



Environmental Education Policy Implementation in Botswana: The role of secondary education officers and school heads

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Abstract

The success of environmental education implementation depends on strong support from school authorities, educational planners, policy makers, administrators and others who are responsible for the education system. This paper is based on a study conducted among education officers and school heads at secondary school level in Botswana. It focuses on environmental education as practised by education officers and school heads. The results indicate some constraints regarding the logistics and official commitment of these key role players. The paper also puts forward some recommendations for further research and review of environmental education policy implementation, with a view to informing a more workable environmental education implementation strategy in Botswana.

Background to the Study

The reason for doing this research emanated from my experience with secondary school teachers, heads and education officers who often do not turn up for in-service workshops or activities. I managed to get funding from the University of Botswana to conduct this study and wanted to use the findings to generate recommendations to improve environmental education implementation processes in secondary schools. The objective of the study was to find out whether education officers and school heads are playing a supporting role in environmental education implementation in secondary schools in Botswana, and the research was conceptualised as an evaluation study.

Since 1996, the Ministry of Education has been engaged in the implementation of environmental education as an infused phenomenon (i.e. attempts are made to infuse environmental education into the existing curriculum). Environmental education is an educational innovation in the curriculum grouped together with HIV/AIDS and population and family life education as 'emerging issues'. In the 2003 Environmental Education Guidelines, the Ministry of Education formulated national goals for environmental education. The goals include: development of environmental awareness; acquisition of knowledge and understanding; skills; and the acquisition of desirable attitudes and behavioural patterns in interacting with the environment in a manner that is protective, preserving and nurturing (CDE, 2003). Given that these goals are articulated in national policy, it is hoped that teaching and learning in schools, curriculum development and materials development processes will take these goals into consideration.

The 1994 Revised National Policy on Education (RNPE) (Botswana Government, 1994) has mandated the introduction of environmental education across the curriculum. This implies that all teachers are expected to infuse it into their teaching. This research included a consideration of the support needed for teachers to carry out environmental education across the curriculum as mandated by the RNPE. Wilke (1985, cited in Tilbury, 1992) has noted that the key to successful environmental education is the classroom teacher. Successful environmental education is therefore also dependent on teacher education and support provided for teachers.

Methodology

The respondents involved in this study were drawn from five secondary education regions in the country. The data was collected using a combination of qualitative and quantitative research methods. This entailed the use of a survey technique in which questionnaires were given to the respondents to complete. Qualitative interviews were conducted where the researcher managed to secure an appointment with the respondents and in some instance as a follow-up to a sample of respondent questionnaires. The study focused on respondents' experiences of: environmental education implementation in schools; in-service training; support materials; and policy issues. In Botswana, teacher support includes: in-service workshops; provision of resources and materials; support visits by education officers; support from heads of departments and school heads; and attempts to create a conducive working environment for teachers.

The study was done through written questionnaires to gather qualitative data about environmental education implementation. The questionnaire consisted of both closed and open-ended questions derived from the research questions and the purpose of the study. The questionnaire was subjected to validity and reliability tests to ensure that the data collected would be trustworthy and that the questionnaire could be used by other researchers in future. The questionnaire was checked by experts with experience in constructing questionnaires. A formal piloting of the questionnaire (Ary *et al.*, 1996; Bailey, 1994; Baker, 1999) was done in Maun, where three education officers and five school heads filled in the questionnaire. The piloting exercise was a success and only minor typing corrections were effected. The purpose of this validation was to ensure: representivity of the items dealing with evaluation of environmental education implementation; the relevance of the problem being investigated; clarity of the items; and clarity of the instructions.

The questionnaires were hand-delivered to the respondents to complete within 24 hours. It was conducted in this way to get the maximum number of returns from the sampled respondents. The interviews took a semi-structured form in a face-to-face situation, providing the researcher with opportunities to probe beyond the given answers (Ary *et al.*, 1996; Bailey 1994; Baker, 1999). Appointments were made with the respondents and interviews were scheduled for half an hour or less.

To ensure adequate representation, and to reduce bias, the researcher preferred to use simple random sampling techniques in conjunction with stratified sampling. Since it was not possible to cover over 290 secondary schools scattered across the country (many are in remote areas), a sample of 20 school heads and 20 education officers was selected. Schools were selected from five

regions (Table 1). Samples of five education officers and five school heads were to be covered in urban centers such as Francistown, Maun and Gaborone with more schools and education officers. A list of schools per region and towns was used to randomly select the schools. Random selection of education officers was based on their availability during data collection.

