Advancing Jamaican Formal Education Through Environmental Education for Sustainable Development

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ABSTRACT

Jamaica’s commitment to the Decade of Education for Sustainable Development builds on 12 years of environmental education initiatives within the framework of a national action plan. Partnerships developed among educational institutions, government agencies, NGOs and donors are facilitating change in the formal education system, integrating environmental education into teacher professional development and national curricula; involving the school/college community in participatory planning; and implementing whole college approaches. This paper will present the EESD strategies, successes, challenges and lessons learned in facilitating the development of knowledge, skills, values and actions to create and take advantage of opportunities in our changing world.
KEYWORDS

Jamaica, environmental education, environmental education for sustainable development, whole-school approaches, teacher professional development, curriculum development

ADVANCING JAMAICAN FORMAL EDUCATION THROUGH ENVIRONMENTAL EDUCATION FOR SUSTAINABLE DEVELOPMENT

INTRODUCTION

Jamaica, the land of wood and water, is a small island developing state with an area of 10,990.5 km² and a population of 2.66 million (PIOJ, 2005, Statin, 2003). The island is known for its natural beauty, significant number of endemic species, and cultural creativity. However, Jamaica’s major contributors to GDP, the bauxite and tourism industries, pressure its fragile ecosystems, and also contribute to pollution and deforestation. Population growth and unemployment result in increasing urbanization and accompanying social problems such as crime and lack of sanitation. In addition, the island is prone to hurricanes that often cause great destruction. In light of these circumstances, any attempt to achieve a better quality of life for all Jamaicans must involve education that goes beyond knowledge about the environment to education aimed at fostering in individuals, skills and attitudes that will lead to committed action to care for the environment, and contribute to a sustainable future.

Propelled by the International Environmental Education Programme of UNESCO and UNEP in the late 1980s, emphasis was placed on environmental education (EE) in the formal education sector of Jamaica. An environmental dimension was integrated into many subject curricula at all levels, some instructional materials were developed, and examinations assessed students’ understanding of the environment and environmental issues. However, this early work proceeded largely in an uncoordinated, top-down manner (Glasgow, 1993).

Following the UN Conference on Environment and Development in 1992, the Natural Resources Conservation Authority recognized environmental education as a critical component for promoting sustainable development and formed a multi-stakeholder body, the National Environmental Education Committee (NEEC) in 1993. With funding from the Jamaica/Canada Environmental Action (ENACT) Programme, the NEEC spearheaded an interactive participatory process (Pretty & Hine, 1999, www.essex.ac.uk/ces/esu/community-participatory.shtml, 14/3/2007), which developed the National Environmental Education Action Plan for Sustainable Development (NEEC, 1998). This master plan envisions “a wholesome future in which social, economic and environmental developments are pursued harmoniously,” and outlines a comprehensive framework for environmental education for sustainable development (EESD) in curriculum development, teacher professional development, national public awareness, community learning, and resources and practices. The plan states:

Environmental education is envisioned as a holistic, integrative force which will enhance Jamaicans internally as a precursor to external action; which will work through the formal education
system, and through non-formal learning, to encourage environment-friendly action at the individual, business enterprise, national and community levels (NEEC, 1998, p. 16).

This paper outlines strategies that have been employed in early childhood, primary, secondary and teacher education to address EESD in curriculum development, teacher professional development and at the whole-institution level. Success factors and challenges faced in bringing about change will be reviewed. EESD in higher education or vocational education will not be addressed.

**CURRICULUM DEVELOPMENT**

In Jamaican school curricula, the environment is conceptualized holistically, as consisting of biophysical, social, economic, and political dimensions. EESD seeks to integrate human, social and economic development with environmental protection in a holistic framework. Such holism would be achieved best through interdisciplinary curricula; however, the major curricular approach to EESD in Jamaica is infusion in multiple disciplines, coupled with some interdisciplinary courses and activities.

