Assignments in environmental education courses: instruments for facilitating social-environmental change

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ABSTRACT

Assignments form an integral part of the tuition strategy in environmental education courses presented by Unisa's Faculty of Education. If a social-constructivist view of the environment and its issues is taken, it can be argued that assignments could be used as instruments for facilitating social-environmental change. Consequently, assignments should provide opportunities for research that is community-centred, needs-driven, participatory, leads to empowerment and is sustainable. This article reviews students' responses to set assignments in an attempt to illustrate this point. In view of the outcomes of these students' assignments, it is concluded that, although individual action is not likely to lead to the scale of social change that is necessary to preserve the environment, assignments that encourage community-based research could well facilitate the type of change that would promote environmental awareness and lead to a sustainable future.

INTRODUCTION

The tuition strategy followed at institutions of distance learning must of necessity differ from that of residential institutions. Distance education presupposes self-directed, largely independent study guided by "remote" lecturers who use tutorial matter - predominantly in the form of the written word - to facilitate the process. The basic tuition package comprises study guides or manuals, prescribed or recommended books and tutorial letters in which, inter alia, assignments are outlined. It could be asked what impact assignments have on students' development, other than the guided assimilation of relevant knowledge and skills. The aim of this discourse is to indicate that assignments, directly or indirectly, could fulfill the role of bringing about socio-environmental change.

THE NATURE OF ASSIGNMENTS IN AN EE TUITION PACKAGE

In Environmental Education (EE) courses offered at the University of South Africa, assignments form an essential aspect of the tuition strategy. Because of the autonomy that individual lecturers have regarding the way in which they structure and present their modules, it is difficult to typify the nature and purpose of assignments in general. Nevertheless, assignments, it seems, are used to accomplish two key objectives.

Pragmatic objective

From a utilitarian perspective, assignments serve as a means of gaining admission to the examination. Students need to accumulate a specific number of credits - 100 - and this is done by submitting and passing assignments. Each successful assignment affords the student a certain number of predetermined credits and the student consequently needs to submit enough assignments to acquire the total number of credits required.

Instructional objective

From an instructional point of view, the assignment serves an educational and assessment purpose. As such, assignments give students an opportunity to demonstrate to what extent they have interacted with the tutorial matter - to what degree they are able to assimilate, critically reflect on and give an analysis of the learning content (i.e. indicate whether
meaningful learning has occurred) and to demonstrate how the skills and competencies that
the module intended to teach have been or can be applied.

The extent to which the assignment is used to fulfil the above objectives lies in the hands of
the lecturer who sets the assignment. How then should the lecturer approach the task of
setting assignments that meet these objectives or needs?

The guiding principles for structuring courses in environmental education - and consequently
also the requirements for setting assignments - are probably to be sought in, inter alia,
national and international conventions and legislation that relate to the environment, as well
as national education policy documents that prescribe the minimum requirements and
outcomes for courses in the field of education.

**The demands made by environmental and education policy on the structuring of
courses in environmental education**

That there is considerable concern about the state of the environment - locally and globally -
is undisputed. Serious environmental problems are experienced worldwide and environmental
education is seen to be a key response to these problems (United Nations 1977: Agenda 21
in United Nations 1992; UNESCO 1997). As a signatory to international environmental
conventions, the South African government has committed itself to addressing the
environmental crisis locally through, amongst other things, education. This accord is
manifested in the following: the Reconstruction and Development Program or RDP (ANC
1994), which points to the need to increase environmental consciousness and to promote an
environmental ethic; the Constitution of South Africa (South Africa 1996), in which the right of
every South African to a healthy, protected and sustainable environment is enshrined; the
White Paper on Education and Training (Department of Education 1995), which states that
through environmental education environmentally literate and active citizens should be
created, and the National Environmental Management Act (South Africa 1998), which
stresses that the well-being and empowerment of communities should be promoted by
environmental education and the raising of environmental awareness among the nation's
citizens.

It could thus be said that the overarching aim of environmental education is to contribute to
the resolution of the environmental crisis by creating environmentally concerned, ethical and
literate citizens who, to enjoy a decent quality of life, subscribe to a lifestyle that supports
sustainable living and careful resource utilisation.