Data Analysis and Findings

A total of 26 education officers and school heads were either interviewed or handed the questionnaire to complete. Nine respondents were male and 13 were female. Collected data indicates that all respondents were over 36 years of age. A total of four respondents did not indicate their gender. The education regions involved in the study were North Central (Selebi/Phikwe and Palapye), North (Francistown), Northwest (Maun), South Central (Gaborone) and Southern.

Table 1. Education officers and school heads by regions

Education Regions				
Name of region	No. of officers	No. of school heads	Frequency	Percentages
North Central (Selebi-Phikwe and Palapye)	2	2	4	15.4
North(Francistown)	4	1	5	19.2
North West (Maun)	3	5	8	30.8
South Central (Gaborone region)	2	5	7	26.9
Southern	2	0	2	7.7
Non-responses	0	0	0	0
Totals	13	13	26	100

Interpretations of the Role of Environmental Education in Schools

The majority of the respondents (60%) claimed that they were involved in environmental education activities. About 30% said they were not involved in environmental education activities, while only 10% said they were not sure. Those who claimed that they were involved noted the following activities to be indicative of their involvement in environmental education: organising fairs and workshops; coordinating activities; advising teachers; and including an environmental education focus in their school inspection.

Another reason provided was that environmental education is done as part of social studies in schools, and that it was therefore the responsibility of specific teachers. Education officers

responsible for social studies felt comfortable that their teachers were implementing environmental education. They were satisfied by their role as facilitators of actions in schools.

Most of the respondents felt that it was necessary to teach environmental education at secondary school level. To justify the need to introduce environmental education in schools, some respondents felt that conservation is an issue that cannot be ignored because the environment/nature has to be nurtured and preserved. Others noted that as population increases, environmental problems increase and hence learners need to be sensitised and educated to respond to these issues. Some respondents noted that environmental education equips learners with skills and positive attitudes towards the environment. Some respondents seemed to see a link between environmental education and problem solving, competence development to respond to issues such as pollution, and a greater awareness the role of indigenous knowledge systems in education.

Implementation Problems

Most of the respondents identified problems confronting them as they support environmental education implementation in schools. These problems included: lack of information from the Curriculum Development Unit; untrained teachers; the attitudes of teachers; and a lack of facilities. It seems that they had expected the Ministry of Education to furnish them with a detailed implementation programme and to explain the procedures as well as what is expected of them as supervisors. Many respondents noted that it was because environmental education is not examined or timetabled, that they do not give it much attention.

In general, it seems that environmental education is treated as an additional burden and teachers are not willing to concentrate on it. Some respondents are playing a minimal role in environmental education activities because they feel it is not necessary to infuse it at secondary school level. They claimed that teachers are faced with numerous difficulties in teaching environmental education. It was very clear from the study that some respondents (education officers and school heads) do not have adequate knowledge of what is happening in schools, particularly in the classrooms. They are not sure whether their teachers take learners out on field studies or not. Some indicated that fieldwork is seldom done. They noted transport and time constraints as contributory factors to limited fieldwork activities.

Despite the fact that education officers and school heads are supposed to give teachers professional support it was clear that some were not aware of the difficulties teachers face in implementing environmental education. Other respondents felt that the school environment was not conducive to environmental learning. They felt that the existing curriculum is too theoretical and not suitable for the infusion of environmental education and that, for a conducive learning environment to be created, there should be more opportunities for fieldwork and projects to supplement more theoretical classroom activities.

Teaching and Learning Support Material

With regard to the provision of teaching and learning resources to effectively infuse environmental education in schools, some of the respondents felt that teachers have adequate resources. Others felt that teachers do not have adequate teaching and learning resources and suggested that there should be better provision of resources. Another opinion expressed was that teachers could work with students to produce materials. It was very clear that many of the respondents still believe strongly in the value of textbooks. They feel that without a textbook, teaching and learning could be seriously constrained. It would seem that attention should be given to how environmental education is infused in textbooks, and how other resources can be used in conjunction with textbooks.