**EESD in Early Childhood Curricula**

Currently, the curriculum for the early childhood sector (0-6 years) is being re-written from developmentally appropriate perspectives (Gestwicki, 1999). It is premised on six learning outcomes. Three of these – respect for self, others and the environment, valuing culture, and resilience – will form the basis from which learning experiences about and in the environment and for sustainable lifestyles would emerge. Topics such as knowing about and caring for self, living and non-living things, as well as family life education, will frame the children’s learning experiences. With a growing national focus on children’s rights and equity, as it relates to young children, their families and communities, it is expected that new curricula will embrace issues of social justice and intergenerational equity.

Some children are already having positive learning experiences in relation to the environment and sustainable lifestyles, as a number of the diverse types of early childhood institutions use the outdoors and communities for teaching and learning. Unfortunately, these experiences, especially for children in basic schools (3-6 years) are not systematic, and often, are not planned with EESD in mind.

**EESD in the Primary Curriculum**

The national Revised Primary Curriculum (MOEYC, 1999) is organized as an integrated one using the theme of “Me and My environment” for grades 1-3. Topics such as care of self, family, community, Jamaican culture, and caring for the environment predominate in this integrated curriculum. Teachers are expected to focus on “learning rather than teaching”, allowing children “to construct meaning for themselves and to begin to understand the world and to make wise choices” (MOEYC, 1999, p. x). Activities are designed to give children opportunities to work collaboratively, to develop multiple intelligences, and to be educated about social, cultural and health issues.
Grades 4-6 curricula are in discrete subjects with EE found mainly in science and social studies; however, opportunities exist for children to do research and project work through interdisciplinary themes that address environmental issues. Indeed, there is evidence from projects undertaken by the Schools’ Environment Programme (SEP), led by an NGO, the Jamaica Environment Trust (JET), that a number of primary schools are demonstrating best practices in infusing environmental issues and action across many disciplines. (JET, 2004)

**EESD in the Secondary Curriculum**

EESD opportunities appear to be fewer at the secondary level than at the primary levels of schooling in Jamaica. In the 1990s, a World Bank Project resulted in a new curriculum for grades 7-9 of secondary schools. The curriculum was designed to be, among other things: responsive to national goals and student needs; and broad and balanced, centred around language arts, mathematics, resources and technology, science and social studies. The curriculum also aimed to develop socially responsible students who could work collaboratively with others and be responsible for their own learning (MOEC, 1998). The curriculum developers recognized that there were learning experiences that could be infused across content areas. They expected teachers to use learner-centred methodologies and a number of participatory learning tools, including problem-solving and experiential approaches.

At the upper secondary levels, the majority of students pursue the Caribbean Examinations Council’s syllabuses that are infused, to varying degrees with EE topics, especially science subjects, geography, history and social studies. However, the emphasis is largely on teaching about the environment and, to a lesser extent, in the environment. Focus on critical thinking and problem solving, as well as student action on environmental issues associated with education for the environment is minimal. The major actions encouraged in these syllabuses are energy and water conservation, waste minimization and cultural expressions. Participation of students is not mainstreamed, and takes place mainly in science and environmental clubs, school assemblies, and celebrations of environmental calendar days, e.g. Peace Day, National Heritage Week, Earth Day, National Environmental Awareness Week.

**EESD in Teacher Education Curricula**

Advances in EESD in teacher education were made with the Sustainable Teacher Environmental Education Project (STEEP), 2000 to present. Implemented by the Joint Board of Teacher Education (JBTE) supported by the ENACT Programme, this project integrated EESD into all courses in the early childhood and secondary science programmes. Further, an interdisciplinary environmental education elective for secondary teacher trainees was developed and another elective for primary teacher trainees will soon be piloted. These courses are unique because students are expected to examine lifestyles and identify ways in which they could live more sustainably with their environment. They collaborate to investigate the use of water, energy, and other resources, as well as to investigate safety practices at their colleges and they make recommendations to college administration for sustainable consumption.

As more lecturers come to develop their understanding of EESD principles, they are beginning to change their curricular practices, as evidenced in a biodiversity project implemented by the JBTE and
the Jamaica Environment Trust in nine teachers’ colleges (JET/JBTE, 2007). Cross-curricular teams are planning activities around biodiversity themes. Through hands-on projects on vegetable gardening, birds, medicinal herbs, to name a few, students are exploring the complexities of habitats and ecosystems, and how to overcome threats to them. They are engaging in systems thinking about the relationships among ecological, economic and social choices (Sterling, 2001). Students are moving beyond curricular boundaries to engage in experiential, action learning in real world projects with members of the community inside and outside the colleges.

