sustained after 2006 started surfacing. How was the initial excitement and motivation to be sustained when the supporting donor funding stops at the end of 2006?

Development of Resource Materials

In line with environmental education policy guidelines and stakeholders' realisation that there is a need for useful, relevant and contextualised resource materials to support the environmental education integration process, a training of trainer's workshop on resource development was organised in September 2003. The workshop facilitators guided workshop participants through different types of resource materials, using a training manual that they had written specifically for the workshop: 'Effective resource materials for environmental education' (Pacey & Brazier, 2003). The workshop was successful and the original idea was to task the workshop facilitators to develop their training manual into a somewhat larger book on resource material development and to sell the copyright to St^{2}eep. St^{2}eep members supported the idea of developing a book on resource materials but decided that this should be done by St^{2}eep itself. A resource development task team was set up, comprising lecturers and representatives from the

Ministry of Education and the National Botanic Gardens. A second consultative resource development workshop was organised in November 2003 in Harare to come up with a format for the book. Soon after this meeting a team of five lecturers went on a resource development attachment programme in Umgeni Valley, South Africa, in December 2003 where they produced a first draft of the resource manual. This draft was then reviewed during a consultative workshop in January 2004 to see if it was still in line with the original objectives and format and to map the way forward for further development of the manual.

The ongoing development of the resource manual is characterised by cycles of planning, action, reflection upon action and further planning for action. This process, though long and slow, has enhanced the capacity of the stakeholders who have been involved in view of developing and adapting relevant environmental education resource materials. The process is being undertaken mainly by 'to be implementers' of the manual. This endows a strong sense of ownership and commitment towards the process. This process also illustrates how initial plans can be adjusted during reflective cycles of participatory action research.

However, it emerged that some participants were involved not to achieve project goals but to seek personal gain from the exposure and staff development opportunities. Project planners also realised that, while teacher educators were being professionally developed within St²eep, the acquired skills enhanced their promotional chances in universities. Some lecturers involved in St²eep have left teacher education institutions for 'greener pastures'. However, while the loss of trained personnel was felt as a set-back, the promotions also indicated that St²eep is contributing towards national development.

Development of an Environmental Education Orientation Programme for Lecturers

St²eep has developed an environmental education orientation programme for educators. This is intended to facilitate the environmental education syllabi review process in different colleges. Since the infusion of environmental education is based on a cross-curricular approach, the orientation programme will be offered to all lecturers from all subjects taught in Secondary Teacher Training Colleges. The development process of the orientation programme was initiated through a training needs analysis workshop in October 2003. Thereafter, a national Training Task Team (TTT) was identified, consisting of two to three lecturers from each of the three secondary teacher training colleges and two permanent external advisors (one from Ministry of Education, Sport and Culture and one from the National Herbarium). Work done by the training task team has been reflected upon by a bigger group in monthly meetings where guidelines for further development of the orientation programme are established. Such meetings represent instances of reflective, continuous and critical self-evaluation which are essential in environmental education and in the curriculum development process. This has enabled the task team to outline the objectives and underpinning approaches and features of the orientation programme. Based on these outcomes the TTT came up with a course structure. The programme comprises a five-day orientation programme on environmental education, followed by consultative visits and seminars over a period of three to six months. During these visits, peer lecturers discuss and guide the subject lecturers in reviewing their syllabi towards environmental education infusion.

The first orientation programme for lecturers from Professional Studies and Geography from the three colleges was run in June 2004. The development process of the orientation programme has drawn strongly on the environmental education parameters that were developed earlier in the programme. The process is characterised by participatory action research cycles. During these, stakeholders come together to plan the different aspects of the orientation programme, go back to their stations to work on their respective tasks, come back together to reflect on the work done and plan for further work. This is a very lengthy and expensive process. However, it has resulted in a locally-owned and contextual environmental education orientation programme developed by a wide range of local stakeholders who were able to enhance their capacity in terms of environmental education during the development process. The process is therefore more important than the end result which is not predetermined.

The different departments in the different colleges are fully in charge of how they want to integrate environmental education in their syllabi. In this process, St^{2}eep still plays a facilitatory role by bringing the lecturers together during the training workshops and follow-up consultative visits. However, we can see the early signs of an enabling framework in which the lecturers can engage with environmental education and their syllabi. Some could argue that this implies some risk for St^{2}eep as the lecturers might resist the idea of environmental education and conclude that there is no room for environmental education in their syllabi. However, this could be an opportunity to learn a bit more about the meaning of participation within St^{2}eep. Usher and Edwards (1996) refer to education in the postmodern as based on cultural contexts, localised and particular knowledge, on desires and on the valuing of the experience of learning as an integral part of defining a lifestyle. They argue that such education would enable greater participation in a diversity of ways by culturally diverse learners.