In-Service Training

To overcome some of the problems hampering their roles and to make environmental education implementation easier, some teachers agreed that the Ministry of Education should establish well-equipped environmental education centres to cater for both in-service teacher education and residential courses for learners. They felt that the current arrangement where they are required to take part in environmental education is not practical as their subject specialisations influence their daily duties. The majority of the respondents advocated in-service training to effectively carry out their duties in assisting teachers. They suggested that coordination and monitoring mechanisms should be put in place by schools. Currently, the implementation programme for environmental education is 'loose' and subject to neglect by both educators and supervisors.

A number of the education officers and school heads involved in this study revealed that some teachers in their regions have attended in-service training in environmental education for periods varying from two days to two weeks. They reported that the effectiveness of some teachers after attending the training workshops was the same as before, while others had improved. Even though this statement casts some doubt on the effectiveness of short-term in-service training, the need for in-service programmes was still seen as a solution to the problem.

Lack of effectiveness of teachers who had attended in-service training could be attributed to a number of factors such as lack of support from some authorities and resources. These respondents suggested that in view of the policy requirements for environmental education, teacher training for environmental education should start in pre-service training (colleges of education). Many graduate from colleges and the universities every year without any exposure to environmental education, which currently creates a need for in-service teacher education in environmental education. It would seem that environmental education is not well developed within the teacher education structures in Botswana yet.

Those who acknowledged that there were no achievements noted that teachers have not received training on how to infuse environmental education into the curriculum. They noted that some teachers are not willing to try something that they do not fully understand. The majority of respondents felt that since there are no examination questions on environmental

education, teachers concentrate on examinable subjects, and this leads to a marginalisation of environmental education in the subjects. It also indicates that the examination system is very powerful in determining what gets taught in schools. Some felt that implementation has been too slow and this was blamed on the Ministry of Education.

Policy Issues

It was interesting to note that despite the fact that environmental education is supposed to be infused across the curriculum and the respondents by nature of their role in education are supposed to be aware of what is happening, some are not even sure of whether teachers infuse environmental education or not. The majority, however, appeared to know what the policy requirements were, but acknowledged that teachers are not actually implementing environmental education.

When asked why teachers were not taking environmental education seriously, the respondents noted that teachers had responsibilities to teach other subjects. This explanation appears to indicate that environmental education is viewed as a subject and that teachers should therefore be expected to specialise in their own subject areas and not be expected to teach environmental education. The explanation also indicates that the 'infusion' policy requirement is not well understood. Some felt that environmental education has not been tested, and that teachers have no information and resources to implement environmental education. Some respondents also noted that environmental education concepts are difficult to interpret.

It was established that many of the respondents agreed that environmental education implementation should be intensified and that educational authorities should be convinced of its importance in Botswana. They felt that to strengthen environmental education implementation there should be a better supply of teaching and learning support materials; that environmental education should be considered a core responsibility of all teachers; and that it should be included in the national examinations.

Many of the respondents claimed that they always express their views regarding environmental education implementation in Education Department workshops but nothing seems to be changing. They are not satisfied with the current situation where their role is not clear because of a lack of understanding and support from their superiors. From this finding, it seems that there is no one 'driving' or claiming responsibility environmental education implementation. While one would expect the respondents to be acting on behalf of the Ministry of Education to ensure that environmental education is implemented, they shift the blame to their superiors or teachers in the classroom. It was clear from the respondents that they are aware of the policy, but some could not remember what it entails and what was expected of them.

Achievements

The 1994 RNPE (Botswana Government, 1994) advocates infusion of environmental education across the curriculum, especially at secondary school level. Many of the respondents said there have been some achievements in its implementation in secondary schools. Some

mentioned the establishment of cluster committees, fairs, clubs and projects related to environmental problems as achievements. Although these respondents did not claim these achievements as a direct result of their role, they indicated that they are aware of what is happening in schools under their supervision. Of interest is the fact that many of these environmental education activities are extra-curricular and are not infused into everyday curriculum activities in subject teaching.

In response to limited achievements surrounding environmental education implementation (as envisaged by the RNPE), the respondents suggested the introduction of a device to measure achievements and improvements associated with environmental education implementation. It was argued that environmental education should not be 'infused' as enrichment but should be offered as a separate subject. Some suggestions were that each school and region should have a focal person (an environmental education coordinator) and that environmental education should be allocated time in the timetable. They felt that the appointment of environmental education officers in the region to oversee the implementation of this policy priority would ensure that there are some achievements at school level.