PROFESSIONAL DEVELOPMENT

The National Action Plan identified professional development of teachers as a priority area for the delivery of quality programmes in EESD, as it recognized that the quality of student learning depends to a large extent on the quality of professional development provided for teachers (NEEC, 1998).

According to the Plan, learning outcomes for educators include the following:

• acquiring essential knowledge about human needs and nature’s life-support system; ethical and value systems; and responsibility to future generations;
• developing professional skills to facilitate learning by means of a variety of appropriate teaching approaches, methodologies and techniques;
• developing values and attitudes which embrace care of the earth, justice, equity and human rights; and
• action and participation, which reflect responsible environmental stewardship. (NEEC, 1998).

These goals could be achieved when principals and other education leaders provide a fertile environment to enable teachers to implement innovative EESD strategies and stimulate and manage change.

Initial Teacher Education

Prospective teachers are educated through a number of routes in teachers’ colleges and universities: 3 year diploma programmes, 3-4 year undergraduate B. Ed. programmes, and 1 year post graduate diploma programmes. However, EESD is not mandatory for these teachers. Courses in early childhood and primary education offer more opportunities for cross-curricular approaches to EESD than secondary programmes. Secondary prospective teachers studying social studies, science subjects and geography are exposed to environmental concerns in content courses, but there is still much to be done in ensuring that the full cohort of teachers develops the knowledge, skills and attitudes required to develop competencies in EESD. A recent review of curricula by a team of writers revealed a dearth of futures thinking, systems thinking, and values education – fundamental principles of EESD – in teacher education programmes (HoLung, 2001).

In-service or Continuing Teacher Education

The Ministry of Education and Youth (MOEY) is committed to continuing teacher professional development. A partnership between the NEEC and the Ministry resulted in EESD being incorporated
into programmes for new principals, school development planning and island-wide orientation for all teachers to the Revised Primary Curriculum.

In addition to the MOEY, other institutions are involved in providing in-service training for educators. The Management Institute for National Development (MIND), the entity responsible for training government employees, offers EESD courses for teachers and school leaders. In addition, some of their long-existing programmes such as *School Management* have been modified to include EESD and environmental issues.

Environmental non-governmental organizations have a long history of involvement in schools, providing professional development opportunities through on-site support and teacher workshops. The Schools’ Environment Programme, in operation for ten years, reaches approximately 400 primary and secondary schools. Best practice workshops targeting two teachers from each school explore relevant environmental topics. Teachers participate in activities and identify opportunities for infusing the workshop topics into everyday classroom teaching. Critically, participants receive certificates endorsed by the Ministry of Education and Youth, which are recognized within the educational appraisal system. The issue of re-certification is important and a system of earning qualifications through continuing education would significantly enhance the teacher professional development landscape.

Efforts to involve college lecturers in action research as a means of professional development were only partially successful (Collins-Figueroa, 2003). Not being used to a culture of research unless it fulfils requirements for qualification, educators saw this exercise as an add-on activity and did not participate readily in the reflection, evaluation and documentation that was required.

While technical assistance provided by these workshops and programmes have resulted in capacity development, it is recognized that there is a scarcity of appropriate materials to support EESD teaching and learning, especially materials featuring the Jamaican context. Even though some materials have been produced, the future emphasis must be on developing and increasing access to appropriate resources.

WHOLE INSTITUTION APPROACHES

The National Plan envisaged schools in which “all staff and learners work to create a sustainable school culture which will encompass classrooms, schoolyard and community” (NEEC, 1998, p. 91). This aim was addressed by STEEP that implemented whole college approaches to EESD in two residential teachers’ colleges, by involving the entire college community in visioning, participatory planning, and implementing plans.