We do not want to highlight a specific theoretical framework that guides St^{2}eep activities, but we believe that we are moving away from participation as an obsessive imperative that may contribute to consultative inactivity (Human, 1998, cited in O'Donoghue, 1999). Instead we are moving towards a multitude of ways of participation which diffuse throughout the search for ways of engaging with *our* work, lifestyle and environment. This approach has helped to bring to light some tensions to the seemingly smooth surface. During the consultative visits lecturers expressed their doubts whether the trainee teachers would be able to implement the integrated environmental education issues and processes in the secondary school curriculum if the school syllabi were not reviewed at the same time. Others felt they would not be able to effectively implement change in their lecturing as it was going to take time to change their traditional ways of lecturer-dominated information delivery. Weiler (2003) refers to Van der Wethuizen who points out that in many instances teachers have not been encouraged to question and attempt to influence change in the classroom. Mokuku (in Weiler, 2003) also found that teachers were reluctant to move out of their preconditioned traditional role of a teacher to use a more dynamic, constructive approach.

The numerous workshops were also said to disrupt the normal flow of college duties and activities. This critique on the action research approach is shared by Stuart *et al.* (in Weiler, 2003) who indicates that 'one should not lose sight of the fact that action research has its own

demands which may conflict with the day-to-day operations of the college'. Lecturers also expressed their concern about the strong orientation towards examinations within teaching and learning. They felt that this limits the time available for follow-up on issues identified in the various research cycles. All these issues present a possible risk of resistance from college lecturers to implement the environmental education integrated syllabi.

Lessons Learned

Participatory action research permeates all stages of the development and implementation of the St^{2}eep programme. Every stage is characterised by self-reflective cycles, consisting of critical reflection on practice followed by planning and observation of action resulting in specific outcomes that are again reflected upon and lead to further action. The inherent participatory action research approach has helped stakeholders of the secondary teacher training sector in Zimbabwe to investigate their actions in order to change them and at the same time helped them to change their actions in order to investigate them (Kemmis & Wilkinson, 1998). The spiral of self-contained cycles of planning, acting and observing, and reflecting, often represented as key features of action research in literature (Kemmis & Wilkinson, 1998; Lupele, 2003), may not always be very clearly outlined (Kemmis & McTaggart, 2000). This has been the case in the whole St^{2}eep programme where there was no clear research methodology from the start.

The way things are done reflects the belief that everyone is a learner in environmental education processes and that the researchers should not always be external experts but can be the implementers and stakeholders within the programme. This 'intuitive' way of doing things implies that there is no rigid blueprint of what the programme should achieve in any given period of time. On the contrary, the process is much more fluid, open and responsive – whereby initial plans become adapted in the light of learning from experience (Kemmis & McTaggart, 2000). This also means that there is no pre-set format that the integration of environmental education into the secondary teacher training curriculum will eventually take. The methodology used within St^{2}eep puts more value on the social processes that are taking place along the way and the human aspect of all stakeholders involved in the programme. Being a donor-funded programme, St^{2}eep thus reflects a 'new' paradigm for capacity enhancement which is less result-oriented and stresses the importance of ownership. This shifts its focus from the transference of knowledge to the acquisition of knowledge and acknowledges the value of existing local capacities (Mizrahi, 2004).

We are however aware that the participatory action research approach is not the perfect or only possible way of doing things. This approach by itself also falls short in researching, supporting or describing the variety and complexity of social processes that are ongoing within St^{2}eep. An immediate problem associated with this approach is that it might interfere with normal college work through the numerous workshops and meetings. It is also an expensive approach which will need the necessary long-term support in view of financial and human resources. There is therefore a need to continue the critical dialogue on the role and the intension of the main donor organisation and other supporting stakeholders. We also have to take care that we keep on reflecting critically on the meaning of participation and action

research. A full clarification of these concepts does not fall within the scope of this paper which merely aims to initiate the articulation of those guiding principles.

Conclusion

The environmental education policy development process in Zimbabwe paved the way for planning the St^{2}eep programme. The formulation of St^{2}eep was characterised by wide stakeholder consultation and resulted in action plans for integrating environmental education across the curriculum of secondary teacher education. Through this paper, we have started to describe various processes within the St^{2}eep programme and have identified a participatory action research approach that seems to guide the programme activities. This approach was not predetermined but evolved as an intuitive way of doing things which seems to be favoured by the various stakeholders. We believe that it has contributed to the strengthening of stakeholders' sense of ownership and commitment towards the St^{2}eep programme and environmental education in secondary teacher training in Zimbabwe. Despite the successes, several challenges, such as the sustainability issue, curriculum innovation diffusion to the secondary school sector and possible resistance from the lecturers to implement the environmental education integrated syllabi, remain critical and need to be addressed.

This paper reminds us that we cannot assume that things are going smoothly within St^{2}eep. We have to be accountable for what, how and why we are doing things. Reflecting critically on the ongoing processes through participatory action research has helped us in this regard. However, the story has just started and we are developing our research skills as we move on. The meaning of participation and participatory action research needs to be explored further as the narration of the St^{2}eep story progresses. The exciting thing is that everyone is learning within the process.