Furthermore, if one considers the nature of environmental issues, it becomes evident that
education that benefits the environment (education for the environment) should take on a
multi-curricular and cross-curricular character. This implies a range of competencies, skills
and knowledge to enable learners to become environmentally literate, aware and active.
There is a distinct relationship between these requirements and the seven roles of the
educator envisaged and prescribed by the Revised Norms and Standards Document
(Department of Education 1999). This states that educators should have specific practical,
foundational, reflexive and applied competencies - the latter being a combination of the first-
mentioned three competencies - that empower them to fulfil various roles such as those of
leader, administrator and manager; scholar, researcher and lifelong learner; subject
specialist; learning mediator; interpreter and designer of learning programmes; assessor; and
fulfilling a community, citizenship and pastoral role.

Since qualifications in environmental education are directed primarily towards the teaching
profession (although many who register for the Certificate are in environmental conservation
and other environmental fields and not necessarily in education per se), it goes without saying
that the tenets of national policy in relation to school education will influence the content and
the delivery of the programme. In this regard, one needs to refer to Curriculum 2005 - or more
correctly, Curriculum 21 that will be replacing C2005 with time. Since clarity regarding the
nature of the new curriculum and the status of environmental education has not yet been
provided, it is difficult to outline the criteria that will need to be met. However, that environmental education will form an integral part of the curriculum goes without saying.

The issue that needs to be addressed at this point is: how can assignments in environmental education modules be designed to address the demands made by environmental and education policy?

ASSIGNMENTS IN EE: PROMOTING SOCIAL-ENVIRONMENTAL CHANGE

There is growing support for the view that environmental problems are socially constructed and that they should be viewed as social problems (Gough 1999:32). This is probably linked to the broadening of the definition of "environment" to include - apart from the biophysical - the social environment with its related cultural, economic and political dimensions.

The implications of a social-constructivist environmental view for the setting of assignments

If a socially constructed perspective of environmental issues is adopted, it means that the approach to environmental education programmes should be multi-dimensional, contextually responsive, relevant, topical and praxis-oriented. Such an approach would develop environmental competences that would enable students to fulfil the role of social-environmental transformers, in line with the requirements of the educational and environmental policies outlined above. To give greater relevance to assignments as part of the environmental education programme, there is a trend towards requiring students to become engaged in community-based research. The methods proposed include case studies, scenarios, simulations and the conducting of authentic environmental audits as a means of effecting the required research (Janse van Rensburg, Lotz, Heck & Ferreira 2000:1.1.10).

Putting theory into practice, I would like to illustrate how assignments in one of the modules for the Advanced Certificate in Environmental Education (a five-module postgraduate qualification designed to equip students with the knowledge and skills required to become specialists in environmental education) have been used - perhaps unwittingly - to contribute towards the amelioration of environmental problems. The module chosen for this purpose is the final module (FDEEV5-Y). The assignment is the second of two compulsory assignments in the module. The assignment calls for the integration of knowledge and skills acquired in the course up to that stage. Students are asked to do an environmental audit of their areas and to identify a particular environmental issue that requires further research. This issue is then researched (students choose the research method most appropriate for the study and provide details of the process and strategies followed) and the findings (the background and outline of the main issues inherent in the problem, the causes of the problem and the proposal of possible solutions) are reported on in detail. However, we have found that students go beyond the basic assignment task and provide a report on not only what recommendations have been made to address the environmental problem, but also how the recommendations arising from the research were implemented in their own particular situations to bring about social-environmental change.

Example 1: Waste management at the Ramotswa Secondary School - Botswana

(The assignment was submitted by Ms TMT Katze, Ramotswa, Botswana)
In this research project, the student investigated the issue of waste management at the Ramotswa Secondary School. The project aimed at creating an awareness among the community of the economic opportunities that are to be found in sustainable and environmentally compatible waste management. The specific objectives were to enable students to identify the various types of waste generated at the school and to realise the economic potential of the waste by participating in simple waste management strategies such as recycling, reusing and reducing waste.
It was found that the most common types of waste generated at the school were paper, organic waste, water and wood.

Paper waste was in the form of scripts and exercise books that were no longer of use, and paper (pages from exercise books and scrap paper) discarded by learners on a daily basis. It was also found that there were several reams of unused paper that had been stored in the storeroom for several years. Since the size did not comply with that required by the photocopier and the computer printer, it could not be used and seemingly had no purpose.