Conclusion

The research initiative aimed to evaluate the role of education officers and school heads in environmental education implementation at secondary schools in Botswana. The methods employed were both face-to-face interview and use of a questionnaire. The researcher was concerned with the respondents' views on implementation progress. This involved an exploration of logistical underpinnings; attitudinal undertones; material provision and use; constraints; and commitment and support of educational authorities.

The findings indicate that most respondents understand their general roles in education well. The difficulty appears to arise in their role functions where environmental education implementation is concerned. The general feeling is that environmental education is an important part of the national curriculum, but that it must be a separate learning area or subject instead of being infused. It must be examined and learning support material must be made available. The findings also indicate that there is a lack of clarity surrounding the meanings, possibilities and approaches required for 'infusing' environmental education. This impacts on their role in supporting policy implementation. Findings also indicated that some respondents often neglect environmental education. Even where it is said that environmental education is taking place, the majority of respondents listed cleaning up as an example of environmental education activity. They associated their support for environmental education with fairs and training workshops.

It was clear from the study that very little environmental education activity is actually taking place in most of the schools. The education officers are not properly oriented to give appropriate guidance to school heads and teachers. Some are, in fact, opposed to environmental education due to a number of reasons such as not understanding environmental education; a feeling that they have more than enough to handle; and that it is a 'waste of time' giving support to an area that is not examinable.

The RNPE policy requires all education officers and school heads to extend their role and include environmental education implementation within a policy framework of 'infusion' into the curriculum. Surprisingly, there appears to be no monitoring mechanism to ensure that the respondents do play a role in environmental education implementation. As a result, some authorities do not even know what the RNPE policy requirement means or what their role ought to be in supporting environmental education activities. From the findings, one may conclude that if this trend continues, environmental education may well become obsolete and moribund in the near future. A clear and vigorous programme would seem to be needed to monitor and support environmental education implementation. This would appear to require a progress-monitoring mechanism with frequent reports and follow-ups, enhanced teacher education (in-service and pre-service), provision of adequate resources and enhanced clarity surrounding the actual meaning of the policy framework of 'infusion'.

Based on the responses from this study, it would seem that environmental education implementation is not progressing well in secondary schools in Botswana. There is a general feeling that environmental education is important in the national curriculum, but there is a lack of certainty as to how this should be done. Many feel that the introduction of a separate subject would be a more appropriate approach to the current policy of infusion; while others felt that infusion approaches were appropriate, but they illustrated that there is need for greater clarity on what is meant by infusion approaches. Another proposed solution to enhancement of implementation of environmental education is to include environmental education within the national examinations across all subjects.

Most of the respondents in the study had never received any in-service training in environmental education. This appears to have affected their role as policy implementers and supervisors in schools. Many shared the view that in-service training programmes would accelerate environmental implementation in schools.

Although the respondents are aware of the education policy there is lack of understanding as to how environmental education implementation should proceed. Furthermore there is a lack of monitoring mechanisms and commitment among some education authorities. Environmental education is afforded low status compared to other current issues such as HIV/AIDS. The study reveals that while it is easy to develop environmental education policy and curriculum, it is not as easy to implement and maintain these policies.

Recommendations

Based on the findings and conclusions from the study, the researcher recommends the following:

- Within the infusion framework there is need to clarify and examine environmental education related issues in relation to existing curriculum requirements.
- An in-service training programme for teachers, heads and education officers should be put in place to improve implementation progress.
- Clear guidelines need to be drawn up for secondary school education officers and

school heads to provide them with the necessary support to interpret the requirements of the RNPE policy for environmental education.

- Enthusiastic educators ought be motivated through more defined responsibilities (e.g. the post of an environmental education coordinator) to promote the status of environmental education in schools.
- An effective monitoring system should be established to ensure that education and school heads play their role in the implementation of environmental education.
- Materials development should be initiated and sustained to ensure that all stakeholders are well equipped to implement environmental education processes in schools.
- Further studies should be conducted on environmental education pedagogies, conceptions of environmental issues and attitudes towards the environment amongst teachers, learners, head teachers and education officers.
- Further research and review of environmental education policy to inform development of a workable environmental education implementation strategy that would be acceptable to educators is necessary.

Notes on the Contributor

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