Notes on the Contributors

Iris Chimbodza is National Coordinator of the St^{2}eep programme. She is head of the Geography and Environmental Science Section at Belvedere Technical Teachers College in Harare and has been actively involved in environmental education processes in the formal education sector. Email: irischimbodza@yahoo.com *or* stzeephre@zol.co.zw.

Jan van Ongevalle is currently working for VVOB where he acts as the lead facilitator in the St^{2}eep programme in Zimbabwe. He has been actively involved in environmental education processes in formal education. Email: janvo@zol.co.zw.

Manasa Madondo is a lecturer in Curriculum Theory at the University of Zimbabwe. His involvement in environmental education goes back to when he was a lecturer and environmental education Steering Team Coordinator at Belvedere Technical Teachers College in Harare. Email: mmadondo2002@yahoo.co.uk.

References

Bishop, G. (1986). *Innovation in Education*. Hong Kong: McMillan.

Carl, A.E. (1997). *Teacher Empowerment through Curriculum Development*. Cape Town: Juta and Co.

EEASA (Environmental Education Association of Southern Africa). (2002). Gaborone Declaration, a working document prepared by the 20th Annual International Conference of EEASA, *Environmental Education Processes for Sustainable Development*, Gaborone, Botswana, 19–21 August. pp.11–12

Guidelines for Secondary Teacher Training, Environmental Education in Zimbabwe, 2003, St^{2}eep (Secondary teacher training environmental education programme), Harare.

Herberden, R., Nyandoro, C., Stiles, L., Shava, S. & McLoughlin, J. (Eds). (2001). Environmental Education, in *Action in Zimbabwe. A series of case studies*. Harare: IUCN.

Huckle, J. (1995). *Reaching Out Education for Sustainability*, Surrey, WWF-UK.

Kemmis, S. & McTaggart, R. (2000). Participatory action research, in Denzin, N.K. & Lincoln, Y.S. (Eds), *Handbook of Qualitative Research*. Thousand Oaks: Sage. pp.567–605.

Kemmis, S. & Wilkinson, M. (1998). Participatory action research and the study of practice, in Atwel, B., Kemmis, S. & Weeks, P. (Eds), *Active Research in Practice: Partnerships for Social Justice in Education*. London: Routledge. pp.21–36

Lotz-Sisitka, H. (2002). Curriculum Patterning in Environmental Education: A Review of Developments in *South Africa, in Environmental Education Ethics and Action in Southern Africa*, HSRC/EEASA, Pretoria, pp.97–120.

Lupele, J. (2003), Participatory materials development in rural Zambia, *Southern African Journal of Environmental Education,* 20, pp.85–96.

Mizrahi, Y. (2004), *Capacity Enhancement Indicators*. Washington: The World Bank.

MoHET (Ministry of Higher and Tertiary Education) & VVOB (Flemish Organisation for Technical Cooperation). (2001). Planning workshop for the St^{2}eep (Secondary Teacher Training Environmental Education) programme, 5–7 December, Harare.

Mokuku, T. (2001). *Participatory Action Research: A Method for Generating Local Knowledge Systems*, in Mokuku, T., Bitso, T. & Lana, A.F. (Eds), Environmental Education for Sustainable Development – African Perspectives. Proceedings of the EEASA 19th International Conference. Maseru: EEASA. pp.67–78.

O'Donoghue, R. (1999). Participation: An under-theorised icon in research and curriculum development, *Southern African Journal of Environmental Education*, 19, pp.14–27.

Pacey, P. & Brazier, A. 2003. 'Effective Resource Materials for Environmental Education'. Unpublished Training Manual, Harare.

SADC. (1999). *Enabling EE... guidelines for environmental education policy and strategy processes in the SADC states*. Howick: SADC/IUCN/USAID.

Shava, S. (2003). Environmental Education Policy Development in Zimbabwe: An educational experience, *Southern African Journal of Environmental Education*, 20, pp.128–134.

St^{2}eep (Secondary teacher training environmental education programme). (2003). Guidelines for Secondary Teacher Training, Environmental Education in Zimbabwe. Unpublished Training Manual, Harare.

Stenhouse, L. (1981). *An introduction to Curriculum Research and Development*. London: Heineman.

UNCED. (1992). *Agenda 21* (Chapter 36). United Nations Conference on Environment and Development, Rio de Janeiro.

Usher, R. & Edwards, R. (1996). *Postmodernism and Education*. London: Routledge.

UNESCO/DEAT (Department of Environmental Affairs and Tourism). (2000). *Enabling Environmental Education Processes in Teacher Education*. Pretoria: DEAT.

Weiler, J.M. (2003). A Negotiated Dialogue: Promoting Action Research as a Constructivist Reform in a Zimbabwean Teachers' College. Unpublished PhD Thesis, Department of Teacher Education, Michigan State University, USA.