Organic waste was generated by the school kitchen, the Home Economics Department, the Design and Technology Department and learners' school lunches. Wood - as a form of organic waste - originated from the Design and Technology Department and included wood shavings, off-cuts and sawdust. Waste water originated from the school kitchen and from the Home Economics Department, where laundering and washing up of utensils occurred. Water was also being wasted at the drinking fountains.

During the research, it became evident that various members of the school community were unable to distinguish between waste and litter. To most the two concepts were synonymous. One of the outcomes of the investigation was that it raised the community's awareness of the reality of the waste situation and their contribution to it, for example the mismanagement of water and organic waste generated on the school premises and the poor waste disposal methods which were followed (e.g. the failure to separate waste, to utilise that which could be recycled and properly dispose of that which was not biodegradable).

The recommendations that were proposed, implemented and monitored for their level of success included the following.

- Local recycling companies were contacted to arrange for the collection of recyclable waste such as paper and cans.
- The suppliers of the paper that had been mistakenly purchased were approached to determine whether the paper could be returned for a refund. An alternative - should these negotiations be unsuccessful - was that the paper be used in the Art Department or be sold to a recycling company.
- Water waste was diverted from the drains by digging trenches from the outlet to flower beds, trees and the school garden.
- Learners were encouraged to use cups or containers at the drinking fountain.
- Organic waste in the form of vegetable peelings and food scraps was used for compost.
- The wood shavings generated by the Design and Technology Department were used by the Agriculture Department as chicken bedding. When the bedding became mucky, it was used as compost in the school garden.
- The Design and Technology Department became involved in manufacturing their own wood filler by mixing sawdust with glue and also used the mixture to mend wooden furniture around the school.
- The off-cuts generated in the Department were used in the manufacture of wooden toys, beads and dice cubes - items that could be sold to generate funds.

Apart from the waste management strategies outlined above, another consequence of the research project was that a school environmental committee was established. One of its first tasks was to hold workshops to conscientise staff and learners about basic waste management skills such as separating, reducing and recycling waste. A local environmental group, Environmental Watch, was invited to do a presentation on water conservation and to initiate projects that addressed water management. A project currently under consideration is a water recycling and purification project based on a reed-bed filtration system.

In conclusion, the student observed that the research project, initiated as a project to fulfil the requirements of an assignment in an environmental education certificate course, had not only created an awareness of the environment among all who had become involved in the
research process, but had also brought about a widespread attitudinal change and willingness to participate in solving environmental problems. The school community responded positively towards the project and, for the first time, became aware that they actually had a hand in local environmental issues. The overall outcome: the project had contributed to bringing about social-environmental change in the community.

Example 2: Littering at the Nkadimeng Primary School in Moteti, Mpumalanga Province

(The assignment was submitted by Ms AM Poto, Moteti)

Nkadimeng Primary School experienced an inordinate littering problem. Because of a lack of litter disposal points, litter was scattered all over the school grounds and in the classrooms. The problem was further exacerbated by the fact that the school is close to a main road where litter abounds. In addition, food vendors who entered the school grounds during recess contributed to the problem by discarding wrappings and other litter where they sold their wares.

It had come to this student’s attention that the community seemed oblivious to the problem - they lived around and with litter and still continued to litter. In her opinion, the school community (and ultimately the broader community) needed to be sensitised to the issue and to be made aware of the dangers of litter. During the initial stages of the research it seemed that the littering problem could be attributed to a lack of an environmental consciousness among the school community; an indifferent attitude towards the environment and its preservation; a lack of knowledge of how to recycle and reuse accumulated waste products that became litter; and the absence of a school environmental policy. The student, aware that the problem of litter inherently poses a health hazard, negotiated with the principal of the school to call a staff meeting to discuss ways of dealing with the problem.

At the meeting, it was decided to start with an environmental awareness campaign in the school. This was done on an individual class basis, with educators discussing the issue with the learners and sensitising them to the presence - and potential hazards - of litter. This phase was followed by arranging an "inter-class" debate on the issue. The debate was a school function held during assembly. A next phase in the process was that learners were given the opportunity to propose ways of using litter creatively. The following ingenious ideas were forthcoming.

- Make mugs from discarded tins for use at the drinking fountain - and simultaneously save water.
- Make colourful artificial flowers from hard plastic (e.g. that of 2 litre cooldrink bottles) to be sold for funds.
- Weave mats and ropes from plastic bags for use in the classroom.
- Make costumes from plastic for stage productions.
- Make toys and puppets from paper (papier maché) for use in, for instance, language lessons.