The whole institution approach included:

- Integration of EESD principles in the colleges’ mission statements;
- Infusion of EESD concepts, especially related to environmental stewardship, across disciplines;
- Environmental audits;
Multi-sector committees, involving lecturers, students, administrative and ancillary staff in action planning and implementation for EESD in the college, led by an environmental coordinator;

Student environmental stewards who monitor resource use, and take part in “greening the college grounds”;

A plethora of student campus organizations, including environmental clubs, that implement aspects of the college’s EESD action plans;

Involvement of all college sectors in celebrating chosen calendar events;

Forming partnerships with external groups who participate in capacity building.

The colleges benefited through reduced consumption of resources, where the campus was used for education, investigations and management. All sectors were exposed to professional development to strengthen their capacity for action planning, writing grant proposals and implementing change.

Each college institutionalized EESD in unique ways, with common features being the maintenance of their committees and student clubs. One pilot college has set up an early childhood resource centre, and constructed a pond, butterfly garden and bird watching sites that are used for teaching and learning. The other college has set up a resource center in which teachers utilize waste to make resources for teaching mathematics (Collins-Figueroa, 2003).

The whole school approach was piloted in three primary schools and two secondary schools through a MOEYC/NEEC project. This project used the principles of the whole college approach highlighted above. Exceptional results were achieved in one primary school, where EESD was placed at the core of the school’s development planning. This impacted students’ learning – resulting in improved literacy and numeracy, school attendance, parent and community participation, staff development and the physical environment (Hastings, 2002; NEEC, 2002).

The MOEY has begun to develop standards for schools that will incorporate EESD principles in whole institution approaches.

**CHALLENGES**

The major challenge for EESD in the formal education system is to build capacity of all sectors of education communities to clarify values, critically reflect, negotiate and implement action plans for EESD. To achieve this, there must be acceptance that there is need for new approaches, such as systems thinking and futures thinking that contribute to change in complex social contexts. There is a need also, for school leaders to have the vision to lead change from within their institutions. These approaches to capacity building challenge widely held assumptions that more knowledge and positive attitudinal change lead to behaviour change, and often challenge widely held views and practices by the status quo.

Other challenges include: the difficulty of infusing EESD in packed, national curricula; the difficulty of implementing holistic, interdisciplinary learning where disciplinary boundaries are rigid; insufficient appropriate teaching and learning resources, and knowledgeable, skilled facilitators of learning in
EESD; an immature culture of inquiry through research; and a culture of didactic teaching and inexperience in authentic and formative assessment practices.

SUCCESS FACTORS

Despite the challenges noted, this paper has highlighted the pockets of EESD practices that are occurring in Jamaican formal school education. Where it has been incorporated into national, core curricula, EESD is most likely to be implemented, once teachers are trained for its implementation and supported by school leaders. Initiatives anchored within institutions and mainstreamed rather than implemented as separate, project driven activities, have been sustained.

The collaborative leadership provided by the NEEC, the JBTE, the Ministry of Education, NGOs like the Jamaica Environment Trust, and committed individuals has been a hallmark for successes in EESD implementation.

Other key enabling factors have been: capacity building of stakeholders; interactive, participatory planning and development; and available – though insufficient – funding, from donor agencies, national grant organizations and private sector entities.

THE FUTURE

The dynamic partnerships for EESD that have been nurtured in Jamaica have laid plans for the future. There is recognition of the need to go beyond the national action plan, which is not mandatory, to develop policies for EESD in all sectors of the education system. At present, guidelines for EESD in teacher education are being written to assist in making a shift from promoting environmental awareness to learning for sustainable development using whole institution approaches.

Opportunities must be grasped, as curricula are being reviewed, to ensure that all new curricula being written have a focus on EESD, and that appropriate teaching and learning resources are made available. Perhaps, however, in order to reflect EESD principles, there is a greater need to empower teachers to shape curricula for the creation of local knowledge and for interdisciplinary approaches.

An important need, also, is for stakeholders to work out a research and development agenda around EESD, in collaboration with practicing teachers, to include questions such as: What is the impact of whole institution approaches on learning for sustainability at all levels of the education system? What are the core competencies that teachers need for EESD and how could these be developed? What is the impact of EESD initiatives on students’ learning? These are three of the major questions that would give the evidence so sorely needed for further advancement of EESD in a changing Jamaica.
REFERENCES