The next step was to involve the staff community in the anti-litter campaign. Staff were sensitised to their status as role models and the necessity of setting good personal examples. The community was also included in this phase and a special effort was made to encourage the food vendors to set a good example by not littering the grounds. At this stage, it was deemed expedient to draft a school environmental policy that would provide the mandate for continued litter control and prevent a relapse from the currently improved situation.

The resultant policy was a joint effort that included the inputs of the principal, staff, learners and the school governing body. It made provision for addressing issues such as the

- creation of a school environment that exhibited a culture of environmental awareness and nurture
- monitoring of the environmental status of the school by means of regular environmental auditing procedures
collection and exhibition of environmental resources to be used in teaching and learning programmes as a means of fostering an appreciation of the environment
• commemoration of environmental days
• establishment of an environmental club to give learners - individually and collectively - the opportunity to become involved in environmental fieldwork, projects and competitions
• arranging and sustaining of environmental initiatives such as recycling and permaculture projects
• urging of a cross-curricular approach to teaching about environmental issues.

The draft policy was distributed among staff for review and comment. After shortcomings had been dealt with, the policy was adopted and became part of the school policy. To ensure its successful implementation, an environmental education co-ordinator was appointed and an environmental education working group was established. This group comprises representatives from the teaching staff, the learners, parents and the broader community. It was decided that the policy should be reviewed after six months to determine whether shortcomings had arisen in the meantime. The recycling projects were started immediately and the broader community was invited to participate in these campaigns. The local community assisted the school by donating drums to be used to collect categories of items for recycling. Paint was donated for marking the bins for easy identification. Once again: a project that started off as an assignment for a module in environmental education caught the imagination of the student, the principal, the staff, the learners, and soon that of the broader community as well. Collectively an effort was made to bring about a necessary change to the community’s environment.

Brief comments regarding students’ approaches to carrying out the set assignment

The fact that students go beyond the basic requirements of the assignment raises, in my opinion, two issues. One, the assignment guidelines and parameters should be reformulated since they currently do not provide students with the opportunity to demonstrate fully their ability to address an environmental issue as experienced in their community. Second, students are not deterred by the limitations of an assignment arising from inadequate formulation and, possibly because of becoming engrossed in the research, believe it essential that the project be seen through to some form of conclusion.

There is a deeper significance to conducting environmental research in one’s own community. It could be argued that one has a moral responsibility towards those with whom one co-exists to contribute meaningfully to that state of co-existence. With assignments of this nature, the finalisation of the research contributes towards the social and environmental upliftment of the community, and consequently contributes towards educating for socio-environmental change not only the students personally, but also that section of the community with whom they come into contact during the process.

The contribution of a social-constructivist view of the environment to facilitating social-environmental transformation

The assignment responses outlined above feature clear-cut involvement in the everyday functioning of a particular community in an effort to redress an environmental issue experienced within that part of society. From the examples cited, it is evident that community-based research implies fieldwork. Apart from providing first-hand knowledge about the environment and the issues being studied, fieldwork has the potential to overcome barriers and to advance and enhance environmental consciousness by empowering local people to act on [environmental] issues. Community members are empowered to experience the need in their own environments and to appreciate the effects of people’s actions on the environment. Through fieldwork concern for the environment is heightened, and this is one way of persuading people to become environmentally accountable and responsible. A further advantage of fieldwork is that the link between theoretical knowledge and lived situations is clarified (Mphaphuli 2000:3.3.2-3.3.3).
CONCLUDING COMMENTS

It can be postulated that distance education courses in environmental education could be made more relevant by the way assignments are set. If a social-constructivist view of environmental education is taken, assignments could provide opportunities for research that is community centred, needs driven and participatory, leads to empowerment and is sustainable. Environmental education programmes could do more than fulfil a vocational need by providing academic training; they could equip learners and communities with a consciousness of the environment and with skills and methods for dealing with the various environmental issues that they face, and in so doing facilitate social-environmental change.

Individual action is not likely to lead to the scale of social change that is necessary to preserve the environment, and it is only through community action that we can hope to solve the political and social tensions inherent in environmental problems. Assignments that encourage community-based research could well facilitate the type of change that could lead to a sustainable future.

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